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

- There were two batch discharges during this reporting period on November 4th and November 7th.
- 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
BCR	2024-11-04	2024-11-04	N/A-Batch	Yes for batch	300-350 GPM	220.3 m^3	Lab results attached
BCR	2024-11-07 to 2024-11-08	2024-11-05	N/A-Batch	Yes for batch	200 GPM	261.1 m^3	Lab results attached

*Max discharge is 515 m3/day

Exceedances

No exceedances this reporting period.

Receiving Environment Monitoring

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

Table 4: Upstream Monitoring Information

Location	Date of Lab Sample	Real Time Monitored	Results
Squamish River Upstream	2024-11-04	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	2023-11-04	Yes *	Full set of lab sample results, photo and documentation are provided in Appendix B.

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

Receiving Environment Monitoring Details

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

- Any recorded exceedances in the laboratory and field samples collected from the receiving environment (upstream and downstream) are indicative of the existing background water quality in the Squamish River, and are not related to the EGP Project activities.

Summary-Woodfibre

Site Activities

- Ongoing discharges at the Woodfibre Water Treatment Plant to manage water ingress from tunnel.
- No tunnelling activities

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	2024-11-04	Yes-Appendix C	356m^3
Woodfibre	2024-11-05	Yes-Appendix C*lab sample day	335m^3
Woodfibre	2024-11-06	Yes-Appendix C	299 m^3
Woodfibre	2024-11-07	Yes-Appendix C	336m^3
Woodfibre	2024-11-08	Yes-Appendix C	344m^3
Woodfibre	2024-11-09	Yes-Appendix C	334m^3
Woodfibre	2024-11-10	Yes-Appendix C	305m^3

*Max discharge is 1500m^3/day

Exceedances

See above.

Receiving Environment Monitoring

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

Table 4: Upstream Monitoring Information

Location	Date of Lab Sample	Real Time Monitored	Results
Woodfibre Upstream	2024-11-05	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	2024-11-05	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 10-minute intervals.

Receiving Environment Monitoring Details

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

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	**November 4th**	**Prepared by:** **Date:**	**SD** **November 8th**

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1. Executive Summary and Notes
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Executive Summary and Field Notes:

On November 4th, FKM initiated a new batch discharge at the BC Rail site. The discharge began at 11:05 PM and concluded at 03:20 AM on November 5th. Total volume of discharge water was 220.31 m3, with an average flow rate ranging between 200 to 350 GPM.

Table 1: Discharge details

Date	Time	Flow Rate (GPM)	Volume (m3)	Duration
04-Nov-2024	11:05	300-350	220.3	4 Hour and 15 Minutes

Table 3: In-Situ Sample

Date	Time	pH	Temperature (°C)	DO (mg/L)	NTU	Conductivity (µS/cm)	ORP (mV)	Salinity (ppt)	Visible sheen
11/04/2024	11:01:48 PM	7.00	7.2	8.87	2.93	872	100.6	0.43	No

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**BC Rail Batch Water Discharge Report**	**Revision:**	**0**
Data	**November 4th**	**Prepared by:** **Date:**	**SD** **November 8th**

Discharge Sample results:

Table 3: Lab Sample

Client Sample ID			WTP
Date Sampled			04-Nov-2024
Time Sampled			09:40
ALS Sample ID			VA24C9756-001
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water
Field Tests (Matrix: Water)			
Temperature, field	0.10	°C	11.0
pH, field	0.10	pH units	7.30
Physical Tests (Matrix: Water)			
Conductivity	2.0	µS/cm	800
Alkalinity, bicarbonate (as CaCO3)	1.0	mg/L	189
Alkalinity, carbonate (as CaCO3)	1.0	mg/L	<1.0
Alkalinity, hydroxide (as CaCO3)	1.0	mg/L	<1.0
Alkalinity, phenolphthalein (as CaCO3)	1.0	mg/L	<1.0
Alkalinity, total (as CaCO3)	2.0	mg/L	189
Hardness (as CaCO3), dissolved	0.60	mg/L	120
Hardness (as CaCO3), from total Ca/Mg	0.60	mg/L	136
Oxidation-reduction potential [ORP]	0.10	mV	191
Solids, total dissolved [TDS]	10	mg/L	506
Solids, total suspended [TSS]	3.0	mg/L	<3.0
Turbidity	0.10	NTU	0.53
pH	0.10	pH units	7.64
Anions and Nutrients (Matrix: Water)			
Ammonia, total (as N)	0.0050	mg/L	0.0324
Bromide	0.050	mg/L	<0.250
Chloride	0.50	mg/L	26.5
Fluoride	0.020	mg/L	0.240
Nitrate (as N)	0.0050	mg/L	0.106
Nitrite (as N)	0.0010	mg/L	0.0215

Nitrogen, total	0.030	mg/L	1.03
Phosphorus, total	0.0020	mg/L	0.0263
Sulfate (as SO4)	0.30	mg/L	145
Ammonium (as NH4), field	0.0010	mg/L	0.0416
Organic / Inorganic Carbon (Matrix: Water)			
Carbon, dissolved organic [DOC]	0.50	mg/L	8.51
Carbon, total organic [TOC]	0.50	mg/L	9.03
Total Metals (Matrix: Water)			
Aluminum, total	0.0030	mg/L	0.0215
Antimony, total	0.00010	mg/L	0.00159
Arsenic, total	0.00010	mg/L	0.00252
Barium, total	0.00010	mg/L	0.0489
Beryllium, total	0.000020	mg/L	<0.000020
Bismuth, total	0.000050	mg/L	<0.000050
Boron, total	0.010	mg/L	0.029
Cadmium, total	0.0000050	mg/L	<0.000110
Calcium, total	0.050	mg/L	51.1
Chromium, total	0.00050	mg/L	0.0809
Cobalt, total	0.00010	mg/L	0.00010
Copper, total	0.00050	mg/L	0.00169
Iron, total	0.010	mg/L	<0.010
Lead, total	0.000050	mg/L	<0.000050
Lithium, total	0.0010	mg/L	0.0537
Magnesium, total	0.100	mg/L	2.18
Manganese, total	0.00010	mg/L	0.00079
Mercury, total	0.0000050	mg/L	<0.0000050
Molybdenum, total	0.000050	mg/L	0.467
Nickel, total	0.00050	mg/L	<0.00050
Phosphorus, total	0.050	mg/L	<0.050
Potassium, total	0.100	mg/L	67.5
Selenium, total	0.000050	mg/L	0.00372
Silicon, total	0.10	mg/L	10.5
Silver, total	0.000010	mg/L	<0.000010
Sodium, total	0.050	mg/L	70.4

Strontium, total	0.00020	mg/L	1.37
Sulfur, total	0.50	mg/L	49.1
Thallium, total	0.000010	mg/L	0.000015
Tin, total	0.00010	mg/L	<0.00010
Titanium, total	0.00030	mg/L	<0.00060
Uranium, total	0.000010	mg/L	0.000043
Vanadium, total	0.00050	mg/L	0.00362
Zinc, total	0.0030	mg/L	<0.0030
Zirconium, total	0.00020	mg/L	<0.00020
Dissolved Metals (Matrix: Water)			
Aluminum, dissolved	0.0010	mg/L	0.0215
Antimony, dissolved	0.00010	mg/L	0.00157
Arsenic, dissolved	0.00010	mg/L	0.00263
Barium, dissolved	0.00010	mg/L	0.0470
Beryllium, dissolved	0.000020	mg/L	<0.000020
Bismuth, dissolved	0.000050	mg/L	<0.000050
Boron, dissolved	0.010	mg/L	0.026
Cadmium, dissolved	0.0000050	mg/L	<0.000110
Calcium, dissolved	0.050	mg/L	44.7
Chromium, dissolved	0.00050	mg/L	0.0829
Cobalt, dissolved	0.00010	mg/L	0.00011
Copper, dissolved	0.00020	mg/L	0.00174
Iron, dissolved	0.010	mg/L	<0.010
Lead, dissolved	0.000050	mg/L	<0.000050
Lithium, dissolved	0.0010	mg/L	0.0490
Magnesium, dissolved	0.100	mg/L	2.01
Manganese, dissolved	0.00010	mg/L	0.00078
Mercury, dissolved	0.0000050	mg/L	<0.0000050
Molybdenum, dissolved	0.000050	mg/L	0.479
Nickel, dissolved	0.00050	mg/L	<0.00050
Phosphorus, dissolved	0.050	mg/L	<0.050
Potassium, dissolved	0.100	mg/L	68.2
Selenium, dissolved	0.000050	mg/L	0.00453
Silicon, dissolved	0.050	mg/L	10.4
Silver, dissolved	0.000010	mg/L	<0.000010
Sodium, dissolved	0.050	mg/L	71.3

Strontium, dissolved	0.00020	mg/L	1.25
Sulfur, dissolved	0.50	mg/L	47.8
Thallium, dissolved	0.000010	mg/L	0.000014
Tin, dissolved	0.00010	mg/L	<0.00010
Titanium, dissolved	0.00030	mg/L	0.00051
Uranium, dissolved	0.000010	mg/L	0.000039
Vanadium, dissolved	0.00050	mg/L	0.00362
Zinc, dissolved	0.0010	mg/L	0.0011
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	<0.50
Dichloroethylene, 1,1-	0.50	µg/L	<0.50
Dichloroethylene, cis-1,2-	0.50	µg/L	<0.50

Dichloroethylene, trans-1,2-	0.50	µg/L	<0.50
Dichloromethane	1.0	µg/L	<1.0
Dichloropropylene, trans-1,3-	0.50	µg/L	<0.50
Tetrachloroethylene	0.50	µg/L	<0.50
Trichloroethane, 1,1,1-	0.50	µg/L	<0.50
Trichloroethylene	0.50	µg/L	<0.50
Vinyl chloride	0.40	µg/L	<0.40
Volatile Organic Compounds [Fuels] (Matrix: Water)			
Benzene	0.50	µg/L	<0.50
Ethylbenzene	0.50	µg/L	<0.50
Methyl-tert-butyl ether [MTBE]	0.50	µg/L	<0.50
Styrene	0.50	µg/L	<0.50
Toluene	0.40	µg/L	<0.40
Xylene, m+p-	0.40	µg/L	<0.40
Xylene, o-	0.30	µg/L	<0.30
Xylenes, total	0.50	µg/L	<0.50
Volatile Organic Compounds [THMs] (Matrix: Water)			
Bromodichloromethane	0.50	µg/L	<0.50
Bromoform	0.50	µg/L	<0.50
Chloroform	0.50	µg/L	<0.50
Dibromochloromethane	0.50	µg/L	<0.50
Hydrocarbons (Matrix: Water)			
EPH (C10-C19)	250	µg/L	<250
EPH (C19-C32)	250	µg/L	<250
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	%	88.7
Dichlorotoluene, 3,4-	1.0	%	118
Volatile Organic Compounds Surrogates (Matrix: Water)			

Bromofluorobenzene, 4-	1.0	%	82.2
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	0.353
Polycyclic Aromatic Hydrocarbons Surrogates (Matrix: Water)			
Chrysene-d12	0.1	%	102
Naphthalene-d8	0.1	%	96.2
Phenanthrene-d10	0.1	%	97.0
Glycols (Matrix: Water)			
Diethylene glycol	5.0	mg/L	<5.0
Ethylene glycol	5.0	mg/L	<5.0
Propylene glycol, 1,2-	5.0	mg/L	<5.0
Triethylene glycol	5.0	mg/L	<5.0

Glycols, total (EG+DEG+PG)	10	mg/L	<10
Glycols Surrogates (Matrix: Water)			
Propanediol, 1,3-	1.0	%	97.0

Photo:

Photo 1: No visible sheen observed in the WTP water, November 4th

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**BC Rail Batch Water Discharge Report**	**Revision:**	**0**
Data	**November 7th, 2024**	**Prepared by:** **Date:**	**SD** **November 12th, 2024**

Table of Contents:

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

Executive Summary and Field Notes:

On November 7th, FKM initiated a new batch discharge at the BC Rail site. The discharge began at 01:15 PM and paused at 02:40 PM on November 7th. On November 8th continued discharging at 09:06 AM and conducted on November 8th at 03:47 PM. Total volume of discharge water was 261.1 m3, with an average flow rate ranging between 200 to 350 GPM.

Table 1: Discharge details

Date	Time	Flow Rate (GPM)	Volume (m3)	Duration
07-Nov-2024	01:15 PM	200	68.5	1 Hour and 20 Minutes
08-Nov-2024	09:06 AM	200	192.6	6 Hours and 39 Minuets

Table 3: In-Situ Sample

Date	Time	pH	Temperature (°C)	DO (mg/L)	NTU	Conductivity (µS/cm)	ORP (mV)	Salinity (ppt)	Visible sheen
11/07/2024	02:13:41 PM	7.4	10.3	7.85	0.26	1143	179.5	0.57	No

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data	**November 7th, 2024**	**Prepared by:** **Date:**	**SD** **November 12th, 2024**

Discharge Sample results:

Table 3: Lab Sample

Client Sample ID			WTP
Date Sampled			05-Nov-2024
Time Sampled			16:30
ALS Sample ID			VA24C9955-001
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water
Field Tests (Matrix: Water)			
Temperature, field	0.10	°C	12.0
pH, field	0.10	pH units	7.50
Physical Tests (Matrix: Water)			
Conductivity	2.0	µS/cm	1230
Alkalinity, bicarbonate (as CaCO3)	2.0	mg/L	268
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	268
Hardness (as CaCO3), dissolved	0.60	mg/L	187
Hardness (as CaCO3), from total Ca/Mg	0.60	mg/L	173
Oxidation-reduction potential [ORP]	0.10	mV	190
Solids, total dissolved [TDS]	10	mg/L	780
Solids, total suspended [TSS]	3.0	mg/L	<3.0
Turbidity	0.10	NTU	0.95
pH	0.10	pH units	7.22
Anions and Nutrients (Matrix: Water)			
Ammonia, total (as N)	0.0050	mg/L	0.944
Bromide	0.050	mg/L	<0.250
Chloride	0.50	mg/L	125
Fluoride	0.020	mg/L	0.155
Nitrate (as N)	0.0050	mg/L	0.0329
Nitrite (as N)	0.0010	mg/L	0.0312

Nitrogen, total	0.030	mg/L	2.35
Phosphorus, total	0.0020	mg/L	0.0580
Sulfate (as SO4)	0.30	mg/L	165
Ammonium (as NH4), field	0.0010	mg/L	1.21
Organic / Inorganic Carbon (Matrix: Water)			
Carbon, dissolved organic [DOC]	0.50	mg/L	8.93
Carbon, total organic [TOC]	0.50	mg/L	10.1
Total Metals (Matrix: Water)			
Aluminum, total	0.0030	mg/L	0.0379
Antimony, total	0.00010	mg/L	0.00164
Arsenic, total	0.00010	mg/L	0.00309
Barium, total	0.00010	mg/L	0.0569
Beryllium, total	0.000100	mg/L	<0.000100
Bismuth, total	0.000050	mg/L	<0.000050
Boron, total	0.010	mg/L	0.211
Cadmium, total	0.0000050	mg/L	<0.0000150
Calcium, total	0.050	mg/L	66.7
Cesium, total	0.000010	mg/L	0.00692
Chromium, total	0.00050	mg/L	0.0303
Cobalt, total	0.00010	mg/L	0.00024
Copper, total	0.00050	mg/L	0.00209
Iron, total	0.010	mg/L	0.065
Lead, total	0.000050	mg/L	0.000081
Lithium, total	0.0010	mg/L	0.0210
Magnesium, total	0.0050	mg/L	1.60
Manganese, total	0.00010	mg/L	0.00133
Mercury, total	0.0000050	mg/L	0.0000125
Molybdenum, total	0.000050	mg/L	0.306
Nickel, total	0.00050	mg/L	0.00229
Phosphorus, total	0.050	mg/L	0.050
Potassium, total	0.050	mg/L	34.5
Rubidium, total	0.00020	mg/L	0.122
Selenium, total	0.000050	mg/L	0.00280
Silicon, total	0.10	mg/L	15.8

Silver, total	0.000010	mg/L	<0.000010
Sodium, total	0.050	mg/L	164
Strontium, total	0.00020	mg/L	1.53
Sulfur, total	0.50	mg/L	67.2
Tellurium, total	0.00020	mg/L	0.00025
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	<0.00090
Tungsten, total	0.00010	mg/L	0.00158
Uranium, total	0.000010	mg/L	0.000015
Vanadium, total	0.00050	mg/L	0.00245
Zinc, total	0.0030	mg/L	<0.0030
Zirconium, total	0.00020	mg/L	<0.00020
Dissolved Metals (Matrix: Water)			
Aluminum, dissolved	0.0010	mg/L	0.0238
Antimony, dissolved	0.00010	mg/L	0.00169
Arsenic, dissolved	0.00010	mg/L	0.00312
Barium, dissolved	0.00010	mg/L	0.0576
Beryllium, dissolved	0.000100	mg/L	<0.000100
Bismuth, dissolved	0.000050	mg/L	<0.000050
Boron, dissolved	0.010	mg/L	0.220
Cadmium, dissolved	0.0000050	mg/L	<0.0000650
Calcium, dissolved	0.050	mg/L	72.3
Cesium, dissolved	0.000010	mg/L	0.00733
Chromium, dissolved	0.00050	mg/L	0.0270
Cobalt, dissolved	0.00010	mg/L	0.00023
Copper, dissolved	0.00020	mg/L	0.00176
Iron, dissolved	0.010	mg/L	0.032
Lead, dissolved	0.000050	mg/L	<0.000050
Lithium, dissolved	0.0010	mg/L	0.0237
Magnesium, dissolved	0.0050	mg/L	1.54
Manganese, dissolved	0.00010	mg/L	0.00123
Mercury, dissolved	0.0000050	mg/L	<0.0000050
Molybdenum, dissolved	0.000050	mg/L	0.320
Nickel, dissolved	0.00050	mg/L	0.00221

Phosphorus, dissolved	0.050	mg/L	<0.050
Potassium, dissolved	0.050	mg/L	35.2
Rubidium, dissolved	0.00020	mg/L	0.120
Selenium, dissolved	0.000050	mg/L	0.00298
Silicon, dissolved	0.050	mg/L	14.3
Silver, dissolved	0.000010	mg/L	<0.000010
Sodium, dissolved	0.050	mg/L	168
Strontium, dissolved	0.00020	mg/L	1.59
Sulfur, dissolved	0.50	mg/L	56.3
Tellurium, dissolved	0.00020	mg/L	<0.00020
Thallium, dissolved	0.000010	mg/L	<0.000010
Thorium, dissolved	0.00010	mg/L	<0.00010
Tin, dissolved	0.00010	mg/L	<0.00010
Titanium, dissolved	0.00030	mg/L	<0.00060
Tungsten, dissolved	0.00010	mg/L	0.00166
Uranium, dissolved	0.000010	mg/L	0.000015
Vanadium, dissolved	0.00050	mg/L	0.00236
Zinc, dissolved	0.0010	mg/L	0.0024
Zirconium, dissolved	0.00020	mg/L	<0.00020
Dissolved mercury filtration location			Laboratory
Dissolved metals filtration location			Laboratory
Aggregate Organics (Matrix: Water)			
Phenols, total (4AAP)	0.001000000	mg/L	
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	<0.50
Dichloroethylene, 1,1-	0.50	µg/L	<0.50
Dichloroethylene, cis-1,2-	0.50	µg/L	<0.50
Dichloroethylene, trans-1,2-	0.50	µg/L	<0.50
Dichloromethane	1.0	µg/L	<1.0
Dichloropropylene, trans-1,3-	0.50	µg/L	<0.50
Tetrachloroethylene	0.50	µg/L	<0.50
Trichloroethane, 1,1,1-	0.50	µg/L	<0.50
Trichloroethylene	0.50	µg/L	<0.50
Vinyl chloride	0.40	µg/L	<0.40
Volatile Organic Compounds [Fuels] (Matrix: Water)			
Benzene	0.50	µg/L	<0.50
Ethylbenzene	0.50	µg/L	<0.50
Methyl-tert-butyl ether [MTBE]	0.50	µg/L	<0.50
Styrene	0.50	µg/L	<0.50
Toluene	0.40	µg/L	<0.40
Xylene, m+p-	0.40	µg/L	<0.40
Xylene, o-	0.30	µg/L	<0.30
Xylenes, total	0.50	µg/L	<0.50
Volatile Organic Compounds [THMs] (Matrix: Water)			
Bromodichloromethane	0.50	µg/L	<0.50
Bromoform	0.50	µg/L	<0.50
Chloroform	0.50	µg/L	<0.50
Dibromochloromethane	0.50	µg/L	<0.50
Hydrocarbons (Matrix: Water)			
EPH (C10-C19)	250	µg/L	<250
EPH (C19-C32)	250	µg/L	<250

LEPHw	250	µg/L	<250
HEPHw	250	µg/L	<250
Hydrocarbons Surrogates (Matrix: Water)			
Bromobenzotrifluoride, 2- (EPH surrogate)	1.0	%	96.4
Volatile Organic Compounds Surrogates (Matrix: Water)			
Bromofluorobenzene, 4-	1.0	%	94.2
Difluorobenzene, 1,4-	1.0	%	98.6
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	0.353
Polycyclic Aromatic Hydrocarbons Surrogates (Matrix: Water)			
Chrysene-d12	0.1	%	107
Naphthalene-d8	0.1	%	103

Phenanthrene-d10	0.1	%	107
Glycols (Matrix: Water)			
Diethylene glycol	5.0	mg/L	<5.0
Ethylene glycol	5.0	mg/L	<5.0
Propylene glycol, 1,2-	5.0	mg/L	<5.0
Triethylene glycol	5.0	mg/L	<5.0
Glycols, total (EG+DEG+PG)	10	mg/L	<10
Glycols Surrogates (Matrix: Water)			
Propanediol, 1,3-	1.0	%	128

Photo:

Photo 1: No visible sheen observed in the WTP water, November 4th

BCR Site Batch Sample Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order	:	**VA24C9756**			
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	:	04-Nov-2024 11:45
PO	:	----	Date Analysis Commenced	:	04-Nov-2024
C-O-C number	:	23-1083427	Issue Date	:	06-Nov-2024 13:18
Sampler	:	----			
Site	:	BC Rail			
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
Cindy Tang	Team Leader - Inorganics	Inorganics, Burnaby, British Columbia
Daniel Shabestani	Lab Assistant	Metals, Burnaby, British Columbia
Janice Leung	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Leon Yang	Analyst	Inorganics, Burnaby, British Columbia
Maya Urquhart	Lab Analyst	Metals, Burnaby, British Columbia
Paul Cushing	Team Leader - Organics	Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Organics, Burnaby, British Columbia
Russell Zhang	Analyst	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia
Virginia Smith	Account Manager Assistant	Administration, 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*
mg/L	milligrams per litre
µg/L	micrograms per litre
°C	degrees celsius
pH units	pH units
µS/cm	microsiemens per centimetre
NTU	nephelometric turbidity units
mV	millivolts
-	no units

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

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	*Client Id*	*Comment*
VA24C9756-001	WTP	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.
VA24C9756-001	WTP	Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. 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).

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	WTP	----	----	----	----
				Client sampling date / time	04-Nov-2024 09:40	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9756-001	----	----	----	----
					Result	----	----	----	----
Field Tests									
pH, field	----	EF001/VA	0.10	pH units	7.30	----	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	11.0	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	1.0	mg/L	189	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	189	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	800	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	120	----	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	136	----	----	----	----
Oxidation-reduction potential [ORP]	----	E125/VA	0.10	mV	191	----	----	----	----
pH	----	E108/VA	0.10	pH units	7.64	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	506	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	0.53	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0324	----	----	----	----
Ammonium (as NH4), field	14798-03-9	EC298A/VA	0.0010	mg/L	0.0416	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.250 DLDS	----	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	26.5	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WTP	----	----	----	----
					Client sampling date / time	04-Nov-2024 09:40	----	----	----	----
						VA24C9756-001	----	----	----	----
						Result	----	----	----	----
Anions and Nutrients										
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		0.240	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		0.106	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L		0.0215	----	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L		1.03	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.0263	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		145	----	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		8.51	----	----	----	----
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L		9.03	----	----	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		0.0215	----	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		0.00159	----	----	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00252	----	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.0489	----	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L		<0.000020	----	----	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L		<0.000050	----	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L		0.029	----	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		<0.000110 DLM	----	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		51.1	----	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		0.00010	----	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00169	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WTP	----	----	----	----
					Client sampling date / time	04-Nov-2024 09:40	----	----	----	----
						VA24C9756-001	----	----	----	----
						Result	----	----	----	----
Total Metals										
Iron, total	7439-89-6	E420/VA	0.010	mg/L		<0.010	----	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		<0.000050	----	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0537	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.100	mg/L		2.18	----	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.00079	----	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L		<0.0000050	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.467	----	----	----	----
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	0.100	mg/L		67.5	----	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		0.00372	----	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		10.5	----	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	----	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		70.4	----	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		1.37	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		49.1	----	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		0.000015	----	----	----	----
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00010	----	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		<0.00060 DLM	----	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.000043	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.00362	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WTP	----	----	----	----
					Client sampling date / time	04-Nov-2024 09:40	----	----	----	----
						VA24C9756-001	----	----	----	----
						Result	----	----	----	----
Total Metals										
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		<0.0030	----	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	----	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		0.0809	----	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0215	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		0.00157	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00263	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.0470	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L		<0.000020	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		<0.000050	----	----	----	----
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		0.026	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		<0.000110 DLM	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		44.7	----	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		0.0829	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		0.00011	----	----	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.00174	----	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		<0.010	----	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		0.0490	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.100	mg/L		2.01	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00078	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP	----	----	----	----
					Client sampling date / time	04-Nov-2024 09:40	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit		VA24C9756-001	----	----	----	----
						Result	----	----	----	----
Dissolved Metals										
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.479	----	----	----	----
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	0.100	mg/L		68.2	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		0.00453	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		10.4	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		71.3	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		1.25	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		47.8	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		0.000014	----	----	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	----	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		0.00051	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.000039	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		0.00362	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0011	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP	----	----	----	----
					Client sampling date / time	04-Nov-2024 09:40	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit		VA24C9756-001	----	----	----	----
						Result	----	----	----	----
Aggregate Organics										
Phenols, total (4AAP)	----	E562/EO	0.0010	mg/L		<0.0010	----	----	----	----
Volatile Organic Compounds										
Chlorobenzene	108-90-7	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Chloromethane	74-87-3	E611C/VA	5.0	µg/L		<5.0	----	----	----	----
Dichlorobenzene, 1,2-	95-50-1	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichlorobenzene, 1,3-	541-73-1	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichlorobenzene, 1,4-	106-46-7	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloropropane, 1,2-	78-87-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloropropylene, cis+trans-1,3-	542-75-6	E611C/VA	0.75	µg/L		<0.75	----	----	----	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C/VA	0.20	µg/L		<0.20	----	----	----	----
Trichloroethane, 1,1,2-	79-00-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Trichlorofluoromethane	75-69-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP	----	----	----	----
					Client sampling date / time	04-Nov-2024 09:40	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit		VA24C9756-001	----	----	----	----
						Result	----	----	----	----
Volatile Organic Compounds [Drycleaning]										
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	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP	----	----	----	----
					Client sampling date / time	04-Nov-2024 09:40	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit		VA24C9756-001	----	----	----	----
						Result	----	----	----	----
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	%		88.7	----	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%		118	----	----	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%		82.2	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611C/VA	1.0	%		101	----	----	----	----
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	83-32-9	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP	----	----	----	----
					Client sampling date / time	04-Nov-2024 09:40	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit		VA24C9756-001	----	----	----	----
						Result	----	----	----	----
Polycyclic Aromatic Hydrocarbons										
Benzo(g,h,i)perylene	191-24-2	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Benzo(k)fluoranthene	207-08-9	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Chrysene	218-01-9	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	E641A/VA	0.0050	µg/L		<0.0050	----	----	----	----
Fluoranthene	206-44-0	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Fluorene	86-73-7	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Methylnaphthalene, 1-	90-12-0	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Methylnaphthalene, 2-	91-57-6	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Naphthalene	91-20-3	E641A/VA	0.050	µg/L		<0.050	----	----	----	----
Phenanthrene	85-01-8	E641A/VA	0.020	µg/L		<0.020	----	----	----	----
Pyrene	129-00-0	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Quinoline	91-22-5	E641A/VA	0.050	µg/L		0.353	----	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A/VA	0.1	%		102	----	----	----	----
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%		96.2	----	----	----	----
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%		97.0	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	WTP	----	----	----	----
				Client sampling date / time	04-Nov-2024 09:40	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9756-001	----	----	----	----
					Result	----	----	----	----
Glycols									
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	%	97.0	----	----	----	----

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

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

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ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **VA24C9756**	Page	: 1 of 22
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	: 04-Nov-2024 11:45
PO	: ----	Date Analysis Commenced	: 04-Nov-2024
C-O-C number	: 23-1083427	Issue Date	: 06-Nov-2024 14:19
Sampler	: ----		
Site	: BC Rail		
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
Cindy Tang	Team Leader - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Daniel Shabestani	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Janice Leung	Supervisor - Organics Instrumentation	Vancouver Organics, Burnaby, British Columbia
Leon Yang	Analyst	Vancouver Inorganics, Burnaby, British Columbia
Maya Urquhart	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
Paul Cushing	Team Leader - Organics	Vancouver Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Vancouver Organics, Burnaby, British Columbia
Russell Zhang	Analyst	Vancouver Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia
Virginia Smith	Account Manager Assistant	Vancouver Administration, 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: 1748989)											
VA24C9756-001	WTP	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	189	188	0.585%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	189	188	0.585%	20%	----
Physical Tests (QC Lot: 1748990)											
VA24C9756-001	WTP	pH	----	E108	0.10	pH units	7.64	7.58	0.788%	4%	----
Physical Tests (QC Lot: 1748991)											
VA24C9756-001	WTP	Conductivity	----	E100	2.0	µS/cm	800	784	2.02%	10%	----
Physical Tests (QC Lot: 1749019)											
VA24C9750-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	47.9	45.7	4.70%	20%	----
Physical Tests (QC Lot: 1749022)											
VA24C9750-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	162	156	7	Diff <2x LOR	----
Physical Tests (QC Lot: 1751090)											
FJ2403329-001	Anonymous	Turbidity	----	E121	0.10	NTU	32.2	32.7	1.54%	15%	----
Physical Tests (QC Lot: 1751318)											
FJ2403369-001	Anonymous	Oxidation-reduction potential [ORP]	----	E125	0.10	mV	167	167	0.479%	10%	----
Anions and Nutrients (QC Lot: 1750768)											
VA24C9697-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	<0.155	0.141	0.014	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1750769)											
VA24C9697-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1750770)											
VA24C9697-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	6.94	7.21	3.79%	20%	----
Anions and Nutrients (QC Lot: 1750771)											
VA24C9697-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	11.3	11.0	2.07%	20%	----
Anions and Nutrients (QC Lot: 1750772)											
VA24C9697-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.750	0.735	1.96%	20%	----
Anions and Nutrients (QC Lot: 1750773)											
VA24C9697-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	7.71	7.37	4.50%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 1750935)											
VA24C9561-002	Anonymous	Nitrogen, total	7727-37-9	E366	1.50	mg/L	59.6	59.1	0.808%	20%	----
Anions and Nutrients (QC Lot: 1750936)											
VA24C9561-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0406	0.0410	1.22%	20%	----
Anions and Nutrients (QC Lot: 1750937)											
VA24C9373-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0500	mg/L	9.66	9.60	0.686%	20%	----
Organic / Inorganic Carbon (QC Lot: 1750446)											
VA24C9756-001	WTP	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	8.51	8.31	2.38%	20%	----
Organic / Inorganic Carbon (QC Lot: 1750934)											
VA24C9756-001	WTP	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	9.03	8.82	2.38%	20%	----
Total Metals (QC Lot: 1749030)											
VA24C9756-001	WTP	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0215	0.0226	0.0011	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00159	0.00160	0.348%	20%	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00252	0.00248	1.56%	20%	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0489	0.0493	0.801%	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	0.029	0.029	0.0005	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.000110	mg/L	<0.000110	<0.000110	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	51.1	51.1	0.0722%	20%	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	0.0809	0.0801	0.982%	20%	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00010	0.00011	0.000006	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00169	0.00168	0.000007	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0537	0.0529	1.37%	20%	----
		Magnesium, total	7439-95-4	E420	0.100	mg/L	2.18	2.17	0.284%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00079	0.00084	0.00005	Diff <2x LOR	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.467	0.471	0.921%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.100	mg/L	67.5	67.7	0.346%	20%	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.00372	0.00360	3.40%	20%	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	10.5	10.5	0.390%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 1749030) - continued											
VA24C9756-001	WTP	Sodium, total	7440-23-5	E420	0.050	mg/L	70.4	70.5	0.146%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	1.37	1.38	0.690%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	49.1	48.4	1.40%	20%	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	0.000015	0.000014	0.000001	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000043	0.000043	0.0000002	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00362	0.00362	0.000007	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1749435)											
VA24C9750-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0000092	0.0000152	0.0000061	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1749032)											
FJ2403357-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0095	0.0098	0.0003	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00029	0.00029	0.000002	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00123	0.00123	0.197%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0235	0.0240	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	0.110	0.112	2.00%	20%	----
		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	83.1	83.0	0.0914%	20%	----
		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	0.00011	0.00011	0.0000006	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00097	0.00097	0.000006	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.022	0.022	0.00006	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	0.0278	0.0280	0.511%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	43.9	42.8	2.44%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00612	0.00615	0.473%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0130	0.0128	0.970%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00211	0.00212	0.000009	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	6.31	6.17	2.17%	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: 1749032) - continued											
FJ2403357-001	Anonymous	Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000438	0.000430	0.000009	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	0.150	0.148	0.002	Diff <2x LOR	----
		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	74.6	74.2	0.576%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.615	0.610	0.799%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	139	140	0.760%	20%	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	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	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00220	0.00219	0.450%	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	0.0012	0.0011	0.0001	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: 1749422)											
VA24C9750-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 1750527)											
WT2432637-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	0.0073	0.0080	0.0007	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1749039)											
VA24C9750-001	Anonymous	Benzene	71-43-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloromethane	74-87-3	E611C	5.0	µg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Volatile Organic Compounds (QC Lot: 1749039) - continued											
VA24C9750-001	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	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: 1749038)											
VA24C9750-001	Anonymous	VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----
Glycols (QC Lot: 1749645)											
VA24C9750-001	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	<5.0	<5.0	0	Diff <2x LOR	----
		Propylene glycol, 1,2-	57-55-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Triethylene glycol	112-27-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----

Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1748989)						
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: 1748991)						
Conductivity	----	E100	1	µS/cm	1.1	----
Physical Tests (QCLot: 1749019)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1749022)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1751090)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 1750768)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1750769)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1750770)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1750771)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1750772)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1750773)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1750935)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1750936)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1750937)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1750446)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Organic / Inorganic Carbon (QCLot: 1750446) - continued						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1750934)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 1749030)						
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	----
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	----
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	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1749030) - continued						
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: 1749435)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1749032)						
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	----
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	----
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	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
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: 1749032) - continued						
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
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: 1749422)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Aggregate Organics (QCLot: 1750527)						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
Volatile Organic Compounds (QCLot: 1749039)						
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	----
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1749039) - continued						
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: 1749027)						
EPH (C10-C19)	----	E601A	250	µg/L	<250	----
EPH (C19-C32)	----	E601A	250	µg/L	<250	----
Hydrocarbons (QCLot: 1749038)						
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1749028)						
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	----
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1749028) - continued						
Quinoline	91-22-5	E641A	0.05	µg/L	<0.050	----
Glycols (QCLot: 1749645)						
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: 1748989)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	108	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1748990)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1748991)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	105	90.0	110	----
Physical Tests (QCLot: 1749019)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	115	85.0	115	----
Physical Tests (QCLot: 1749022)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	85.4	85.0	115	----
Physical Tests (QCLot: 1751090)									
Turbidity	----	E121	0.1	NTU	200 NTU	100.0	85.0	115	----
Anions and Nutrients (QCLot: 1750768)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.0	90.0	110	----
Anions and Nutrients (QCLot: 1750769)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1750770)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 1750771)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1750772)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	97.9	90.0	110	----
Anions and Nutrients (QCLot: 1750773)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1750935)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	93.7	75.0	125	----
Anions and Nutrients (QCLot: 1750936)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	94.3	80.0	120	----
Anions and Nutrients (QCLot: 1750937)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	103	85.0	115	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 1750446)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	98.7	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1750934)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	101	80.0	120	----
Total Metals (QCLot: 1749030)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	100	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	101	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	100	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	99.9	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	97.2	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	101	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	95.3	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	99.0	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	98.5	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	98.7	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	99.1	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	101	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	99.2	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	98.2	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	105	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	97.8	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	103	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	104	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	94.6	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	105	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	97.8	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	99.2	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	102	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	98.8	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	102	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	97.9	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: 1749030) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	99.9	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	97.4	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	96.9	80.0	120	----
Total Metals (QCLot: 1749435)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	95.2	80.0	120	----
Dissolved Metals (QCLot: 1749032)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	97.0	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	101	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	101	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	95.8	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	97.1	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	96.6	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	97.0	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	94.4	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	99.9	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	96.2	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	96.4	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	99.1	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	98.6	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	97.7	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	96.7	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	97.1	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	95.6	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	104	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	94.1	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	104	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	96.7	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	98.2	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	91.7	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.8	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	101	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: 1749032) - continued									
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	100	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.0	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.3	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	99.6	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	97.5	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	93.8	80.0	120	----
Aggregate Organics (QCLot: 1750527)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	93.4	85.0	115	----
Volatile Organic Compounds (QCLot: 1749039)									
Benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	88.9	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	94.5	70.0	130	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	100 µg/L	99.2	70.0	130	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	100 µg/L	104	70.0	130	----
Chloroethane	75-00-3	E611C	0.5	µg/L	100 µg/L	103	60.0	140	----
Chloroform	67-66-3	E611C	0.5	µg/L	100 µg/L	96.8	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	94.6	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	100 µg/L	119	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	100 µg/L	120	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	100 µg/L	98.4	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	92.5	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	100 µg/L	97.8	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	100 µg/L	89.4	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	109	70.0	130	----
Dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	99.3	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	95.5	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	94.5	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	107	70.0	130	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	100 µg/L	90.1	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	91.6	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	100 µg/L	103	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: 1749039) - continued									
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	90.8	70.0	130	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	115	70.0	130	----
Toluene	108-88-3	E611C	0.4	µg/L	100 µg/L	92.7	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	100 µg/L	96.3	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	93.9	70.0	130	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	98.7	70.0	130	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	100 µg/L	101	60.0	140	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	100 µg/L	99.9	60.0	140	----
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	200 µg/L	112	70.0	130	----
Xylene, o-	95-47-6	E611C	0.3	µg/L	100 µg/L	89.7	70.0	130	----
Hydrocarbons (QCLot: 1749027)									
EPH (C10-C19)	----	E601A	250	µg/L	6490 µg/L	96.5	70.0	130	----
EPH (C19-C32)	----	E601A	250	µg/L	3360 µg/L	82.5	70.0	130	----
Hydrocarbons (QCLot: 1749038)									
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	101	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1749028)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.5 µg/L	104	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.5 µg/L	114	60.0	130	----
Acridine	260-94-6	E641A	0.01	µg/L	0.5 µg/L	106	60.0	130	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.5 µg/L	111	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.5 µg/L	100	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	98.5	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.5 µg/L	116	60.0	130	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.5 µg/L	109	60.0	130	----
Chrysene	218-01-9	E641A	0.01	µg/L	0.5 µg/L	112	60.0	130	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.5 µg/L	112	60.0	130	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.5 µg/L	109	60.0	130	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.5 µg/L	106	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.5 µg/L	106	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.5 µg/L	103	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.5 µg/L	111	60.0	130	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.5 µg/L	108	50.0	130	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.5 µg/L	110	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: 1749028) - continued									
Pyrene	129-00-0	E641A	0.01	µg/L	0.5 µg/L	108	60.0	130	----
Quinoline	91-22-5	E641A	0.05	µg/L	0.5 µg/L	117	60.0	130	----
Glycols (QCLot: 1749645)									
Diethylene glycol	111-46-6	E680E	5	mg/L	25 mg/L	98.2	70.0	130	----
Ethylene glycol	107-21-1	E680E	5	mg/L	25 mg/L	96.2	70.0	130	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	25 mg/L	96.3	70.0	130	----
Triethylene glycol	112-27-6	E680E	5	mg/L	25 mg/L	99.9	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: 1750768)										
VA24C9756-001	WTP	Fluoride	16984-48-8	E235.F	5.01 mg/L	5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1750769)										
VA24C9756-001	WTP	Chloride	16887-00-6	E235.Cl	505 mg/L	500 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1750770)										
VA24C9756-001	WTP	Bromide	24959-67-9	E235.Br-L	3.13 mg/L	2.5 mg/L	125	75.0	125	----
Anions and Nutrients (QCLot: 1750771)										
VA24C9756-001	WTP	Nitrate (as N)	14797-55-8	E235.NO3-L	12.6 mg/L	12.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1750772)										
VA24C9756-001	WTP	Nitrite (as N)	14797-65-0	E235.NO2-L	2.39 mg/L	2.5 mg/L	95.6	75.0	125	----
Anions and Nutrients (QCLot: 1750773)										
VA24C9756-001	WTP	Sulfate (as SO4)	14808-79-8	E235.SO4	506 mg/L	500 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1750935)										
VA24C9561-002	Anonymous	Nitrogen, total	7727-37-9	E366	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1750936)										
VA24C9561-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0481 mg/L	0.05 mg/L	96.2	70.0	130	----
Anions and Nutrients (QCLot: 1750937)										
VA24C9373-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1750934)										
VA24C9756-001	WTP	Carbon, total organic [TOC]	----	E355-L	ND mg/L	----	ND	70.0	130	----
Total Metals (QCLot: 1749435)										
VA24C9750-002	Anonymous	Mercury, total	7439-97-6	E508	0.0000935 mg/L	0 mg/L	93.5	70.0	130	----
Dissolved Metals (QCLot: 1749032)										
KS2404471-001	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	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0210 mg/L	0.02 mg/L	105	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	95.1	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00908 mg/L	0.01 mg/L	90.8	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.099 mg/L	0.1 mg/L	98.8	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00390 mg/L	0.004 mg/L	97.6	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0389 mg/L	0.04 mg/L	97.3	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0187 mg/L	0.02 mg/L	93.4	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: 1749032) - continued										
KS2404471-001	Anonymous	Copper, dissolved	7440-50-8	E421	0.0181 mg/L	0.02 mg/L	90.5	70.0	130	----
		Iron, dissolved	7439-89-6	E421	ND mg/L	----	ND	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0181 mg/L	0.02 mg/L	90.6	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0936 mg/L	0.1 mg/L	93.6	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	0.0214 mg/L	0.02 mg/L	107	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0367 mg/L	0.04 mg/L	91.7	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.6 mg/L	10 mg/L	106	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0408 mg/L	0.04 mg/L	102	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	ND mg/L	----	ND	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00401 mg/L	0.004 mg/L	100	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	20.2 mg/L	20 mg/L	101	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00364 mg/L	0.004 mg/L	91.0	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0416 mg/L	0.04 mg/L	104	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00383 mg/L	0.004 mg/L	95.8	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0992 mg/L	0.1 mg/L	99.2	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.380 mg/L	0.4 mg/L	95.0	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
Dissolved Metals (QCLot: 1749422)										
VA24C9750-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000938 mg/L	0 mg/L	93.8	70.0	130	----
Aggregate Organics (QCLot: 1750527)										
SK2406479-002	Anonymous	Phenols, total (4AAP)	----	E562	0.0188 mg/L	0.02 mg/L	94.0	75.0	125	----
Volatile Organic Compounds (QCLot: 1749039)										
VA24C9750-001	Anonymous	Benzene	71-43-2	E611C	90.4 µg/L	100 µg/L	90.4	60.0	140	----
		Bromodichloromethane	75-27-4	E611C	94.9 µg/L	100 µg/L	94.9	60.0	140	----
		Bromoform	75-25-2	E611C	93.0 µg/L	100 µg/L	93.0	60.0	140	----
		Carbon tetrachloride	56-23-5	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Chlorobenzene	108-90-7	E611C	98.8 µg/L	100 µg/L	98.8	60.0	140	----
		Chloroethane	75-00-3	E611C	101 µg/L	100 µg/L	101	50.0	150	----
		Chloroform	67-66-3	E611C	100 µg/L	100 µg/L	100	60.0	140	----
		Chloromethane	74-87-3	E611C	95.8 µg/L	100 µg/L	95.8	50.0	150	----
		Dibromochloromethane	124-48-1	E611C	92.0 µg/L	100 µg/L	92.0	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	94.6 µg/L	100 µg/L	94.6	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	114 µg/L	100 µg/L	114	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	114 µg/L	100 µg/L	114	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611C	100 µg/L	100 µg/L	100	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611C	95.2 µg/L	100 µg/L	95.2	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611C	97.9 µg/L	100 µg/L	97.9	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: 1749039) - continued										
VA24C9750-001	Anonymous	Dichloroethylene, cis-1,2-	156-59-2	E611C	90.6 µg/L	100 µg/L	90.6	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	109 µg/L	100 µg/L	109	60.0	140	----
		Dichloromethane	75-09-2	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611C	98.4 µg/L	100 µg/L	98.4	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	95.7 µg/L	100 µg/L	95.7	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Ethylbenzene	100-41-4	E611C	84.7 µg/L	100 µg/L	84.7	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	118 µg/L	100 µg/L	118	60.0	140	----
		Styrene	100-42-5	E611C	85.3 µg/L	100 µg/L	85.3	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	100.0 µg/L	100 µg/L	100.0	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	86.7 µg/L	100 µg/L	86.7	60.0	140	----
		Tetrachloroethylene	127-18-4	E611C	109 µg/L	100 µg/L	109	60.0	140	----
		Toluene	108-88-3	E611C	86.0 µg/L	100 µg/L	86.0	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	99.9 µg/L	100 µg/L	99.9	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	90.0 µg/L	100 µg/L	90.0	60.0	140	----
		Trichloroethylene	79-01-6	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611C	100 µg/L	100 µg/L	100	50.0	150	----
		Vinyl chloride	75-01-4	E611C	97.7 µg/L	100 µg/L	97.7	50.0	150	----
		Xylene, m+p-	179601-23-1	E611C	214 µg/L	200 µg/L	107	60.0	140	----
		Xylene, o-	95-47-6	E611C	84.0 µg/L	100 µg/L	84.0	60.0	140	----
Hydrocarbons (QCLot: 1749038)										
VA24C9750-002	Anonymous	VHw (C6-C10)	----	E581.VH+F1	5960 µg/L	6310 µg/L	94.5	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: 1751318)									
QC-1751318-001	RM	Oxidation-reduction potential [ORP]	----	E125	220 mV	102	95.0	105	----

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24C9756**	Page	: 1 of 14
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	: 04-Nov-2024 11:45
PO	: ----	Issue Date	: 06-Nov-2024 13:34
C-O-C number	: 23-1083427		
Sampler	: ----		
Site	: BC Rail		
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.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

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

Outliers : Frequency of Quality Control Samples

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

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	04-Nov-2024	05-Nov-2024	28 days	1 days	✓	05-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WTP	E298	04-Nov-2024	05-Nov-2024	28 days	1 days	✓	05-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WTP	E235.Br-L	04-Nov-2024	05-Nov-2024	28 days	1 days	✓	05-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WTP	E235.Cl	04-Nov-2024	05-Nov-2024	28 days	1 days	✓	05-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WTP	E235.F	04-Nov-2024	05-Nov-2024	28 days	1 days	✓	05-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WTP	E235.NO3-L	04-Nov-2024	05-Nov-2024	3 days	1 days	✓	05-Nov-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WTP	E235.NO2-L	04-Nov-2024	05-Nov-2024	3 days	1 days	✓	05-Nov-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 : Sulfate in Water by IC										
HDPE WTP	E235.SO4	04-Nov-2024	05-Nov-2024	28 days	1 days	✓	05-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WTP	E366	04-Nov-2024	05-Nov-2024	28 days	1 days	✓	05-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) WTP	E372-U	04-Nov-2024	05-Nov-2024	28 days	1 days	✓	05-Nov-2024	28 days	1 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
HDPE dissolved (nitric acid) WTP	E509	04-Nov-2024	04-Nov-2024	0 hrs	7 hrs	× UCP	04-Nov-2024	0 hrs	7 hrs	× UCP
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WTP	E421	04-Nov-2024	04-Nov-2024	180 days	0 days	✓	04-Nov-2024	180 days	0 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
HDPE WTP	EF001	04-Nov-2024	----	----	----		04-Nov-2024	----	0 days	
Glycols : Glycols (4 analytes) by GC-FID										
Glass vial (sodium bisulfate) WTP	E680E	04-Nov-2024	04-Nov-2024	14 days	0 days	✓	05-Nov-2024	40 days	1 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) WTP	E601A	04-Nov-2024	04-Nov-2024	14 days	0 days	✓	04-Nov-2024	40 days	0 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate) WTP	E581.VH+F1	04-Nov-2024	04-Nov-2024	14 days	0 days	✓	04-Nov-2024	14 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
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
HDPE WTP	E358-L	04-Nov-2024	05-Nov-2024	3 days	1 days	✓	05-Nov-2024	28 days	0 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) WTP	E355-L	04-Nov-2024	05-Nov-2024	28 days	1 days	✓	05-Nov-2024	28 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WTP	E290	04-Nov-2024	04-Nov-2024	14 days	0 days	✓	04-Nov-2024	14 days	0 days	✓
Physical Tests : Conductivity in Water										
HDPE WTP	E100	04-Nov-2024	04-Nov-2024	28 days	0 days	✓	04-Nov-2024	28 days	0 days	✓
Physical Tests : ORP by Electrode										
HDPE WTP	E125	04-Nov-2024	----	----	----		05-Nov-2024	0.25 hrs	28 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE WTP	E108	04-Nov-2024	04-Nov-2024	0.25 hrs	3 hrs	✗ EHTR-FM	04-Nov-2024	0.25 hrs	3 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE WTP	E162	04-Nov-2024	----	----	----		04-Nov-2024	7 days	0 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WTP	E160	04-Nov-2024	----	----	----		04-Nov-2024	7 days	0 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE WTP	E121	04-Nov-2024	----	----	----		05-Nov-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*
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) WTP	E641A	04-Nov-2024	04-Nov-2024	14 days	0 days	✓	04-Nov-2024	40 days	0 days	✓
Total Metals : Total Mercury in Water by CVAAS										
HDPE total (nitric acid) WTP	E508	04-Nov-2024	04-Nov-2024	0 hrs	7 hrs	× UCP	04-Nov-2024	0 hrs	7 hrs	× UCP
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) WTP	E420	04-Nov-2024	04-Nov-2024	180 days	0 days	✓	04-Nov-2024	180 days	0 days	✓
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate) WTP	E611C	04-Nov-2024	04-Nov-2024	14 days	0 days	✓	04-Nov-2024	14 days	0 days	✓

Legend & Qualifier Definitions

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

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

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1748989	1	5	20.0	5.0	✓
Ammonia by Fluorescence	E298	1750937	1	4	25.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1750770	1	2	50.0	5.0	✓
Chloride in Water by IC	E235.Cl	1750769	1	2	50.0	5.0	✓
Conductivity in Water	E100	1748991	1	1	100.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1749422	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1749032	1	5	20.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1750446	1	1	100.0	5.0	✓
Fluoride in Water by IC	E235.F	1750768	1	2	50.0	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1749645	1	5	20.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1750771	1	2	50.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1750772	1	2	50.0	5.0	✓
ORP by Electrode	E125	1751318	1	19	5.2	5.0	✓
pH by Meter	E108	1748990	1	5	20.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1750527	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1750773	1	2	50.0	5.0	✓
TDS by Gravimetry	E162	1749022	1	5	20.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1749435	1	5	20.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1749030	1	1	100.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1750935	1	3	33.3	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1750934	1	3	33.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1750936	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	1749019	1	5	20.0	5.0	✓
Turbidity by Nephelometry	E121	1751090	1	7	14.2	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1749038	1	5	20.0	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1749039	1	5	20.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1748989	1	5	20.0	5.0	✓
Ammonia by Fluorescence	E298	1750937	1	4	25.0	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1749027	1	5	20.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1750770	1	2	50.0	5.0	✓
Chloride in Water by IC	E235.Cl	1750769	1	2	50.0	5.0	✓
Conductivity in Water	E100	1748991	1	1	100.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1749422	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1749032	1	5	20.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1750446	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*
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	1750768	1	2	50.0	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1749645	1	5	20.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1750771	1	2	50.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1750772	1	2	50.0	5.0	✓
ORP by Electrode	E125	1751318	1	19	5.2	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1749028	1	5	20.0	5.0	✓
pH by Meter	E108	1748990	1	5	20.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1750527	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1750773	1	2	50.0	5.0	✓
TDS by Gravimetry	E162	1749022	1	5	20.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1749435	1	5	20.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1749030	1	1	100.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1750935	1	3	33.3	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1750934	1	3	33.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1750936	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	1749019	1	5	20.0	5.0	✓
Turbidity by Nephelometry	E121	1751090	1	7	14.2	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1749038	1	5	20.0	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1749039	1	5	20.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1748989	1	5	20.0	5.0	✓
Ammonia by Fluorescence	E298	1750937	1	4	25.0	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1749027	1	5	20.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1750770	1	2	50.0	5.0	✓
Chloride in Water by IC	E235.Cl	1750769	1	2	50.0	5.0	✓
Conductivity in Water	E100	1748991	1	1	100.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1749422	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1749032	1	5	20.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1750446	1	1	100.0	5.0	✓
Fluoride in Water by IC	E235.F	1750768	1	2	50.0	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1749645	1	5	20.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1750771	1	2	50.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1750772	1	2	50.0	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1749028	1	5	20.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1750527	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1750773	1	2	50.0	5.0	✓
TDS by Gravimetry	E162	1749022	1	5	20.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1749435	1	5	20.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1749030	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	1750935	1	3	33.3	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1750934	1	3	33.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1750936	1	3	33.3	5.0	✓
TSS by Gravimetry	E160	1749019	1	5	20.0	5.0	✓
Turbidity by Nephelometry	E121	1751090	1	7	14.2	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1749038	1	5	20.0	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1749039	1	5	20.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1750937	1	4	25.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1750770	1	2	50.0	5.0	✓
Chloride in Water by IC	E235.Cl	1750769	1	2	50.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1749422	1	5	20.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1749032	1	5	20.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1750446	0	1	0.0	5.0	✗
Fluoride in Water by IC	E235.F	1750768	1	2	50.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1750771	1	2	50.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1750772	1	2	50.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1750527	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1750773	1	2	50.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1749435	1	5	20.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1749030	0	1	0.0	5.0	✗
Total Nitrogen by Colourimetry	E366	1750935	1	3	33.3	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1750934	1	3	33.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1750936	1	3	33.3	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1749038	1	5	20.0	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1749039	1	5	20.0	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 ALS Environmental - Vancouver	Water	ASTM D1498 (mod)	Oxidation 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: 23 - 1083427

Page of

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Report To	Contact and company name below will appear on the final report
Company:	FKM
Contact:	Sara Derakhshi
Phone:	
	Company address below will appear on the final report
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: Sara.Derakhshi@Michelscanada.com

Email 2: Brad.Clarke@Michelscanada.com

Email 3:

Invoice Recipients

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

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: 04/Nov/24 10:2pm/am 5:00pm

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

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information		Oil and Gas Required Fields (client use)	
ALS Client Code / QUOTE #:	EGP150	AFE/Cost Center:	PO#
Job / Project #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:	BC Rail	Location:	
ALS Lab Work Order # (ALS use only):	C9756	ALS Contact:	Sampler:

Analysis Request

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

ALS Sample #	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Physical test	Total metals	dissolved metals	Phenols	Hydrocarbons	glycols	VOC	PAH, VOH, EPH	organics	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	WP	04/Nov/24	09:40	water		✓	✓	✓	✓	✓	✓	✓	✓	✓			

Environmental Division
Vancouver
Work Order Reference
VA24C9756

Telephone : +1 604 253 4188

604 951-3900

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 first

See Jerry.

Metals results ASAP

Temp: 11

PH: 7.3

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☒ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				12			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by: CW	Date: Nov 4	Time: 1145

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JAN 2023 FRONT

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

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

CERTIFICATE OF ANALYSIS

Work Order	:	**VA24C9955**			
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	:	EGP 150	Date Samples Received	:	05-Nov-2024 18:40
PO	:	----	Date Analysis Commenced	:	06-Nov-2024
C-O-C number	:	----	Issue Date	:	07-Nov-2024 13:44
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
Erika Vanegas	Lab Assistant	Metals, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Administration, Burnaby, British Columbia
Paul Cushing	Team Leader - Organics	Organics, Burnaby, British Columbia
Russell Zhang	Analyst	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia

General Comments

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

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

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

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

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

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

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

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	*Client Id*	*Comment*
VA24C9955-001	WTP	***Sample(s) VA24C9955 - 1: Water sample for VOC analysis contained > 5% headspace. Results may be biased low.***
VA24C9955-001	WTP	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.
VA24C9955-001	WTP	Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. 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).

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	WTP	----	----	----	----
				Client sampling date / time	05-Nov-2024 16:30	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9955-001	----	----	----	----
					Result	----	----	----	----
Field Tests									
pH, field	----	EF001/VA	0.10	pH units	7.50	----	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	12.0	----	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	2.0	mg/L	268	----	----	----	----
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	268	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	1230	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	187	----	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	173	----	----	----	----
Oxidation-reduction potential [ORP]	----	E125/VA	0.10	mV	190	----	----	----	----
pH	----	E108/VA	0.10	pH units	7.22	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	780	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	0.95	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.944	----	----	----	----
Ammonium (as NH4), field	14798-03-9	EC298A/VA	0.0010	mg/L	1.21	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.250 DLDS	----	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	125	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WTP	----	----	----	----
					Client sampling date / time	05-Nov-2024 16:30	----	----	----	----
						VA24C9955-001	----	----	----	----
						Result	----	----	----	----
Anions and Nutrients										
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		0.155	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		0.0329	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L		0.0312	----	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L		2.35	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.0580	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		165	----	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		8.93	----	----	----	----
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L		10.1	----	----	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		0.0379	----	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		0.00164	----	----	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00309	----	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.0569	----	----	----	----
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		0.211	----	----	----	----
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		66.7	----	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.00692	----	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		0.0303	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP	----	----	----	----
					Client sampling date / time	05-Nov-2024 16:30	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit		VA24C9955-001	----	----	----	----
						Result	----	----	----	----
Total Metals										
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		0.00024	----	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00209	----	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.065	----	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000081	----	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0210	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		1.60	----	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.00133	----	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L		0.0000125	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.306	----	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		0.00229	----	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		0.050	----	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		34.5	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.122	----	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		0.00280	----	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		15.8	----	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	----	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		164	----	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		1.53	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		67.2	----	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		0.00025	----	----	----	----
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/Accreditation	LOR	Unit	Client sample ID	WTP	----	----	----	----
					Client sampling date / time	05-Nov-2024 16:30	----	----	----	----
						VA24C9955-001	----	----	----	----
						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		<0.00090 DLM	----	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		0.00158	----	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.000015	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.00245	----	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		<0.0030	----	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	----	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0238	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		0.00169	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00312	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.0576	----	----	----	----
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		0.220	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		<0.0000650 DLM	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		72.3	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.00733	----	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		0.0270	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		0.00023	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID				
					WTP	----	----	----	----
					Client sampling date / time				
					05-Nov-2024 16:30	----	----	----	----
					VA24C9955-001	----	----	----	----
					Result	----	----	----	----
Dissolved Metals									
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L	0.00176	----	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L	0.032	----	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L	<0.000050	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	0.0237	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	1.54	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.00123	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.320	----	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L	0.00221	----	----	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L	<0.050	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	35.2	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.120	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	0.00298	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	14.3	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	168	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	1.59	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	56.3	----	----	----	----
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/Accreditation	LOR	Unit	Client sample ID	WTP	----	----	----	----
					Client sampling date / time	05-Nov-2024 16:30	----	----	----	----
						VA24C9955-001	----	----	----	----
						Result	----	----	----	----
Dissolved Metals										
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	----	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		<0.00060 DLM	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		0.00166	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.000015	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		0.00236	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0024	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Laboratory	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Laboratory	----	----	----	----
Aggregate Organics										
Phenols, total (4AAP)	----	E562/EO	0.0010	mg/L		<0.0010	----	----	----	----
Volatile Organic Compounds										
Chlorobenzene	108-90-7	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Chloromethane	74-87-3	E611C/VA	5.0	µg/L		<5.0	----	----	----	----
Dichlorobenzene, 1,2-	95-50-1	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichlorobenzene, 1,3-	541-73-1	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichlorobenzene, 1,4-	106-46-7	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloropropane, 1,2-	78-87-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloropropylene, cis+trans-1,3-	542-75-6	E611C/VA	0.75	µg/L		<0.75	----	----	----	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WTP	----	----	----	----
					Client sampling date / time	05-Nov-2024 16:30	----	----	----	----
						VA24C9955-001	----	----	----	----
						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		<0.50	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WTP	----	----	----	----
					Client sampling date / time	05-Nov-2024 16:30	----	----	----	----
						VA24C9955-001	----	----	----	----
						Result	----	----	----	----
Volatile Organic Compounds [Fuels]										
Styrene	100-42-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Toluene	108-88-3	E611C/VA	0.40	µg/L		<0.40	----	----	----	----
Xylene, m+p-	179601-23-1	E611C/VA	0.40	µg/L		<0.40	----	----	----	----
Xylene, o-	95-47-6	E611C/VA	0.30	µg/L		<0.30	----	----	----	----
Xylenes, total	1330-20-7	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Volatile Organic Compounds [THMs]										
Bromodichloromethane	75-27-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Bromoform	75-25-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Chloroform	67-66-3	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dibromochloromethane	124-48-1	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Hydrocarbons										
EPH (C10-C19)	----	E601A/VA	250	µg/L		<250	----	----	----	----
EPH (C19-C32)	----	E601A/VA	250	µg/L		<250	----	----	----	----
HEPHw	----	EC600A/VA	250	µg/L		<250	----	----	----	----
LEPHw	----	EC600A/VA	250	µg/L		<250	----	----	----	----
Hydrocarbons Surrogates										
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%		96.4	----	----	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%		94.2	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611C/VA	1.0	%		98.6	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

					Client sample ID	WTP	----	----	----	----
					Client sampling date / time	05-Nov-2024 16:30	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit		VA24C9955-001	----	----	----	----
						Result	----	----	----	----
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	83-32-9	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Acenaphthylene	208-96-8	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Acridine	260-94-6	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Anthracene	120-12-7	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Benz(a)anthracene	56-55-3	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Benzo(a)pyrene	50-32-8	E641A/VA	0.0050	µg/L		<0.0050	----	----	----	----
Benzo(b+j)fluoranthene	n/a	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Benzo(b+j+k)fluoranthene	n/a	E641A/VA	0.015	µg/L		<0.015	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Benzo(k)fluoranthene	207-08-9	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Chrysene	218-01-9	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	E641A/VA	0.0050	µg/L		<0.0050	----	----	----	----
Fluoranthene	206-44-0	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Fluorene	86-73-7	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Methylnaphthalene, 1-	90-12-0	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Methylnaphthalene, 2-	91-57-6	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Naphthalene	91-20-3	E641A/VA	0.050	µg/L		<0.050	----	----	----	----
Phenanthrene	85-01-8	E641A/VA	0.020	µg/L		<0.020	----	----	----	----
Pyrene	129-00-0	E641A/VA	0.010	µg/L		<0.010	----	----	----	----
Quinoline	91-22-5	E641A/VA	0.050	µg/L		0.353	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP	----	----	----	----
					Client sampling date / time	05-Nov-2024 16:30	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit		VA24C9955-001	----	----	----	----
						Result	----	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A/VA	0.1	%		107	----	----	----	----
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%		103	----	----	----	----
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%		107	----	----	----	----
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	%		128	----	----	----	----

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

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

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **VA24C9955**	Page	: 1 of 22
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	: EGP 150	Date Samples Received	: 05-Nov-2024 18:40
PO	: ----	Date Analysis Commenced	: 05-Nov-2024
C-O-C number	: ----	Issue Date	: 07-Nov-2024 13:43
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
Erika Vanegas	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Owen Cheng		Vancouver Metals, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
Paul Cushing	Team Leader - Organics	Vancouver Organics, Burnaby, British Columbia
Russell Zhang	Analyst	Vancouver Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1751954)											
VA24C9295-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1751955)											
VA24C9955-001	WTP	Solids, total dissolved [TDS]	----	E162	20	mg/L	780	780	0.0641%	20%	----
Physical Tests (QC Lot: 1751983)											
VA24C9955-001	WTP	pH	----	E108	0.10	pH units	7.22	7.44	3.00%	4%	----
Physical Tests (QC Lot: 1751985)											
VA24C9955-001	WTP	Conductivity	----	E100	2.0	µS/cm	1230	1240	1.05%	10%	----
Physical Tests (QC Lot: 1752353)											
KS2404597-001	Anonymous	Oxidation-reduction potential [ORP]	----	E125	0.10	mV	270	268	0.967%	10%	----
Physical Tests (QC Lot: 1752358)											
VA24C9907-003	Anonymous	Turbidity	----	E121	0.10	NTU	0.38	0.44	0.06	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1751956)											
VA24C9955-001	WTP	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.944	0.961	1.73%	20%	----
Anions and Nutrients (QC Lot: 1751986)											
VA24C9955-001	WTP	Bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1751987)											
VA24C9955-001	WTP	Fluoride	16984-48-8	E235.F	0.100	mg/L	0.155	0.156	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1751988)											
VA24C9955-001	WTP	Chloride	16887-00-6	E235.Cl	2.50	mg/L	125	125	0.240%	20%	----
Anions and Nutrients (QC Lot: 1751989)											
VA24C9955-001	WTP	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	0.0329	0.0319	0.0010	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1751990)											
VA24C9955-001	WTP	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0312	0.0340	0.0029	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1751991)											
VA24C9955-001	WTP	Sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	165	165	0.307%	20%	----
Anions and Nutrients (QC Lot: 1752025)											
VA24C9955-001	WTP	Nitrogen, total	7727-37-9	E366	0.150	mg/L	2.35	2.35	0.162%	20%	----
Anions and Nutrients (QC Lot: 1752026)											
VA24C9955-001	WTP	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0580	0.0571	1.53%	20%	----
Organic / Inorganic Carbon (QC Lot: 1752024)											

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: 1752024) - continued											
VA24C9955-001	WTP	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	10.1	10.8	6.62%	20%	----
Organic / Inorganic Carbon (QC Lot: 1752027)											
VA24C9955-001	WTP	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	8.93	9.31	4.20%	20%	----
Total Metals (QC Lot: 1752030)											
VA24C9955-001	WTP	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0379	0.0363	4.25%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00164	0.00167	1.50%	20%	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00309	0.00316	2.47%	20%	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0569	0.0572	0.548%	20%	----
		Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	0.211	0.218	3.23%	20%	----
		Cadmium, total	7440-43-9	E420	0.0000150	mg/L	<0.0000150	<0.0000150	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	66.7	67.0	0.554%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.00692	0.00695	0.400%	20%	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	0.0303	0.0302	0.310%	20%	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00024	0.00024	0.000009	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00209	0.00206	0.00003	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.065	0.062	0.003	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000081	0.000080	0.0000007	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0210	0.0211	0.536%	20%	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	1.60	1.60	0.129%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00133	0.00129	3.38%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.306	0.312	1.77%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00229	0.00226	0.00003	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	0.050	<0.050	0.0003	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	34.5	34.7	0.591%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.122	0.122	0.0202%	20%	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.00280	0.00248	12.2%	20%	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	15.8	14.6	7.86%	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	164	162	1.42%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	1.53	1.53	0.0372%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	67.2	61.5	8.80%	20%	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	0.00025	0.00030	0.00005	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: 1752030) - continued											
VA24C9955-001	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	0.00090	mg/L	<0.00090	<0.00090	0	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	0.00158	0.00161	1.79%	20%	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000015	0.000015	0.0000002	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00245	0.00247	0.00002	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1752054)											
VA24C9436-012	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1752028)											
VA24C9955-001	WTP	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0238	0.0254	6.29%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00169	0.00163	3.98%	20%	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00312	0.00323	3.25%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0576	0.0587	1.87%	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	0.220	0.219	0.315%	20%	----
		Cadmium, dissolved	7440-43-9	E421	0.0000650	mg/L	<0.0000650	<0.0000650	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	72.3	71.4	1.25%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.00733	0.00694	5.52%	20%	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	0.0270	0.0275	1.58%	20%	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00023	0.00022	0.000007	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00176	0.00178	0.00002	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.032	0.030	0.002	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	0.0237	0.0225	5.49%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	1.54	1.55	0.568%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00123	0.00124	0.668%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.320	0.310	3.18%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00221	0.00219	0.00002	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	35.2	35.4	0.383%	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: 1752028) - continued											
VA24C9955-001	WTP	Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.120	0.121	0.687%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.00298	0.00288	3.42%	20%	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	14.3	14.5	0.875%	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	168	167	0.573%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	1.59	1.48	7.03%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	56.3	56.6	0.555%	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	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	0.00166	0.00166	0.0481%	20%	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000015	0.000013	0.000002	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00236	0.00233	0.00002	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0024	0.0022	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: 1752029)											
VA24C9133-007	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	0.0000119	0.0000118	0.0000001	Diff <2x LOR	----
Aggregate Organics (QC Lot: 1755067)											
WT2433076-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	0.0047	0.0048	0.00008	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1751871)											
VA24C9955-001	WTP	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: 1751871) - continued											
VA24C9955-001	WTP	Dichloroethane, 1,1-	75-34-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E611C	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Styrene	100-42-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Tetrachloroethylene	127-18-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Toluene	108-88-3	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichlorofluoromethane	75-69-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611C	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
Glycols (QC Lot: 1752341)											
VA24C9683-001	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	<5.0	<5.0	0	Diff <2x LOR	----
		Propylene glycol, 1,2-	57-55-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Triethylene glycol	112-27-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----

Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1751954)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1751955)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1751984)						
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: 1751985)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1752358)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 1751956)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1751986)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1751987)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1751988)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1751989)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1751990)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1751991)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1752025)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1752026)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1752024)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Organic / Inorganic Carbon (QCLot: 1752024) - continued						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1752027)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 1752030)						
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: 1752030) - 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: 1752054)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1752028)						
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: 1752028) - 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: 1752029)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Aggregate Organics (QCLot: 1755067)						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
Volatile Organic Compounds (QCLot: 1751871)						
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: 1751871) - 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: 1752009)						
EPH (C10-C19)	----	E601A	250	µg/L	<250	----
EPH (C19-C32)	----	E601A	250	µg/L	<250	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1752010)						
Acenaphthene	83-32-9	E641A	0.01	µg/L	<0.010	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	<0.010	----
Acridine	260-94-6	E641A	0.01	µg/L	<0.010	----
Anthracene	120-12-7	E641A	0.01	µg/L	<0.010	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	<0.010	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	<0.0050	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	<0.010	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	<0.010	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	<0.010	----
Chrysene	218-01-9	E641A	0.01	µg/L	<0.010	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	<0.0050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1752010) - continued						
Fluoranthene	206-44-0	E641A	0.01	µg/L	<0.010	----
Fluorene	86-73-7	E641A	0.01	µg/L	<0.010	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	<0.010	----
Naphthalene	91-20-3	E641A	0.05	µg/L	<0.050	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	<0.020	----
Pyrene	129-00-0	E641A	0.01	µg/L	<0.010	----
Quinoline	91-22-5	E641A	0.05	µg/L	<0.050	----
Glycols (QCLot: 1752341)						
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: 1751954)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	87.2	85.0	115	----
Physical Tests (QCLot: 1751955)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	102	85.0	115	----
Physical Tests (QCLot: 1751983)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1751984)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	108	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1751985)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	104	90.0	110	----
Physical Tests (QCLot: 1752358)									
Turbidity	----	E121	0.1	NTU	200 NTU	101	85.0	115	----
Anions and Nutrients (QCLot: 1751956)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	108	85.0	115	----
Anions and Nutrients (QCLot: 1751986)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1751987)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	97.3	90.0	110	----
Anions and Nutrients (QCLot: 1751988)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1751989)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100.0	90.0	110	----
Anions and Nutrients (QCLot: 1751990)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.6	90.0	110	----
Anions and Nutrients (QCLot: 1751991)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1752025)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	95.5	75.0	125	----
Anions and Nutrients (QCLot: 1752026)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	93.2	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
Organic / Inorganic Carbon (QCLot: 1752024)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	107	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1752027)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	105	80.0	120	----
Total Metals (QCLot: 1752030)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	101	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	107	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	100	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	94.8	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	106	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	96.2	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	105	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	98.3	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	95.0	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	93.7	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	91.0	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	103	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	100	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	98.4	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	106	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	93.7	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	101	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	97.5	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	99.1	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	94.2	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	102	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	99.2	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	98.9	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	98.8	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	104	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: 1752030) - continued									
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	99.0	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	99.9	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	98.0	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	101	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	95.8	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	93.2	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	107	80.0	120	----
Total Metals (QCLot: 1752054)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	98.3	80.0	120	----
Dissolved Metals (QCLot: 1752028)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	97.6	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	99.5	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	97.8	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	106	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	105	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	105	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	94.9	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	102	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	95.7	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	95.2	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	95.9	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	100	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	104	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	97.4	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	98.1	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	96.5	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	109	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	93.7	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	93.8	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1752028) - 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	94.8	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	98.1	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	100	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	86.4	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	98.1	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	105	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	103	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	96.4	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	103	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	111	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	97.2	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	93.7	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	99.1	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	95.9	80.0	120	----
Aggregate Organics (QCLot: 1755067)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	93.0	85.0	115	----
Volatile Organic Compounds (QCLot: 1751871)									
Benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	89.4	70.0	130	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	100 µg/L	87.2	70.0	130	----
Bromoform	75-25-2	E611C	0.5	µg/L	100 µg/L	91.4	70.0	130	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	100 µg/L	81.9	70.0	130	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	100 µg/L	93.0	70.0	130	----
Chloroethane	75-00-3	E611C	0.5	µg/L	100 µg/L	100	60.0	140	----
Chloroform	67-66-3	E611C	0.5	µg/L	100 µg/L	87.3	70.0	130	----
Chloromethane	74-87-3	E611C	5	µg/L	100 µg/L	98.9	60.0	140	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	100 µg/L	89.4	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	91.6	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	100 µg/L	96.3	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	100 µg/L	100	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	100 µg/L	86.1	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	89.2	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	100 µg/L	84.1	70.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1751871) - continued									
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	100 µg/L	88.0	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	95.9	70.0	130	----
Dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	91.4	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	91.6	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	109	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	113	70.0	130	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	100 µg/L	91.5	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	100 µg/L	98.3	70.0	130	----
Styrene	100-42-5	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	100 µg/L	88.3	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	85.5	70.0	130	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	94.8	70.0	130	----
Toluene	108-88-3	E611C	0.4	µg/L	100 µg/L	87.2	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	100 µg/L	84.7	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	89.1	70.0	130	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	94.9	70.0	130	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	100 µg/L	81.1	60.0	140	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	100 µg/L	92.8	60.0	140	----
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	200 µg/L	98.1	70.0	130	----
Xylene, o-	95-47-6	E611C	0.3	µg/L	100 µg/L	92.3	70.0	130	----
Hydrocarbons (QCLot: 1752009)									
EPH (C10-C19)	----	E601A	250	µg/L	6490 µg/L	99.3	70.0	130	----
EPH (C19-C32)	----	E601A	250	µg/L	3360 µg/L	86.5	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1752010)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.5 µg/L	112	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.5 µg/L	121	60.0	130	----
Acridine	260-94-6	E641A	0.01	µg/L	0.5 µg/L	110	60.0	130	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.5 µg/L	123	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.5 µg/L	106	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.5 µg/L	94.7	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.5 µg/L	96.0	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.5 µg/L	110	60.0	130	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.5 µg/L	104	60.0	130	----
Chrysene	218-01-9	E641A	0.01	µg/L	0.5 µg/L	119	60.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1752010) - continued									
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.5 µg/L	112	60.0	130	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.5 µg/L	115	60.0	130	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.5 µg/L	116	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.5 µg/L	104	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.5 µg/L	113	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.5 µg/L	122	60.0	130	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.5 µg/L	117	50.0	130	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.5 µg/L	122	60.0	130	----
Pyrene	129-00-0	E641A	0.01	µg/L	0.5 µg/L	114	60.0	130	----
Quinoline	91-22-5	E641A	0.05	µg/L	0.5 µg/L	118	60.0	130	----
Glycols (QCLot: 1752341)									
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	99.5	70.0	130	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	25 mg/L	95.2	70.0	130	----
Triethylene glycol	112-27-6	E680E	5	mg/L	25 mg/L	102	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: 1751956)										
VA24C9976-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1751986)										
VA24C9976-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.477 mg/L	0.5 mg/L	95.4	75.0	125	----
Anions and Nutrients (QCLot: 1751987)										
VA24C9976-001	Anonymous	Fluoride	16984-48-8	E235.F	0.992 mg/L	1 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 1751988)										
VA24C9976-001	Anonymous	Chloride	16887-00-6	E235.Cl	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1751989)										
VA24C9976-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1751990)										
VA24C9976-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.491 mg/L	0.5 mg/L	98.2	75.0	125	----
Anions and Nutrients (QCLot: 1751991)										
VA24C9976-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	100 mg/L	100 mg/L	100	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1752024)										
VA24C9976-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	5.09 mg/L	5 mg/L	102	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1752027)										
VA24C9976-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	4.32 mg/L	5 mg/L	86.4	70.0	130	----
Total Metals (QCLot: 1752054)										
VA24C9107-002	Anonymous	Mercury, total	7439-97-6	E508	0.000455 mg/L	0 mg/L	91.0	70.0	130	----
Dissolved Metals (QCLot: 1752029)										
VA24C9955-001	WTP	Mercury, dissolved	7439-97-6	E509	0.0000942 mg/L	0 mg/L	94.2	70.0	130	----
Aggregate Organics (QCLot: 1755067)										
VA24C9955-001	WTP	Phenols, total (4AAP)	----	E562	0.0188 mg/L	0.02 mg/L	94.2	75.0	125	----
Volatile Organic Compounds (QCLot: 1751871)										
VA24C9955-001	WTP	Benzene	71-43-2	E611C	92.3 µg/L	100 µg/L	92.3	60.0	140	----
		Bromodichloromethane	75-27-4	E611C	90.5 µg/L	100 µg/L	90.5	60.0	140	----
		Bromoform	75-25-2	E611C	95.3 µg/L	100 µg/L	95.3	60.0	140	----
		Carbon tetrachloride	56-23-5	E611C	85.3 µg/L	100 µg/L	85.3	60.0	140	----
		Chlorobenzene	108-90-7	E611C	95.8 µg/L	100 µg/L	95.8	60.0	140	----
		Chloroethane	75-00-3	E611C	92.3 µg/L	100 µg/L	92.3	50.0	150	----
		Chloroform	67-66-3	E611C	90.2 µg/L	100 µg/L	90.2	60.0	140	----
		Chloromethane	74-87-3	E611C	91.2 µg/L	100 µg/L	91.2	50.0	150	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1751871) - continued										
VA24C9955-001	WTP	Dibromochloromethane	124-48-1	E611C	93.2 µg/L	100 µg/L	93.2	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	95.2 µg/L	100 µg/L	95.2	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	98.7 µg/L	100 µg/L	98.7	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611C	89.4 µg/L	100 µg/L	89.4	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611C	91.9 µg/L	100 µg/L	91.9	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611C	85.2 µg/L	100 µg/L	85.2	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	98.2 µg/L	100 µg/L	98.2	60.0	140	----
		Dichloromethane	75-09-2	E611C	93.6 µg/L	100 µg/L	93.6	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611C	93.8 µg/L	100 µg/L	93.8	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	111 µg/L	100 µg/L	111	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	115 µg/L	100 µg/L	115	60.0	140	----
		Ethylbenzene	100-41-4	E611C	93.7 µg/L	100 µg/L	93.7	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Styrene	100-42-5	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	92.3 µg/L	100 µg/L	92.3	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	89.7 µg/L	100 µg/L	89.7	60.0	140	----
		Tetrachloroethylene	127-18-4	E611C	98.4 µg/L	100 µg/L	98.4	60.0	140	----
		Toluene	108-88-3	E611C	89.4 µg/L	100 µg/L	89.4	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	87.3 µg/L	100 µg/L	87.3	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	91.5 µg/L	100 µg/L	91.5	60.0	140	----
		Trichloroethylene	79-01-6	E611C	97.4 µg/L	100 µg/L	97.4	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611C	83.1 µg/L	100 µg/L	83.1	50.0	150	----
		Vinyl chloride	75-01-4	E611C	87.5 µg/L	100 µg/L	87.5	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	95.5 µg/L	100 µg/L	95.5	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: 1752353)									
QC-1752353-001	RM	Oxidation-reduction potential [ORP]	----	E125	220 mV	101	95.0	105	----

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24C9955**	Page	: 1 of 14
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	: EGP 150	Date Samples Received	: 05-Nov-2024 18:40
PO	: ----	Issue Date	: 07-Nov-2024 13:44
C-O-C number	: ----		
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.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

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

Outliers : Frequency of Quality Control Samples

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

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	05-Nov-2024	07-Nov-2024	28 days	2 days	✓	07-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WTP	E298	05-Nov-2024	05-Nov-2024	28 days	0 days	✓	06-Nov-2024	28 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WTP	E235.Br-L	05-Nov-2024	06-Nov-2024	28 days	0 days	✓	06-Nov-2024	28 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WTP	E235.Cl	05-Nov-2024	06-Nov-2024	28 days	0 days	✓	06-Nov-2024	28 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WTP	E235.F	05-Nov-2024	06-Nov-2024	28 days	0 days	✓	06-Nov-2024	28 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WTP	E235.NO3-L	05-Nov-2024	06-Nov-2024	3 days	0 days	✓	06-Nov-2024	3 days	0 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WTP	E235.NO2-L	05-Nov-2024	06-Nov-2024	3 days	0 days	✓	06-Nov-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*
Anions and Nutrients : Sulfate in Water by IC										
HDPE WTP	E235.SO4	05-Nov-2024	06-Nov-2024	28 days	0 days	✓	06-Nov-2024	28 days	0 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WTP	E366	05-Nov-2024	06-Nov-2024	28 days	0 days	✓	06-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) WTP	E372-U	05-Nov-2024	06-Nov-2024	28 days	0 days	✓	06-Nov-2024	28 days	1 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
HDPE - dissolved (lab preserved) WTP	E509	05-Nov-2024	06-Nov-2024	0 hrs	8 hrs	× UCP	06-Nov-2024	0 hrs	8 hrs	× UCP
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) WTP	E421	05-Nov-2024	06-Nov-2024	180 days	0 days	✓	06-Nov-2024	180 days	1 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
HDPE - dissolved (lab preserved) WTP	EF001	05-Nov-2024	----	----	----		06-Nov-2024	----	1 days	
Glycols : Glycols (4 analytes) by GC-FID										
Glass vial (sodium bisulfate) WTP	E680E	05-Nov-2024	06-Nov-2024	14 days	1 days	✓	06-Nov-2024	40 days	0 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) WTP	E601A	05-Nov-2024	06-Nov-2024	14 days	1 days	✓	06-Nov-2024	40 days	0 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (lab preserved) WTP	E358-L	05-Nov-2024	06-Nov-2024	3 days	0 days	✓	06-Nov-2024	28 days	0 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) WTP	E355-L	05-Nov-2024	06-Nov-2024	28 days	0 days	✓	06-Nov-2024	28 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WTP	E290	05-Nov-2024	06-Nov-2024	14 days	0 days	✓	06-Nov-2024	14 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE WTP	E100	05-Nov-2024	06-Nov-2024	28 days	0 days	✓	06-Nov-2024	28 days	1 days	✓
Physical Tests : ORP by Electrode										
HDPE WTP	E125	05-Nov-2024	----	----	----		06-Nov-2024	0.25 hrs	14 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE WTP	E108	05-Nov-2024	06-Nov-2024	0.25 hrs	7 hrs	× EHTR-FM	06-Nov-2024	0.25 hrs	13 hrs	× EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE WTP	E162	05-Nov-2024	----	----	----		06-Nov-2024	7 days	0 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WTP	E160	05-Nov-2024	----	----	----		06-Nov-2024	7 days	0 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE WTP	E121	05-Nov-2024	----	----	----		06-Nov-2024	3 days	1 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) WTP	E641A	05-Nov-2024	06-Nov-2024	14 days	1 days	✓	06-Nov-2024	40 days	0 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
HDPE - total (lab preserved) WTP	E508	05-Nov-2024	06-Nov-2024	0 hrs	10 hrs	× UCP	06-Nov-2024	0 hrs	10 hrs	× UCP
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) WTP	E420	05-Nov-2024	06-Nov-2024	180 days	1 days	✓	06-Nov-2024	180 days	1 days	✓
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate) WTP	E611C	05-Nov-2024	05-Nov-2024	14 days	0 days	✓	06-Nov-2024	14 days	0 days	✓

Legend & Qualifier Definitions

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

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

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1751984	0	2	0.0	5.0	✗
Ammonia by Fluorescence	E298	1751956	1	2	50.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1751986	1	3	33.3	5.0	✓
Chloride in Water by IC	E235.Cl	1751988	1	2	50.0	5.0	✓
Conductivity in Water	E100	1751985	1	1	100.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1752029	1	7	14.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1752028	1	1	100.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1752027	1	2	50.0	5.0	✓
Fluoride in Water by IC	E235.F	1751987	1	3	33.3	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1752341	1	14	7.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1751989	1	2	50.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1751990	1	2	50.0	5.0	✓
ORP by Electrode	E125	1752353	1	18	5.5	5.0	✓
pH by Meter	E108	1751983	1	2	50.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1755067	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	1751991	1	2	50.0	5.0	✓
TDS by Gravimetry	E162	1751955	1	2	50.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1752054	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1752030	1	1	100.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1752025	1	1	100.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1752024	1	2	50.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1752026	1	1	100.0	5.0	✓
TSS by Gravimetry	E160	1751954	1	6	16.6	5.0	✓
Turbidity by Nephelometry	E121	1752358	1	6	16.6	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1751871	1	1	100.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1751984	1	2	50.0	5.0	✓
Ammonia by Fluorescence	E298	1751956	1	2	50.0	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1752009	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1751986	1	3	33.3	5.0	✓
Chloride in Water by IC	E235.Cl	1751988	1	2	50.0	5.0	✓
Conductivity in Water	E100	1751985	1	1	100.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1752029	1	7	14.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1752028	1	1	100.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1752027	1	2	50.0	5.0	✓
Fluoride in Water by IC	E235.F	1751987	1	3	33.3	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							
Glycols (4 analytes) by GC-FID	E680E	1752341	1	14	7.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1751989	1	2	50.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1751990	1	2	50.0	5.0	✓
ORP by Electrode	E125	1752353	1	18	5.5	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1752010	1	15	6.6	5.0	✓
pH by Meter	E108	1751983	1	2	50.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1755067	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	1751991	1	2	50.0	5.0	✓
TDS by Gravimetry	E162	1751955	1	2	50.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1752054	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1752030	1	1	100.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1752025	1	1	100.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1752024	1	2	50.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1752026	1	1	100.0	5.0	✓
TSS by Gravimetry	E160	1751954	1	6	16.6	5.0	✓
Turbidity by Nephelometry	E121	1752358	1	6	16.6	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1751871	1	1	100.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1751984	1	2	50.0	5.0	✓
Ammonia by Fluorescence	E298	1751956	1	2	50.0	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1752009	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1751986	1	3	33.3	5.0	✓
Chloride in Water by IC	E235.Cl	1751988	1	2	50.0	5.0	✓
Conductivity in Water	E100	1751985	1	1	100.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1752029	1	7	14.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1752028	1	1	100.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1752027	1	2	50.0	5.0	✓
Fluoride in Water by IC	E235.F	1751987	1	3	33.3	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1752341	1	14	7.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1751989	1	2	50.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1751990	1	2	50.0	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1752010	1	15	6.6	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1755067	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	1751991	1	2	50.0	5.0	✓
TDS by Gravimetry	E162	1751955	1	2	50.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1752054	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1752030	1	1	100.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1752025	1	1	100.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1752024	1	2	50.0	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 Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1752026	1	1	100.0	5.0	✓
TSS by Gravimetry	E160	1751954	1	6	16.6	5.0	✓
Turbidity by Nephelometry	E121	1752358	1	6	16.6	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1751871	1	1	100.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1751956	1	2	50.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1751986	1	3	33.3	5.0	✓
Chloride in Water by IC	E235.Cl	1751988	1	2	50.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1752029	1	7	14.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1752028	0	1	0.0	5.0	✗
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1752027	1	2	50.0	5.0	✓
Fluoride in Water by IC	E235.F	1751987	1	3	33.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1751989	1	2	50.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1751990	1	2	50.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1755067	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	1751991	1	2	50.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1752054	1	12	8.3	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1752030	0	1	0.0	5.0	✗
Total Nitrogen by Colourimetry	E366	1752025	0	1	0.0	5.0	✗
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1752024	1	2	50.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1752026	0	1	0.0	5.0	✗
VOCs (BC List) by Headspace GC-MS	E611C	1751871	1	1	100.0	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 ALS Environmental - Vancouver	Water	ASTM D1498 (mod)	Oxidation 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.
BC PHCs - EPH by GC-FID	E601A ALS Environmental - Vancouver	Water	BC MOE Lab Manual	Sample extracts are analyzed by GC-FID for BC hydrocarbon fractions.
VOCs (BC List) by Headspace GC-MS	E611C ALS Environmental - Vancouver	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Total Xylenes is the sum of m,p-Xylene & o-Xylene. Total BTEX is the sum of Benzene, Toluene, Ethylbenzene, & Total Xylenes. Total BTEX+Styrene is the sum of Total BTEX & Styrene. Total Trihalomethanes [THMs] is the sum of Bromodichloromethane, Bromoform, Chloroform, & Dibromochloromethane.
PAHs in Water by Hexane LVI GC-MS	E641A ALS Environmental - Vancouver	Water	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by large volume injection (LVI) GC-MS.
Glycols (4 analytes) by GC-FID	E680E ALS Environmental - Vancouver	Water	EPA 8015D (mod)	Derivatized glycols are analyzed by GC-FID.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as 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".
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 Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Nitrogen in water	EP366 ALS Environmental - Vancouver	Water	APHA 4500-P J (mod)	Samples for total nitrogen analysis are digested using a heated persulfate digestion. Nitrogen compounds are converted to nitrate in this digestion.
Digestion for Total Phosphorus in water	EP372	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

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

Chain of Custody (COC) / Analytical Request Form

COC Number: 23 - 1083428

Page of

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Report To	Contact and company name below will appear on the final report
Company:	FKM
Contact:	Sara Derakhshi
Phone:	3148912993
	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.co
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 for non-routine tests.
Date and Time Required for all E&P TATs: 06 Nov 2024 4pm/pm
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	
ALS Client Code / QUOTE #:	EGP150
Job / Project #:	
PO / AFE:	
LSD:	BCR
ALS Lab Work Order # (ALS use only):	VA24C9955

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	
ALS Contact:	Sampler:

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	Physical test	Total metals	dissolved metals	Phenols	Hydrocarbons	Glycols	VOC	PAH, vpH, EpH	organics	Anions nutrients					SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
						P	P	P	P	P	P	P										
	WIP	05, Nov, 24	16:30	water		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							

Environmental Division
Vancouver
Work Order Reference
VA24C9955

Telephone : +1 604 253 4188

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	pH: 7.5 Temp. 12
Are samples for human consumption/ use? ☐ YES ☐ NO	get Metals results ASAP 06-Nov-24

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method:	☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED
Cooler Custody Seals Intact:	☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A
INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
	14

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by: Sara Derakhshi	Date: 5,11,2024	Time:	Received by:	Date:	Time:	Received by: DJ	Date: NOV5	Time: 6:40pm

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form. one of the EpH bottles doesn't have lable n

White Paper Co. 604 951-3900

Appendix B: BCR Site Receiving Environment Documentation

BCR Site Receiving Environment Sample Analysis

TRITON	Sample ID				Fanshaw Shallal Pk.D., R.P.Eko.	SQU US1 (Upstream)	SQU DS1 (Downstream)	Sample or value notes	BCWQ FAL - Short Term	BCWQ FAL - Long Term	BCWQ MAL - Short Term	BCWQ MAL - Long Term
	LAB ID	Reviewed and signed off by:				VA24C9788-001	VA24C9788-002					
	Date Sampled					04-Nov-2024	04-Nov-2024					
	Time Sampled					10:19	10:53					
Analyte	Units	FAL-ST [1,2]	FAL-LT [1,2]	MAL-ST [1]	MAL-LT [1,2]	Water	Water					
						N/A	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	7.28	7.65		If natural pH < 6.5, no statistically 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 [3]	-	Max +/- from BKG 1°C [3]	-	7.9	7.1		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. Inserts with unknown fish distribution. Refer to footnote 4 for background temperature range for the Squamish River. Calculation: US value +/- 1 = guideline range	
Conductivity (field)	µS/cm	-	-	-	-	66	59					
Turbidity (field)	NTU	Varies with background, see note Guideline = 18.3	Varies with background, see note Guideline = 81.71 5-week discrete sampling average = 76.7 (DS)	Varies with background, see note Guideline = 18.3	Varies with background, see note Guideline = 72.6 5-week discrete sampling average = 76.7 (DS)	10.3	11.7		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	11.49	11.06		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 11 mg/L, all other life stages 8 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	-	-	-	-	19.3	19.8					
Total Dissolved Solids	mg/L	-	-	-	-	n/a	n/a					
Total Suspended Solids	mg/L	Varies with background, see note Guideline = 40.9	Varies with background, see note Guideline = 72.6 5-week discrete sampling average = 77.12 (DS)	Varies with background, see note Guideline = 40.9	Varies with background, see note Guideline = 72.6 5-week discrete sampling average = 77.12 (DS)	15.9	14.7		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	-	-	-	-	2.26	2.04			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	17.2	16.3			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	0.0016					
Total Sulfide (un-ionized as H_2S)	mg/L	-	0.002	-	-	< 0.0015	< 0.0015			Working guideline		
Total Sulfide (as H_2S)	mg/L	-	-	-	-	< 0.0015	0.0017					
Anions and Nutrients												
Ammonia	mg/L ammonia-N	Varies with pH and temperature. See note. Guideline = 16.3	Varies with pH and temperature. See note. Guideline = 1.86	Varies with pH, temperature and salinity. See note. Guideline = 83	Varies with pH, temperature and salinity. See note. Guideline = 12	0.298	0.198		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	2.2	1.82				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 = 0.873	-	1.5	-	0.023	0.021		Guideline has interim status. Guideline is calculated with the following equation: Guideline = [- 51.73 + 82.57 log10 [hardness] ^2.0]			
Nitrate (as N)	mg/L	32.8	3	-	3.7	0.0583	0.053					
Nitrite (as N)	mg/L	Varies with chloride. See note. Guideline = 0.06	Varies with chloride. See note. Guideline = 0.02	-	-	0.0075	0.0044		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	-	-	-	-	0.584	0.371					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.0546	0.0538			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	-	-	5.62	5.41			Guidelines for hardness ranges below: Hardness 0 - 30: 128 Hardness 31 - 79: 218 Hardness 76 - 180: 309 Hardness 181 - 250: 429		
Total Metals												
Aluminum (Al)-Total	mg/L	-	Varies with pH, DOC, hardness Guideline = 0.096 5-week field average = 2.94 (US), 2.95 (DS)	-	-	0.344	0.337			Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated with the following equation: Guideline = (EXP(0.045 * LN(DOC)) + (2.235 * LN(hardness)) < (1.695 * pH) + (-0.256 * (LN(hardness)^ pH)) + 0.889)/(31000) 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	0.00018					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.0104	0.0106			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	0.000013	0.000132					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	6.48	6.62					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000025	0.000026					
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	-	0.0015	-	< 0.00050	< 0.00050				Working guideline status		Working guideline status
Cobalt (Co)-Total	mg/L	0.11	0.004	-	-	0.00012	0.00012					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002 5-week field average = 0.00369 (US), 0.00610 (DS)	0.00157	0.00147					
Iron (Fe)-Total	mg/L	1	-	-	-	0.294	0.244					
Lead (Pb)-Total	mg/L	-	-	0.14	0.002 5-week field average = 0.00025 (US), 0.00046 (DS)	0.000188	0.000159					
Lithium (Li)-Total	mg/L	-	-	-	-	< 0.0010	< 0.0010					
Magnesium (Mg)-Total	mg/L	-	-	-	-	0.7580	0.7440					
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 0.715	Varies with hardness Guideline = 0.768	-	-	0.0106	0.0113		Guideline varies with hardness. The guideline is calculated using the following equations: Guideline = (0.0044 * hardness + 0.655) 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 = (0.01152 * hardness + 0.54) Guideline applies to samples with hardness 27-450 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	40	7.6	-	-	0.00036	0.00034					
Nickel (Ni)-Total	mg/L	-	-	-	0.0083	< 0.00050	< 0.00050					Working guideline status
Phosphorus (P)-Total	mg/L	-	0.005 to 0.015	-	-	0.062	< 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	-	-	-	-	0.884	0.838					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00102	0.00099					
Selenium (Se)-Total	mg/L	-	0.002	-	0.002	< 0.000050	< 0.000050			Guideline for freshwater aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guideline and exposure pathway.		Guideline for marine 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
Silicon (Si)-Total	mg/L	-	-	-	-	5.64	5.24					
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 = 0.000075 (US), 0.000016 (DS)	0.003	0.0015	< 0.000010	0.000014		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	-	-	-	-	2.64	2.38					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0618	0.0447					
Sulfur (S)-Total	mg/L	-	-	-	-	1.61	1.47					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020			30-day average; site-specific objective for the lower Columbia River, BC. Guideline is for reference only and does not apply to the EGP site.		
Thallium (Tl)-Total	mg/L	-	0.00003	-	-	< 0.000010	< 0.000010					
Thorium (Th)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Tin (Sn)-Total	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Titanium (Ti)-Total	mg/L	-	-	-	-	0.00592	0.00685					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Uranium (U)-Total	mg/L	0.0165	0.0075	-	-	0.00036	0.00044			Working guideline status		
Vanadium (V)-Total	mg/L	-	0.06	-	0.005 5-week field average = 0.00605 (US), 0.00623 (DS)	0.00159	0.00178					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	Guideline = 0.010 5-week field average = 0.00856 (US), 0.00948 (DS)	< 0.0030	0.0044					
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0459	0.0464					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00015	0.00017					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	n.nnnnn	n.nnnnn					
Beryllium (Be)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Bismuth (Bi)-Dissolved	mg/L	-	-	-	-	< 0.00005	< 0.00005					
Boron (B)-Dissolved	mg/L	-	-	-	-	< 0.005	< 0.005					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note Guideline = 0.000108	Varies with hardness, see note Guideline = 0.000067	-	-	0.0000883	0.0000888		Guideline is hardness dependent. Guideline is applicable to water hardness between 7.0 and 455 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(1.031 * (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 guideline 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	-	-	6.67	5.97			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	-	-	-	-	0.000015	0.000013					
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 = 0.0026	Guideline varies with other parameters, see note Guideline = 0.0004 5-week field average = 0.000998 (US), 0.000978 (DS)	-	-	0.00081	0.00081		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	-	-	-	0.087	0.057					
Lead (Pb)-Dissolved	mg/L	-	Guideline varies with DOC and hardness Guideline = 0.00216 5-week field average = 0.00005 (US), 0.00006 (DS)	-	-	< 0.000050	< 0.000050			Guideline with DOC and hardness. Refer to BC Water Quality Guidelines for more information. Guideline uses equation ([EXP((0.514*LN(DOC))+0.843*LN(hardness))+0.4354))/31000) where DOC range is 0.5-31.5 mg/L and hardness range is 4.7-511 mg/L		
Lithium (Li)-Dissolved	mg/L	-	-	-	-	< 0.0010	< 0.0010					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.711	0.695					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00527	0.00523					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.00037	0.00037					
Nickel (Ni)-Dissolved	mg/L	Guideline varies with other parameters, see note Guideline = 0.0178	Guideline varies with other parameters, see note Guideline = 0.0015 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	-	-	-	-	0.647	0.621					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00095	0.00090					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	5.49	5.04					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	2.47	2.36					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0378	0.0368					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	1.6	1.62					
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	-	-	-	-	0.00062	0.00078					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.000035	0.000031					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	0.00124	0.00114					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness Guideline = 0.012	Varies with pH, DOC, hardness Guideline = 0.0036 5-week field average = 0.0014 (US), 0.0013 (DS)	-	-	0.0018	0.0015		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))/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))/1000) Guideline only applies to water with pH between 6.5 and 8.13, DOC between 0.3 and 22.9 mg/L, annd hardness between 25.4 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 Quality Guidelines for the Protection of Asuatic Life. Wildlife & Agriculture. Accessed from:
www.swimmers_acceptable_wildlife_and.pdf (gov.bc.ca)
[2] BC MOECCS. 2021. BC Working Water Quality Guidelines for the Protection of Acuatic Life. Wildlife & 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 exceedences 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: 5.0-5.0
Reference: Triton Environmental Consultants 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)	SQU DS1 (Downstream)
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations	7.28	7.65
Temperature (field)	°C	Field temperatures taken using handheld meters during sampling used in calculations	7.9	7.1
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations	10.26	11.70
Hardness (as $CaCO_3$) (total)	mg/L	Laboratory tested total hardness taken at each respective sample site on the day of sampling used in guideline calculations	19.3	19.8
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations	2.26	2.04
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations	17.2	16.3
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations	2.2	1.82

BCR Site Receiving Environment Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order	: **VA24C9788**		
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 04-Nov-2024 12:40
PO	: ----	Date Analysis Commenced	: 06-Nov-2024
C-O-C number	: ----	Issue Date	: 12-Nov-2024 13:43
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*
	Laboratory Analyst	Metals, Edmonton, Alberta
	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
	Supervisor - Metals ICP Instrumentation	Inorganics, Burnaby, British Columbia
	Lab Assistant	Inorganics, Burnaby, British Columbia
	Senior Analyst	Metals, Waterloo, Ontario
	Senior Analyst	Inorganics, Waterloo, Ontario
	Account Manager Assistant	Administration, 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*
mg/L	milligrams per litre
°C	degrees celsius
µS/cm	microsiemens per centimetre
pH units	pH units
-	no units

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

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: Water (Matrix: Water)			Client sample ID		SQU US 1	SQU DS 1	BCR DUPLICATE	----	----
			Client sampling date / time		04-Nov-2024 10:19	04-Nov-2024 10:53	04-Nov-2024 10:19	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9788-001	VA24C9788-002	VA24C9788-003	----	----
					Result	Result	Result	----	----
Field Tests									
Conductivity, field	----	EF001/VA	0.10	µS/cm	66.000	59.000	----	----	----
pH, field	----	EF001/VA	0.10	pH units	7.28	7.65	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	7.90	7.10	----	----	----
Physical Tests									
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	19.6	17.7	18.0	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	19.3	19.6	19.1	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	33	32	37	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	15.9	14.7	20.5	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	17.2	16.3	17.2	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.298	0.198	0.306	----	----
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	2.20	1.82	2.10	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.023	0.021	0.023	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.0583	0.0530	0.0573	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	0.0075	0.0044	0.0075	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.584	0.371	0.610	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0546	0.0538	0.0569	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	5.62	5.41	5.59	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	2.26	2.04	2.16	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	BCR DUPLICATE	----	----
					Client sampling date / time	04-Nov-2024 10:19	04-Nov-2024 10:53	04-Nov-2024 10:19	----	----
						VA24C9788-001	VA24C9788-002	VA24C9788-003	----	----
						Result	Result	Result	----	----
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L		<0.0015	0.0016	<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	0.0017	<0.0016	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		0.344	0.337	0.364	----	----
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	0.00018	0.00018	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.0104	0.0106	0.0108	----	----
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		0.0000130	0.0000132	0.0000131	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		6.48	6.62	6.37	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000025	0.000026	0.000023	----	----
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		0.00012	0.00012	0.00013	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00157	0.00147	0.00163	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.294	0.244	0.301	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000188	0.000159	0.000195	----	----
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		0.758	0.744	0.786	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	BCR DUPLICATE	----	----
					Client sampling date / time	04-Nov-2024 10:19	04-Nov-2024 10:53	04-Nov-2024 10:19	----	----
						VA24C9788-001	VA24C9788-002	VA24C9788-003	----	----
						Result	Result	Result	----	----
Total Metals										
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.0106	0.0113	0.0110	----	----
Mercury, total	7439-97-6	E508/EO	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.000576	0.000594	0.000606	----	----
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		0.062	<0.050	0.051	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		0.684	0.638	0.712	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00102	0.00099	0.00105	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		5.64	5.24	5.60	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	0.000014	0.000045	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		2.64	2.38	2.68	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0418	0.0447	0.0425	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		1.57	1.47	1.42	----	----
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	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		0.00659	0.00685	0.00722	----	----
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	0.000044	0.000038	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.00189	0.00178	0.00188	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	BCR DUPLICATE	----	----
					Client sampling date / time	04-Nov-2024 10:19	04-Nov-2024 10:53	04-Nov-2024 10:19	----	----
						VA24C9788-001	VA24C9788-002	VA24C9788-003	----	----
						Result	Result	Result	----	----
Total Metals										
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		<0.0030	0.0044	0.0031	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	0.00029	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0489	0.0484	0.0503	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00015	0.00011	0.00012	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00768	0.00793	0.00778	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L		<0.000100	<0.000100	<0.000100	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		<0.010	<0.010	<0.010	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		0.0000083	0.0000088	0.0000090	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		6.67	5.97	6.06	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000015	0.000013	0.000015	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.00081	0.00081	0.00080	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.087	0.057	0.085	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		<0.0010	<0.0010	<0.0010	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		0.711	0.685	0.706	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00627	0.00523	0.00614	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	BCR DUPLICATE	----	----
					Client sampling date / time	04-Nov-2024 10:19	04-Nov-2024 10:53	04-Nov-2024 10:19	----	----
						VA24C9788-001	VA24C9788-002	VA24C9788-003	----	----
						Result	Result	Result	----	----
Dissolved Metals										
Mercury, dissolved	7439-97-6	E509/EO	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.000527	0.000537	0.000553	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	<0.050	<0.050	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		0.647	0.601	0.645	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00088	0.00086	0.00088	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		4.76	4.58	4.86	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		2.47	2.36	2.48	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0376	0.0368	0.0393	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		1.60	1.62	1.50	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		0.00062	0.00078	0.00061	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.000035	0.000031	0.000029	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		0.00124	0.00114	0.00125	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0018	0.0015	0.0018	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	BCR DUPLICATE	----	----
					Client sampling date / time	04-Nov-2024 10:19	04-Nov-2024 10:53	04-Nov-2024 10:19	----	----
						VA24C9788-001	VA24C9788-002	VA24C9788-003	----	----
						Result	Result	Result	----	----
Dissolved Metals										
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Dissolved mercury filtration location	----	EP509/EO	-	-		Field	Field	Field	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Field	Field	Field	----	----
Speciated Metals										
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/WT	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/WT	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.

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

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24C9788**	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	: 04-Nov-2024 12:40
PO	: ----	Issue Date	: 12-Nov-2024 13:43
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)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times 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) BCR DUPLICATE	E298	04-Nov-2024	07-Nov-2024	28 days	3 days	✓	09-Nov-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU DS 1	E298	04-Nov-2024	07-Nov-2024	28 days	3 days	✓	09-Nov-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU US 1	E298	04-Nov-2024	07-Nov-2024	28 days	3 days	✓	09-Nov-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BCR DUPLICATE	E235.Br-L	04-Nov-2024	06-Nov-2024	28 days	2 days	✓	06-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU DS 1	E235.Br-L	04-Nov-2024	06-Nov-2024	28 days	2 days	✓	06-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU US 1	E235.Br-L	04-Nov-2024	06-Nov-2024	28 days	2 days	✓	06-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BCR DUPLICATE	E235.Cl	04-Nov-2024	06-Nov-2024	28 days	2 days	✓	06-Nov-2024	28 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU DS 1	E235.Cl	04-Nov-2024	06-Nov-2024	28 days	2 days	✓	06-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU US 1	E235.Cl	04-Nov-2024	06-Nov-2024	28 days	2 days	✓	06-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BCR DUPLICATE	E235.F	04-Nov-2024	06-Nov-2024	28 days	2 days	✓	06-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE SQU DS 1	E235.F	04-Nov-2024	06-Nov-2024	28 days	2 days	✓	06-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE SQU US 1	E235.F	04-Nov-2024	06-Nov-2024	28 days	2 days	✓	06-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BCR DUPLICATE	E235.NO3-L	04-Nov-2024	06-Nov-2024	3 days	2 days	✓	06-Nov-2024	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SQU DS 1	E235.NO3-L	04-Nov-2024	06-Nov-2024	3 days	2 days	✓	06-Nov-2024	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SQU US 1	E235.NO3-L	04-Nov-2024	06-Nov-2024	3 days	2 days	✓	06-Nov-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BCR DUPLICATE	E235.NO2-L	04-Nov-2024	06-Nov-2024	3 days	2 days	✓	06-Nov-2024	3 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times 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 DS 1	E235.NO2-L	04-Nov-2024	06-Nov-2024	3 days	2 days	✓	06-Nov-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SQU US 1	E235.NO2-L	04-Nov-2024	06-Nov-2024	3 days	2 days	✓	06-Nov-2024	3 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BCR DUPLICATE	E235.SO4	04-Nov-2024	06-Nov-2024	28 days	2 days	✓	06-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU DS 1	E235.SO4	04-Nov-2024	06-Nov-2024	28 days	2 days	✓	06-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU US 1	E235.SO4	04-Nov-2024	06-Nov-2024	28 days	2 days	✓	06-Nov-2024	28 days	2 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) BCR DUPLICATE	E366	04-Nov-2024	07-Nov-2024	28 days	3 days	✓	07-Nov-2024	28 days	3 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU DS 1	E366	04-Nov-2024	07-Nov-2024	28 days	3 days	✓	07-Nov-2024	28 days	3 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU US 1	E366	04-Nov-2024	07-Nov-2024	28 days	3 days	✓	07-Nov-2024	28 days	3 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) BCR DUPLICATE	E372-U	04-Nov-2024	07-Nov-2024	28 days	3 days	✓	08-Nov-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 DS 1	E372-U	04-Nov-2024	07-Nov-2024	28 days	3 days	✓	08-Nov-2024	28 days	4 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SQU US 1	E372-U	04-Nov-2024	07-Nov-2024	28 days	3 days	✓	08-Nov-2024	28 days	4 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
BCR DUPLICATE	E509	04-Nov-2024	08-Nov-2024	28 days	4 days	✓	08-Nov-2024	28 days	4 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SQU DS 1	E509	04-Nov-2024	08-Nov-2024	28 days	4 days	✓	08-Nov-2024	28 days	4 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SQU US 1	E509	04-Nov-2024	08-Nov-2024	28 days	4 days	✓	08-Nov-2024	28 days	4 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
BCR DUPLICATE	E421	04-Nov-2024	07-Nov-2024	180 days	3 days	✓	08-Nov-2024	180 days	4 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SQU DS 1	E421	04-Nov-2024	07-Nov-2024	180 days	3 days	✓	08-Nov-2024	180 days	4 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SQU US 1	E421	04-Nov-2024	07-Nov-2024	180 days	3 days	✓	08-Nov-2024	180 days	4 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
HDPE total (nitric acid)										
SQU DS 1	EF001	04-Nov-2024	----	----	----		06-Nov-2024	----	2 days	

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
HDPE total (nitric acid) SQU US 1	EF001	04-Nov-2024	----	----	----		06-Nov-2024	----	2 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BCR DUPLICATE	E358-L	04-Nov-2024	07-Nov-2024	28 days	3 days	✓	07-Nov-2024	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) SQU DS 1	E358-L	04-Nov-2024	07-Nov-2024	28 days	3 days	✓	07-Nov-2024	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) SQU US 1	E358-L	04-Nov-2024	07-Nov-2024	28 days	3 days	✓	07-Nov-2024	28 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BCR DUPLICATE	E290	04-Nov-2024	06-Nov-2024	14 days	2 days	✓	06-Nov-2024	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SQU DS 1	E290	04-Nov-2024	06-Nov-2024	14 days	2 days	✓	06-Nov-2024	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SQU US 1	E290	04-Nov-2024	06-Nov-2024	14 days	2 days	✓	06-Nov-2024	14 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BCR DUPLICATE	E162	04-Nov-2024	----	----	----		09-Nov-2024	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SQU DS 1	E162	04-Nov-2024	----	----	----		09-Nov-2024	7 days	5 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE										
SQU US 1	E162	04-Nov-2024	----	----	----		09-Nov-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
BCR DUPLICATE	E160	04-Nov-2024	----	----	----		09-Nov-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
SQU DS 1	E160	04-Nov-2024	----	----	----		09-Nov-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
SQU US 1	E160	04-Nov-2024	----	----	----		09-Nov-2024	7 days	5 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
BCR DUPLICATE	E532	04-Nov-2024	----	----	----		07-Nov-2024	28 days	3 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
SQU DS 1	E532	04-Nov-2024	----	----	----		07-Nov-2024	28 days	3 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
SQU US 1	E532	04-Nov-2024	----	----	----		07-Nov-2024	28 days	3 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
BCR DUPLICATE	E508	04-Nov-2024	08-Nov-2024	28 days	4 days	✓	08-Nov-2024	28 days	4 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
SQU DS 1	E508	04-Nov-2024	08-Nov-2024	28 days	4 days	✓	08-Nov-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
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
SQU US 1	E508	04-Nov-2024	08-Nov-2024	28 days	4 days	✓	08-Nov-2024	28 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
BCR DUPLICATE	E420	04-Nov-2024	07-Nov-2024	180 days	3 days	✓	08-Nov-2024	180 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
SQU DS 1	E420	04-Nov-2024	07-Nov-2024	180 days	3 days	✓	08-Nov-2024	180 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
SQU US 1	E420	04-Nov-2024	07-Nov-2024	180 days	3 days	✓	08-Nov-2024	180 days	4 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
BCR DUPLICATE	E395	04-Nov-2024	----	----	----		06-Nov-2024	7 days	2 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU DS 1	E395	04-Nov-2024	----	----	----		06-Nov-2024	7 days	2 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU US 1	E395	04-Nov-2024	----	----	----		06-Nov-2024	7 days	2 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1752090	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1754483	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1752086	1	4	25.0	5.0	✓
Chloride in Water by IC	E235.Cl	1752082	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1753684	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1750354	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1754485	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	1752085	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1752084	1	8	12.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1752083	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1752087	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1758755	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1755343	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1753689	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1750318	1	19	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	1754481	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1754482	1	16	6.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1752751	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1758753	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1752090	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1754483	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1752086	1	4	25.0	5.0	✓
Chloride in Water by IC	E235.Cl	1752082	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1753684	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1750354	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1754485	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	1752085	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1752084	1	8	12.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1752083	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1752087	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1758755	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1755343	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1753689	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1750318	1	19	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	1754481	1	17	5.8	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	1754482	1	16	6.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1752751	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1758753	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1752090	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1754483	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1752086	1	4	25.0	5.0	✓
Chloride in Water by IC	E235.Cl	1752082	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1753684	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1750354	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1754485	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	1752085	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1752084	1	8	12.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1752083	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1752087	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1758755	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1755343	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1753689	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1750318	1	19	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	1754481	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1754482	1	16	6.2	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1752751	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1758753	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1754483	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1752086	1	4	25.0	5.0	✓
Chloride in Water by IC	E235.Cl	1752082	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1753684	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1750354	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1754485	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	1752085	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1752084	1	8	12.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1752083	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1752087	1	18	5.5	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1755343	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1753689	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1750318	1	19	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	1754481	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1754482	1	16	6.2	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	1752751	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 - Edmonton	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Edmonton	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Hexavalent Chromium (Cr VI) by IC	E532 ALS Environmental - Waterloo	Water	APHA 3500-Cr C (Ion Chromatography)	Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection. Results are based on an un-filtered, field-preserved sample.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as 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 - Waterloo	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
Field pH,EC,Salinity, TDS, 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 - Edmonton	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: **VA24C9788**	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	: 04-Nov-2024 12:40
PO	: ----	Date Analysis Commenced	: 06-Nov-2024
C-O-C number	: ----	Issue Date	: 12-Nov-2024 13:43
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*
	Laboratory Analyst	Edmonton Metals, Edmonton, Alberta
	Supervisor - Metals ICP Instrumentation	Vancouver Inorganics, Burnaby, British Columbia
	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
	Senior Analyst	Waterloo Inorganics, Waterloo, Ontario
	Senior Analyst	Waterloo Metals, Waterloo, Ontario
	Account Manager Assistant	Vancouver Administration, 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: 1752090)											
VA24C9879-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	119	119	0.170%	20%	----
Physical Tests (QC Lot: 1758753)											
FJ2403389-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1758755)											
FJ2403389-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	2120	2110	0.236%	20%	----
Anions and Nutrients (QC Lot: 1752082)											
VA24C9771-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1752083)											
VA24C9771-001	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: 1752084)											
VA24C9771-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1752085)											
VA24C9879-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.062	0.061	0.0007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1752086)											
VA24C9879-001	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: 1752087)											
VA24C9879-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	21.6	21.7	0.236%	20%	----
Anions and Nutrients (QC Lot: 1754481)											
VA24C9450-002	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	<0.030	<0.030	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1754482)											
VA24C9415-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0173	0.0169	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1754483)											
VA24C9415-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0267	0.0268	0.0001	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1754485)											
VA24C9450-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Sulfides (QC Lot: 1752751)											
VA24C9788-001	SQU US 1	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	0.0015	0.00003	Diff <2x LOR	----
Total Metals (QC Lot: 1750318)											
FJ2403360-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.562	0.589	4.61%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00089	0.00088	0.000003	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: 1750318) - continued											
FJ2403360-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00148	0.00146	0.828%	20%	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0436	0.0422	3.20%	20%	----
		Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	0.098	0.096	0.002	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000164	0.0000176	0.0000012	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	27.6	26.1	5.73%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000053	0.000058	0.000004	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	0.00162	0.00174	0.00012	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00028	0.00026	0.00001	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00217	0.00219	0.00002	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.637	0.694	8.46%	20%	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000110	0.000116	0.000006	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0271	0.0272	0.577%	20%	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	11.5	11.4	0.722%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00598	0.00584	2.35%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0139	0.0143	2.61%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00264	0.00266	0.00002	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	9.12	9.04	0.855%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.0109	0.0110	1.00%	20%	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000727	0.000740	1.75%	20%	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	3.43	3.42	0.343%	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	103	103	0.0425%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.242	0.251	3.63%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	36.0	35.4	1.75%	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	0.00042	0.00044	0.00002	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.00129	0.00148	0.00019	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	0.00092	0.00099	0.00007	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000959	0.000975	1.68%	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: 1750318) - continued											
FJ2403360-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00404	0.00402	0.00002	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.0070	0.0071	0.00010	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: 1753689)											
VA24C9703-005	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0309 µg/L	0.0000315	0.0000006	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1750354)											
VA24C9839-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	0.0040	0.0048	0.0008	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.0271	0.0258	4.73%	20%	----
		Arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.0205	0.0208	1.91%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0377	0.0385	2.15%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.000040	<0.000040	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.020	mg/L	0.130	0.125	0.005	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	0.0000283	0.0000273	0.0000010	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.100	mg/L	103	102	1.29%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000020	mg/L	0.00472	0.00444	6.06%	20%	----
		Chromium, dissolved	7440-47-3	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	0.00042	0.00041	0.000009	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00040	mg/L	0.00155	0.00145	0.00010	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000100	mg/L	0.000122	0.000110	0.000013	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.258	0.246	4.80%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	17.6	17.4	1.36%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.203	0.206	1.18%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.00506	0.00480	5.17%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.00225	0.00225	0.0000002	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.100	mg/L	3.98	3.91	1.80%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00040	mg/L	0.0102	0.0101	1.21%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000100	mg/L	0.000287	0.000239	0.000048	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.100	mg/L	2.73	2.73	0.0496%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.100	mg/L	137	137	0.322%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00040	mg/L	7.39	6.94	6.23%	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: 1750354) - continued											
VA24C9839-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	1.00	mg/L	159	160	0.641%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00040	mg/L	0.00055	0.00050	0.00005	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000045	0.000040	0.000005	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00020	mg/L	0.00048	0.00047	0.00002	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00229	0.00220	3.79%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0020	mg/L	0.0125	0.0121	0.0003	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1753684)											
KS2404577-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1755343)											
VA24C9043-013	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: 1752090)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1758753)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1758755)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1752082)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1752083)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1752084)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1752085)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1752086)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1752087)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1754481)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1754482)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1754483)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1754485)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1752751)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1750318)						
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: 1750318) - 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: 1753689)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1750354)						
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: 1750354) - 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: 1753684)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1755343)						
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: 1752090)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1758753)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	109	85.0	115	----
Physical Tests (QCLot: 1758755)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	98.2	85.0	115	----
Anions and Nutrients (QCLot: 1752082)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1752083)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.4	90.0	110	----
Anions and Nutrients (QCLot: 1752084)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1752085)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	97.9	90.0	110	----
Anions and Nutrients (QCLot: 1752086)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1752087)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 1754481)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	99.4	75.0	125	----
Anions and Nutrients (QCLot: 1754482)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	97.6	80.0	120	----
Anions and Nutrients (QCLot: 1754483)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.5	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1754485)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	101	80.0	120	----
Total Sulfides (QCLot: 1752751)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	97.8	80.0	120	----
Total Metals (QCLot: 1750318)									

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: 1750318) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	104	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	98.9	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	109	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	98.8	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	93.6	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	98.1	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	97.9	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	106	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	102	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	99.9	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	105	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	98.2	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	109	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	103	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	107	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	102	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	104	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	110	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	91.2	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	108	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	99.7	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	89.2	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	94.8	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	107	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	99.8	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	103	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	105	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: 1750318) - continued									
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	101	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Total Metals (QCLot: 1753689)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	109	80.0	120	----
Dissolved Metals (QCLot: 1750354)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	111	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	101	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	104	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	96.8	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	94.6	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	98.2	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	99.3	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	95.0	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	96.2	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	101	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	99.6	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	99.7	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	92.5	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	96.3	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	105	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	98.6	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	98.7	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	102	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.8	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	104	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	94.2	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	90.8	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	95.0	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	90.5	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1750354) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	95.6	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	94.4	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	96.7	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.8	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	100	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	102	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	99.8	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	97.9	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	109	80.0	120	----
Speciated Metals (QCLot: 1755343)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	102	80.0	120	----

Matrix Spike (MS) Report

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

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1752082)										
VA24C9788-002	SQU DS 1	Chloride	16887-00-6	E235.Cl	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1752083)										
VA24C9788-002	SQU DS 1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.505 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1752084)										
VA24C9788-002	SQU DS 1	Nitrate (as N)	14797-55-8	E235.NO3-L	2.55 mg/L	2.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1752085)										
VA24C9788-002	SQU DS 1	Fluoride	16984-48-8	E235.F	1.000 mg/L	1 mg/L	100.0	75.0	125	----
Anions and Nutrients (QCLot: 1752086)										
VA24C9788-002	SQU DS 1	Bromide	24959-67-9	E235.Br-L	0.495 mg/L	0.5 mg/L	99.1	75.0	125	----
Anions and Nutrients (QCLot: 1752087)										
VA24C9788-002	SQU DS 1	Sulfate (as SO4)	14808-79-8	E235.SO4	104 mg/L	100 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1754481)										
VA24C9450-003	Anonymous	Nitrogen, total	7727-37-9	E366	0.391 mg/L	0.4 mg/L	97.7	70.0	130	----
Anions and Nutrients (QCLot: 1754482)										
VA24C9450-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0494 mg/L	0.05 mg/L	98.9	70.0	130	----
Anions and Nutrients (QCLot: 1754483)										
VA24C9450-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0954 mg/L	0.1 mg/L	95.4	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1754485)										
VA24C9450-003	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	4.78 mg/L	5 mg/L	95.6	70.0	130	----
Total Sulfides (QCLot: 1752751)										
VA24C9788-002	SQU DS 1	Sulfide, total (as S)	18496-25-8	E395	0.223 mg/L	0.2 mg/L	112	75.0	125	----
Total Metals (QCLot: 1750318)										
FJ2403360-002	Anonymous	Aluminum, total	7429-90-5	E420	ND mg/L	----	ND	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0182 mg/L	0.02 mg/L	90.8	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.01000 mg/L	0.01 mg/L	100.0	70.0	130	----
		Boron, total	7440-42-8	E420	0.089 mg/L	0.1 mg/L	89.2	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00373 mg/L	0.004 mg/L	93.3	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00899 mg/L	0.01 mg/L	89.9	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0382 mg/L	0.04 mg/L	95.4	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
Total Metals (QCLot: 1750318) - continued										
FJ2403360-002	Anonymous	Cobalt, total	7440-48-4	E420	0.0189 mg/L	0.02 mg/L	94.5	70.0	130	----
		Copper, total	7440-50-8	E420	0.0184 mg/L	0.02 mg/L	92.0	70.0	130	----
		Iron, total	7439-89-6	E420	1.83 mg/L	2 mg/L	91.7	70.0	130	----
		Lead, total	7439-92-1	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0887 mg/L	0.1 mg/L	88.7	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0183 mg/L	0.02 mg/L	91.6	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0185 mg/L	0.02 mg/L	92.5	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0371 mg/L	0.04 mg/L	92.8	70.0	130	----
		Phosphorus, total	7723-14-0	E420	9.80 mg/L	10 mg/L	98.0	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	95.4	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0399 mg/L	0.04 mg/L	99.8	70.0	130	----
		Silicon, total	7440-21-3	E420	9.38 mg/L	10 mg/L	93.8	70.0	130	----
		Silver, total	7440-22-4	E420	0.00352 mg/L	0.004 mg/L	88.0	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	0.0382 mg/L	0.04 mg/L	95.5	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00389 mg/L	0.004 mg/L	97.4	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		Tin, total	7440-31-5	E420	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0389 mg/L	0.04 mg/L	97.2	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00411 mg/L	0.004 mg/L	103	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0972 mg/L	0.1 mg/L	97.2	70.0	130	----
		Zinc, total	7440-66-6	E420	0.379 mg/L	0.4 mg/L	94.7	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0388 mg/L	0.04 mg/L	97.1	70.0	130	----
Total Metals (QCLot: 1753689)										
VA24C9703-006	Anonymous	Mercury, total	7439-97-6	E508	0.000101 mg/L	0 mg/L	101	70.0	130	----
Dissolved Metals (QCLot: 1750354)										
VA24C9839-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.210 mg/L	0.2 mg/L	105	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0180 mg/L	0.02 mg/L	89.9	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0383 mg/L	0.04 mg/L	95.8	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00962 mg/L	0.01 mg/L	96.2	70.0	130	----
		Boron, dissolved	7440-42-8	E421	ND mg/L	----	ND	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00380 mg/L	0.004 mg/L	95.1	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00955 mg/L	0.01 mg/L	95.5	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0386 mg/L	0.04 mg/L	96.5	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1750354) - continued										
VA24C9839-002	Anonymous	Copper, dissolved	7440-50-8	E421	0.0184 mg/L	0.02 mg/L	92.1	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.93 mg/L	2 mg/L	96.6	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	ND mg/L	----	ND	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	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0367 mg/L	0.04 mg/L	91.7	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.84 mg/L	10 mg/L	98.4	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0395 mg/L	0.04 mg/L	98.8	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.49 mg/L	10 mg/L	94.9	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00356 mg/L	0.004 mg/L	89.1	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	0.0406 mg/L	0.04 mg/L	102	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00369 mg/L	0.004 mg/L	92.2	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0196 mg/L	0.02 mg/L	98.1	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0191 mg/L	0.02 mg/L	95.3	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0209 mg/L	0.02 mg/L	105	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00427 mg/L	0.004 mg/L	107	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0992 mg/L	0.1 mg/L	99.2	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.385 mg/L	0.4 mg/L	96.3	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0387 mg/L	0.04 mg/L	96.8	70.0	130	----
Dissolved Metals (QCLot: 1753684)										
KS2404577-003	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000980 mg/L	0 mg/L	98.0	70.0	130	----
Speciated Metals (QCLot: 1755343)										
VA24C9043-013	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0401 mg/L	0.04 mg/L	100	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	Report Format / Distribution
Contact and company name below will appear on the final report	

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

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

PRIORITY (Business Days):
- 4 day [P4-20%] ☐
- 3 day [P3-25%] ☐
- 2 day [P2-50%] ☐

EMERGENCY:
- 1 Business day [E1 - 100%] ☐
- Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: 12 NOV 24

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

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):

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							
	SQU US 1	04-Nov-24	10:19	Water	R	R	R	R	R	R	R	R	R	R	R						N	9
	pH: 7.28 cond: 66 µS/cm temp: 7.9 °C																					
	SQU DS 1	04-Nov-24	10:53	Water	R	R	R	R	R	R	R	R	R	R	R						N	9
	pH: 7.65 cond: 59 µS/cm temp: 7.1 °C																					
	BCR DUPLICATE	04-Nov-24	10:19	Water	R	R	R	R	R	R	R	R	R	R	R						N	9

Environmental Division
Vancouver
Work Order Reference
VA24C9788

Telephone : +1 604 253 4188

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

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

Are samples for human consumption/ use?
☐ ☑ NO

Special Instructions / Specify Criteria to add o (electroni

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			

RELEASE (client use)

Date: Nov 4 2024 Time: 12:36

INITIA Received by:

FINAL SHIPMENT RECEPTION (lab use only)

Time: Received by: Date: Nov 4 Time: 1240

ATIONS AND SA

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

SEPT 2017 FRONT

Failure to complete all portions of this form may delay analysis. Plea 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 COC form.

BCR Site Receiving Environment Field Notes and Logs

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-11-4-Chycoski-5FE14

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	11/04/2024	**Location:**	BC Rail Site
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.725425 -123.165099
Temperature(c):	Low 1 High 8	**Permit:**	AE 111824
Weather Conditions:	Heavy Rain	**Ground Conditions:**	Wet

Observations

Time: 10:53:44 **Flow Volume (visual):** moderate

Notes:

Odour Detected?:	No	**Notes:**	
Unusual Colour?	No	**Notes:**	
Unusual Observations?	No	**Notes:**	
Sheen on Water?	No	**Notes:**	

Samples Collected - Parameters

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

Logger Maintenance

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

Describe Logger Maintenance

Cleaned sonde.

Photos

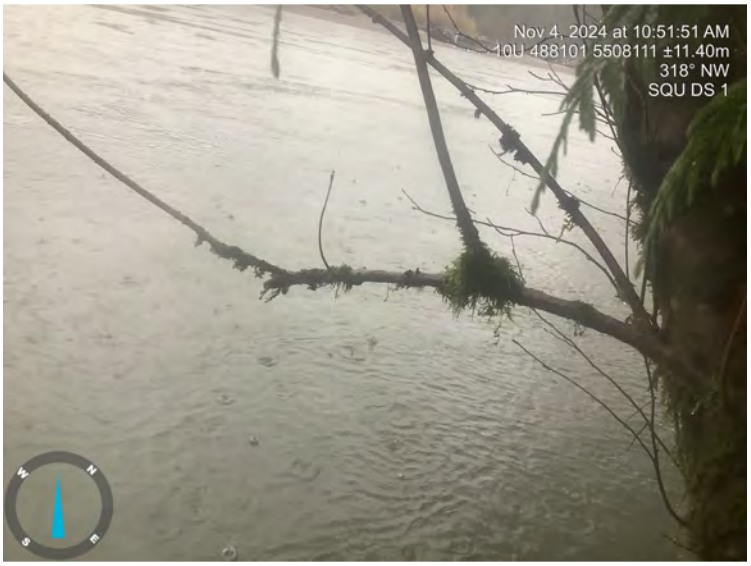


Photo: 1

Location: SQU DS 1

Description: US view

Photo: 2

Location: SQU DS 1

Description: Across view

Photos

Photo: 3

Location: SQU DS 1

Description: DS view

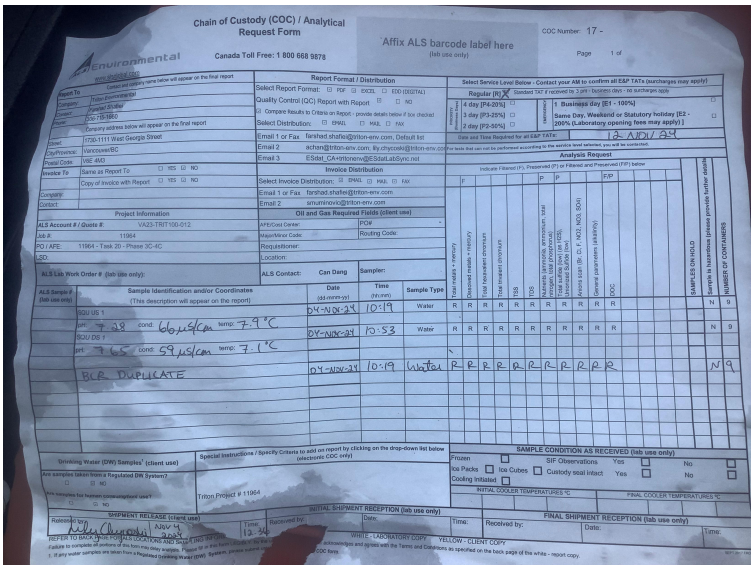


Photo: 4

Location: SQU DS 1

Description: Lab COC

Sign Off

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

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-11-4-Chycoski-EDCA9

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	11/04/2024	**Location:**	BC Rail Site
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.726866 -123.163912
Temperature(c):	Low 1 High 8	**Permit:**	AE 111824
Weather Conditions:	Heavy Rain	**Ground Conditions:**	Wet

Observations

Time: 10:19:00 **Flow Volume (visual):** moderate

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**	No		
DOC	Yes	**EPH, PAH, LEPH/HEPH**	No		
		Trout LC50	No		

Logger Maintenance

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

Describe Logger Maintenance

Photos

Photo: 1

Location: SQU US 1

Description: US view

Photo: 2

Location: SQU US 1

Description: Across view

Photos

Photo: 3

Location: SQU US 1

Description: DS view

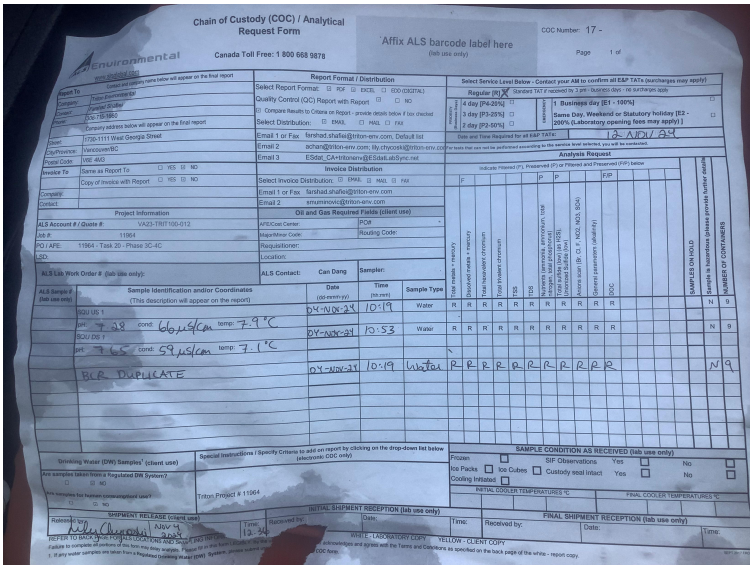


Photo: 4

Location: SQU US 1

Description: Lab COC

Sign Off

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

BCR Plant Site	SQU DS1							SQU US1 (Background)					
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)
11/04/2024 0:00	6.8	39.8	0.0	7.3	10.8	3.4	11/04/2024 0:00	7.8	61.0	0.0	6.9	11.3	15.6
11/04/2024 0:15	6.8	39.9	0.0	7.4	10.8	1.1	11/04/2024 0:15	7.8	60.9	0.0	6.9	11.3	15.3
11/04/2024 0:30	6.8	40.0	0.0	7.4	10.8	0.7	11/04/2024 0:30	7.8	61.6	0.0	6.9	11.3	16.1
11/04/2024 0:45	6.8	40.3	0.0	7.4	10.8	0.8	11/04/2024 0:45	7.8	61.6	0.0	6.9	11.3	16.0
11/04/2024 1:00	6.8	40.5	0.0	7.4	10.8	1.2	11/04/2024 1:00	7.8	61.4	0.0	6.9	11.3	16.4
11/04/2024 1:15	6.8	40.5	0.0	7.4	10.8	0.1	11/04/2024 1:15	7.8	61.4	0.0	6.9	11.3	15.7
11/04/2024 1:30	6.8	40.4	0.0	7.4	10.9	0.6	11/04/2024 1:30	7.8	61.4	0.0	6.9	11.3	15.2
11/04/2024 1:45	6.8	40.8	0.0	7.4	10.8	0.6	11/04/2024 1:45	7.8	61.1	0.0	6.9	11.3	15.1
11/04/2024 2:00	6.8	40.2	0.0	7.4	10.9	5.1	11/04/2024 2:00	7.8	60.8	0.0	6.9	11.3	16.3
11/04/2024 2:15	6.8	40.3	0.0	7.4	10.8	0.4	11/04/2024 2:15	7.8	60.9	0.0	6.9	11.3	16.6
11/04/2024 2:30	6.8	40.1	0.0	7.4	10.9	0.4	11/04/2024 2:30	7.8	61.0	0.0	6.9	11.3	15.9
11/04/2024 2:45	6.8	40.1	0.0	7.4	10.9	2.0	11/04/2024 2:45	7.8	60.7	0.0	6.9	11.3	14.5
11/04/2024 3:00	6.8	40.0	0.0	7.4	10.8	0.1	11/04/2024 3:00	7.8	60.5	0.0	6.9	11.3	16.7
11/04/2024 3:15	6.8	39.8	0.0	7.4	10.9	0.0	11/04/2024 3:15	7.8	60.4	0.0	6.9	11.3	17.0
11/04/2024 3:30	6.8	39.8	0.0	7.4	10.9	0.4	11/04/2024 3:30	7.8	60.7	0.0	6.9	11.3	17.8
11/04/2024 3:45	6.8	39.7	0.0	7.4	10.8	0.0	11/04/2024 3:45	7.8	60.2	0.0	6.9	11.3	16.7
11/04/2024 4:00	6.8	40.0	0.0	7.4	10.9	0.9	11/04/2024 4:00	7.8	59.9	0.0	6.9	11.3	16.3
11/04/2024 4:15	6.8	39.6	0.0	7.4	10.9	1.7	11/04/2024 4:15	7.8	60.2	0.0	6.9	11.3	16.4
11/04/2024 4:30	6.8	39.7	0.0	7.4	10.9	0.4	11/04/2024 4:30	7.8	59.8	0.0	6.9	11.3	18.1
11/04/2024 4:45	6.8	39.9	0.0	7.4	10.8	1.4	11/04/2024 4:45	7.8	60.2	0.0	6.9	11.3	17.4
11/04/2024 5:00	6.8	39.7	0.0	7.4	10.9	0.4	11/04/2024 5:00	7.8	60.1	0.0	6.9	11.3	18.3
11/04/2024 5:15	6.7	39.3	0.0	7.4	10.9	0.5	11/04/2024 5:15	7.8	59.7	0.0	6.9	11.3	16.9
11/04/2024 5:30	6.7	39.5	0.0	7.4	10.9	1.6	11/04/2024 5:30	7.8	60.0	0.0	6.9	11.3	17.6
11/04/2024 5:45	6.7	39.6	0.0	7.4	10.9	0.4	11/04/2024 5:45	7.8	60.2	0.0	6.9	11.3	17.6
11/04/2024 6:00	6.7	39.7	0.0	7.4	10.9	0.1	11/04/2024 6:00	7.7	60.3	0.0	6.9	11.3	18.5
11/04/2024 6:15	6.7	39.6	0.0	7.4	10.9	0.6	11/04/2024 6:15	7.7	60.0	0.0	6.9	11.3	18.3
11/04/2024 6:30	6.7	39.2	0.0	7.4	10.9	7.0	11/04/2024 6:30	7.7	60.0	0.0	6.9	11.3	18.1
11/04/2024 6:45	6.7	39.1	0.0	7.4	10.9	2.4	11/04/2024 6:45	7.7	59.8	0.0	6.9	11.3	20.3
11/04/2024 7:00	6.7	38.8	0.0	7.4	10.9	3.7	11/04/2024 7:00	7.7	59.6	0.0	6.9	11.3	19.8
11/04/2024 7:15	6.7	38.7	0.0	7.4	10.9	1.5	11/04/2024 7:15	7.7	58.8	0.0	6.9	11.4	21.2
11/04/2024 7:30	6.6	38.4	0.0	7.4	10.9	2.2	11/04/2024 7:30	7.7	58.1	0.0	7.0	11.4	18.3
11/04/2024 7:45	6.6	38.0	0.0	7.4	10.9	1.9	11/04/2024 7:45	7.7	58.4	0.0	7.0	11.4	22.2
11/04/2024 8:00	6.6	38.2	0.0	7.5	10.9	0.9	11/04/2024 8:00	7.6	59.0	0.0	7.0	11.4	19.6
11/04/2024 8:15	6.6	38.4	0.0	7.4	11.0	3.1	11/04/2024 8:15	7.6	59.0	0.0	7.0	11.4	21.5
11/04/2024 8:30	6.6	38.3	0.0	7.4	11.0	1.1	11/04/2024 8:30	7.6	58.5	0.0	7.0	11.4	19.8
11/04/2024 8:45	6.5	38.2	0.0	7.4	11.0	1.3	11/04/2024 8:45	7.5	58.3	0.0	7.0	11.4	19.0
11/04/2024 9:00	6.5	38.1	0.0	7.5	11.0	2.2	11/04/2024 9:00	7.5	57.7	0.0	7.0	11.5	19.4
11/04/2024 9:15	6.5	37.9	0.0	7.5	11.0	1.4	11/04/2024 9:15	7.5	57.7	0.0	7.0	11.5	20.8
11/04/2024 9:30	6.4	38.3	0.0	7.4	11.0	1.9	11/04/2024 9:30	7.4	58.9	0.0	7.0	11.5	25.5
11/04/2024 9:45	6.4	39.9	0.0	7.5	11.0	1.4	11/04/2024 9:45	7.5	65.6	0.0	7.0	11.4	24.5
11/04/2024 10:00	6.4	41.3	0.0	7.5	11.0	1.1	11/04/2024 10:00	7.5	66.5	0.0	6.9	11.3	23.6
11/04/2024 10:15	6.4	41.8	0.0	7.4	11.0	1.0	11/04/2024 10:15	7.5	64.5	0.0	6.9	11.3	22.5
11/04/2024 10:30	6.4	40.7	0.0	7.5	11.0	1.2	11/04/2024 10:30	7.4	63.1	0.0	6.9	11.4	25.9
11/04/2024 10:45	6.4	40.9	0.0	7.5	11.0	0.8	11/04/2024 10:45	7.5	65.2	0.0	6.9	11.4	26.9
11/04/2024 11:00	6.4	42.1	0.0	7.4	11.0	3.4	11/04/2024 11:00	7.5	66.0	0.0	6.9	11.4	28.9
11/04/2024 11:15	6.3	41.5	0.0	7.5	11.0	2.7	11/04/2024 11:15	7.4	63.6	0.0	7.0	11.4	27.8
11/04/2024 11:30	6.3	41.1	0.0	7.5	11.0	3.5	11/04/2024 11:30	7.4	62.2	0.0	7.0	11.5	26.5
11/04/2024 11:45	6.3	40.5	0.0	7.5	11.1	8.8	11/04/2024 11:45	7.4	61.8	0.0	7.0	11.5	27.6
11/04/2024 12:00	6.2	39.9	0.0	7.5	11.1	3.8	11/04/2024 12:00	7.3	62.9	0.0	7.0	11.5	31.3
11/04/2024 12:15	6.2	40.0	0.0	7.5	11.1	10.2	11/04/2024 12:15	7.3	60.4	0.0	7.0	11.5	31.7
11/04/2024 12:30	6.2	38.8	0.0	7.5	11.1	5.5	11/04/2024 12:30	7.3	59.1	0.0	7.0	11.5	35.0
11/04/2024 12:45	6.2	38.6	0.0	7.5	11.1	8.8	11/04/2024 12:45	7.3	59.3	0.0	7.0	11.6	34.5
11/04/2024 13:00	6.2	37.7	0.0	7.5	11.2	9.5	11/04/2024 13:00	7.2	58.6	0.0	7.0	11.6	29.2
11/04/2024 13:15	6.2	38.2	0.0	7.5	11.1	4.9	11/04/2024 13:15	7.3	58.5	0.0	7.0	11.6	33.1
11/04/2024 13:30	6.2	37.2	0.0	7.5	11.1	8.6	11/04/2024 13:30	7.3	56.7	0.0	7.0	11.6	29.1
11/04/2024 13:45	6.2	36.7	0.0	7.5	11.1	7.9	11/04/2024 13:45	7.3	56.4	0.0	7.0	11.6	29.0
11/04/2024 14:00	6.2	36.3	0.0	7.5	11.1	9.4	11/04/2024 14:00	7.3	56.3	0.0	7.0	11.6	27.7
11/04/2024 14:15	6.3	36.8	0.0	7.5	11.1	7.6	11/04/2024 14:15	7.4	55.8	0.0	7.0	11.6	28.6
11/04/2024 14:30	6.3	36.3	0.0	7.5	11.1	17.6	11/04/2024 14:30	7.4	55.5	0.0	7.0	11.5	26.6
11/04/2024 14:45	6.3	35.8	0.0	7.5	11.1	4.9	11/04/2024 14:45	7.4	54.9	0.0	7.0	11.6	28.6
11/04/2024 15:00	6.4	35.6	0.0	7.5	11.1	6.9	11/04/2024 15:00	7.5	54.6	0.0	7.0	11.6	26.1
11/04/2024 15:15	6.4	35.3	0.0	7.5	11.2	9.2	11/04/2024 15:15	7.5	54.5	0.0	7.0	11.6	27.3
11/04/2024 15:30	6.4	35.6	0.0	7.5	11.2	10.0	11/04/2024 15:30	7.5	54.7	0.0	7.0	11.6	25.1
11/04/2024 15:45	6.4	34.9	0.0	7.5	11.2	4.5	11/04/2024 15:45	7.5	53.3	0.0	7.0	11.6	26.5
11/04/2024 16:00	6.4	34.7	0.0	7.5	11.2	10.1	11/04/2024 16:00	7.5	53.4	0.0	7.0	11.6	24.7
11/04/2024 16:15	6.4	34.7	0.0	7.5	11.2	4.0	11/04/2024 16:15	7.5	53.2	0.0	7.0	11.6	25.9
11/04/2024 16:30	6.4	34.3	0.0	7.5	11.2	10.9	11/04/2024 16:30	7.4	52.8	0.0	7.0	11.6	27.4
11/04/2024 16:45	6.4	34.1	0.0	7.5	11.2	5.2	11/04/2024 16:45	7.4	52.6	0.0	7.0	11.6	27.0
11/04/2024 17:00	6.3	33.9	0.0	7.5	11.2	4.0	11/04/2024 17:00	7.4	52.1	0.0	7.0	11.6	24.9
11/04/2024 17:15	6.3	33.7	0.0	7.5	11.2	2.5	11/04/2024 17:15	7.4	52.3	0.0	7.0	11.6	26.2
11/04/2024 17:30	6.3	33.5	0.0	7.5	11.2	4.3	11/04/2024 17:30	7.3	51.5	0.0	7.0	11.6	26.9
11/04/2024 17:45	6.2	33.0	0.0	7.5	11.2	4.5	11/04/2024 17:45	7.3	50.8	0.0	7.0	11.7	27.8
11/04/2024 18:00	6.2	32.7	0.0	7.5	11.2	2.5	11/04/2024 18:00	7.3	50.5	0.0	7.0	11.7	26.5
11/04/2024 18:15	6.2	32.7	0.0	7.5	11.2	4.1	11/04/2024 18:15	7.2	51.3	0.0	7.0	11.6	28.5
11/04/2024 18:30	6.2	32.6	0.0	7.5	11.2	6.0	11/04/2024 18:30	7.2	50.9	0.0	7.0	11.6	28.0
11/04/2024 18:45	6.2	32.5	0.0	7.4	11.2	6.8	11/04/2024 18:45	7.2	50.6	0.0	7.0	11.7	25.8
11/04/2024 19:00	6.1	32.3	0.0	7.4	11.2	2.9	11/04/2024 19:00	7.2	50.6	0.0	7.0	11.6	27.6
11/04/2024 19:15	6.1	32.4	0.0	7.4	11.2	1.8	11/04/2024 19:15	7.2	50.6	0.0	7.0	11.7	26.9
11/04/2024 19:30	6.1	32.3	0.0	7.4	11.2	2.3	11/04/2024 19:30	7.2	50.5	0.0	7.0	11.7	24.3
11/04/2024 19:45	6.1	32.4	0.0	7.4	11.2	3.0	11/04/2024 19:45	7.2	50.9	0.0	6.9	11.6	26.4
11/04/2024 20:00	6.1	32.4	0.0	7.4	11.2	2.3	11/04/2024 20:00	7.2	50.6	0.0	6.9	11.7	24.5
11/04/2024 20:15	6.1	32.2	0.0	7.4	11.2	2.1	11/04/2024 20:15	7.2	50.2	0.0	6.9	11.7	26.0
11/04/2024 20:30	6.1	32.2	0.0	7.4	11.2	1.2	11/04/2024 20:30	7.2	50.4	0.0	6.9	11.6	25.4
11/04/2024 20:45	6.1	32.4	0.0	7.4	11.2	3.8	11/04/2024 20:45	7.2	50.8	0.0	6.9	11.6	25.2
11/04/2024 21:00	6.1	32.2	0.0	7.4	11.2	1.4	11/04/2024 21:00	7.1	50.7	0.0	6.9	11.6	26.8
11/04/2024 21:15	6.1	32.2	0.0	7.4	11.2	2.2	11/04/2024 21:15	7.1	50.8	0.0	6.9	11.6	27.0
11/04/2024 21:30	6.1	32.5	0.0	7.4	11.2	3.1	11/04/2024 21:30	7.1	50.7	0.0	6.9	11.6	23.8
11/04/2024 21:45	6.1	32.2	0.0	7.4	11.2	1.2	11/04/2024 21:45	7.1	50.8	0.0	6.9	11.6	25.2
11/04/2024 22:00	6.1	32.4	0.0	7.4	11.2	2.1	11/04/2024 22:00	7.1	51.0	0.0	6.9	11.6	22.5
11/04/2024 22:15	6.1	32.5	0.0	7.4	11.2	5.3	11/04/2024 22:15	7.1	50.8	0.0	6.9	11.6	26.2
11/04/2024 22:30	6.1	32.1	0.0	7.4	11.2	1.8	11/04/2024 22:30	7.1	50.3	0.0	6.9	11.6	23.1
11/04/2024 22:45	6.1	32.3	0.0	7.4	11.2	1.9	11/04/2024 22:45	7.1	50.6	0.0	6.9	11.6	24.5
11/04/2024 23:00	6.1	32.3	0.0	7.3	11.2	3.5	11/04/2024 23:00	7.1	50.5	0.0	6.9	11.6	24.3
11/04/2024 23:15	6.1	32.3	0.0	7.4	11.2	2.9	11/04/2024 23:15	7.1	50.7	0.0	6.9	11.6	24.4
11/04/2024 23:30	6.1	32.3	0.0	7.4	11.2	1.6	11/04/2024 23:30	7.1	50.6	0.0	6.9	11.6	30.1

11/04/2024 23:45	6.1	33.0	0.0	7.4	11.2	1.9	11/04/2024 23:45	7.1	51.2	0.0	6.9	11.6	23.8
11/05/2024 0:00	6.1	33.9	0.0	7.4	11.2	1.0	11/05/2024 0:00	7.1	50.7	0.0	6.9	11.7	24.1
11/05/2024 0:15	6.1	33.9	0.0	7.4	11.2	1.1	11/05/2024 0:15	7.1	50.8	0.0	6.9	11.6	22.4
11/05/2024 0:30	6.0	33.9	0.0	7.4	11.2	4.1	11/05/2024 0:30	7.1	50.8	0.0	6.9	11.7	23.8
11/05/2024 0:45	6.0	34.1	0.0	7.3	11.2	0.5	11/05/2024 0:45	7.1	51.1	0.0	6.9	11.6	23.0
11/05/2024 1:00	6.0	34.0	0.0	7.4	11.2	1.0	11/05/2024 1:00	7.0	50.6	0.0	6.9	11.6	21.9
11/05/2024 1:15	6.0	32.7	0.0	7.4	11.2	0.6	11/05/2024 1:15	7.0	50.5	0.0	6.9	11.7	24.3
11/05/2024 1:30	6.0	32.3	0.0	7.3	11.2	2.6	11/05/2024 1:30	7.0	50.3	0.0	6.9	11.7	22.0
11/05/2024 1:45	6.0	32.1	0.0	7.4	11.2	2.2	11/05/2024 1:45	7.0	50.0	0.0	6.9	11.7	23.6
11/05/2024 2:00	6.0	32.2	0.0	7.4	11.2	3.0	11/05/2024 2:00	7.0	50.4	0.0	6.9	11.7	22.0
11/05/2024 2:15	6.0	32.2	0.0	7.4	11.2	0.8	11/05/2024 2:15	7.0	50.5	0.0	6.9	11.7	22.0
11/05/2024 2:30	5.9	32.2	0.0	7.3	11.2	1.1	11/05/2024 2:30	7.0	50.5	0.0	6.9	11.7	21.6
11/05/2024 2:45	5.9	32.2	0.0	7.4	11.3	0.0	11/05/2024 2:45	7.0	50.2	0.0	6.9	11.7	22.8
11/05/2024 3:00	5.9	32.1	0.0	7.4	11.3	1.1	11/05/2024 3:00	6.9	50.2	0.0	6.9	11.7	21.8
11/05/2024 3:15	5.9	32.2	0.0	7.4	11.3	0.3	11/05/2024 3:15	6.9	50.3	0.0	6.9	11.7	22.8
11/05/2024 3:30	5.9	32.2	0.0	7.4	11.3	1.9	11/05/2024 3:30	6.9	50.4	0.0	6.9	11.7	22.8
11/05/2024 3:45	5.9	32.3	0.0	7.4	11.3	1.0	11/05/2024 3:45	6.9	50.0	0.0	6.9	11.7	22.2
11/05/2024 4:00	5.9	33.5	0.0	7.3	11.3	0.3	11/05/2024 4:00	6.9	50.2	0.0	6.9	11.7	21.0
11/05/2024 4:15	5.9	33.7	0.0	7.3	11.3	0.4	11/05/2024 4:15	6.9	50.5	0.0	6.9	11.7	21.3
11/05/2024 4:30	5.9	33.8	0.0	7.4	11.3	5.5	11/05/2024 4:30	6.9	50.2	0.0	6.9	11.7	22.7
11/05/2024 4:45	5.8	33.5	0.0	7.4	11.3	0.6	11/05/2024 4:45	6.8	50.0	0.0	6.9	11.7	21.2
11/05/2024 5:00	5.8	33.3	0.0	7.4	11.3	0.4	11/05/2024 5:00	6.8	49.8	0.0	6.9	11.7	21.5
11/05/2024 5:15	5.8	32.9	0.0	7.4	11.3	0.2	11/05/2024 5:15	6.8	50.2	0.0	6.9	11.7	21.5
11/05/2024 5:30	5.8	32.8	0.0	7.3	11.3	0.8	11/05/2024 5:30	6.8	50.2	0.0	6.9	11.8	21.1
11/05/2024 5:45	5.8	33.1	0.0	7.4	11.3	1.1	11/05/2024 5:45	6.8	51.6	0.0	6.9	11.7	20.2
11/05/2024 6:00	5.8	33.2	0.0	7.4	11.3	0.9	11/05/2024 6:00	6.8	50.9	0.0	6.9	11.7	21.2
11/05/2024 6:15	5.8	33.9	0.0	7.4	11.3	0.0	11/05/2024 6:15	6.8	52.8	0.0	6.9	11.7	21.4
11/05/2024 6:30	5.8	34.3	0.0	7.4	11.3	0.0	11/05/2024 6:30	6.8	51.3	0.0	6.9	11.7	21.6
11/05/2024 6:45	5.7	34.2	0.0	7.4	11.3	0.0	11/05/2024 6:45	6.7	51.1	0.0	6.9	11.8	21.2
11/05/2024 7:00	5.7	33.9	0.0	7.4	11.3	0.0	11/05/2024 7:00	6.7	51.8	0.0	6.9	11.7	21.3
11/05/2024 7:15	5.7	33.3	0.0	7.3	11.3	0.0	11/05/2024 7:15	6.7	51.3	0.0	6.9	11.8	21.7
11/05/2024 7:30	5.7	33.1	0.0	7.4	11.3	0.0	11/05/2024 7:30	6.7	51.1	0.0	6.9	11.8	20.8
11/05/2024 7:45	5.6	33.0	0.0	7.3	11.4	0.0	11/05/2024 7:45	6.6	50.9	0.0	6.9	11.8	22.7
11/05/2024 8:00	5.6	32.9	0.0	7.4	11.4	0.3	11/05/2024 8:00	6.6	51.1	0.0	6.9	11.8	25.8
11/05/2024 8:15	5.6	33.0	0.0	7.4	11.4	0.0	11/05/2024 8:15	6.6	51.4	0.0	6.9	11.8	23.5
11/05/2024 8:30	5.6	33.3	0.0	7.4	11.4	0.3	11/05/2024 8:30	6.6	51.5	0.0	6.9	11.8	22.9
11/05/2024 8:45	5.6	33.5	0.0	7.4	11.4	0.1	11/05/2024 8:45	6.6	52.4	0.0	6.9	11.8	24.1
11/05/2024 9:00	5.6	34.0	0.0	7.4	11.4	0.0	11/05/2024 9:00	6.6	53.3	0.0	6.9	11.8	24.1
11/05/2024 9:15	5.6	34.1	0.0	7.4	11.4	0.0	11/05/2024 9:15	6.6	52.6	0.0	6.9	11.8	23.7
11/05/2024 9:30	5.5	34.3	0.0	7.4	11.4	0.0	11/05/2024 9:30	6.6	53.7	0.0	6.9	11.8	23.3
11/05/2024 9:45	5.5	34.3	0.0	7.4	11.4	0.3	11/05/2024 9:45	6.5	53.8	0.0	6.9	11.9	24.2
11/05/2024 10:00	5.5	34.7	0.0	7.4	11.4	0.0	11/05/2024 10:00	6.5	54.0	0.0	6.9	11.9	24.0
11/05/2024 10:15	5.5	35.0	0.0	7.4	11.4	0.0	11/05/2024 10:15	6.5	54.8	0.0	6.9	11.9	24.0
11/05/2024 10:30	5.5	35.6	0.0	7.4	11.4	0.0	11/05/2024 10:30	6.6	56.1	0.0	6.9	11.9	25.6
11/05/2024 10:45	5.5	36.5	0.0	7.4	11.4	0.1	11/05/2024 10:45	6.6	58.7	0.0	6.9	11.8	22.9
11/05/2024 11:00	5.6	36.9	0.0	7.4	11.4	0.0	11/05/2024 11:00	6.6	57.6	0.0	6.9	11.8	23.7
11/05/2024 11:15	5.6	36.5	0.0	7.4	11.4	0.0	11/05/2024 11:15	6.7	57.3	0.0	6.9	11.8	23.3
11/05/2024 11:30	5.6	35.9	0.0	7.4	11.4	0.0	11/05/2024 11:30	6.7	56.4	0.0	6.9	11.9	24.1
11/05/2024 11:45	5.6	35.9	0.0	7.4	11.4	0.0	11/05/2024 11:45	6.8	56.9	0.0	6.9	11.8	22.6
11/05/2024 12:00	5.7	35.9	0.0	7.4	11.4	0.0	11/05/2024 12:00	6.8	57.3	0.0	6.9	11.8	25.8
11/05/2024 12:15	5.7	36.0	0.0	7.4	11.4	0.0	11/05/2024 12:15	6.9	57.1	0.0	6.9	11.8	24.4
11/05/2024 12:30	5.8	35.9	0.0	7.4	11.4	0.0	11/05/2024 12:30	6.9	56.7	0.0	6.9	11.8	23.0
11/05/2024 12:45	5.8	36.0	0.0	7.4	11.4	0.5	11/05/2024 12:45	7.0	56.8	0.0	6.9	11.8	23.5
11/05/2024 13:00	5.9	35.8	0.0	7.4	11.4	0.0	11/05/2024 13:00	7.0	56.6	0.0	6.9	11.8	20.2
11/05/2024 13:15	5.9	35.8	0.0	7.4	11.3	0.0	11/05/2024 13:15	7.0	56.3	0.0	6.9	11.8	22.4
11/05/2024 13:30	6.0	35.3	0.0	7.4	11.3	0.0	11/05/2024 13:30	7.1	55.6	0.0	6.9	11.7	24.0
11/05/2024 13:45	6.0	35.4	0.0	7.4	11.3	0.0	11/05/2024 13:45	7.1	56.2	0.0	6.9	11.7	25.1
11/05/2024 14:00	6.0	35.7	0.0	7.4	11.3	0.7	11/05/2024 14:00	7.2	56.4	0.0	6.9	11.7	25.0
11/05/2024 14:15	6.1	35.8	0.0	7.3	11.3	0.5	11/05/2024 14:15	7.2	56.1	0.0	6.9	11.7	22.7
11/05/2024 14:30	6.1	35.6	0.0	7.3	11.3	0.0	11/05/2024 14:30	7.2	56.1	0.0	6.8	11.7	23.2
11/05/2024 14:45	6.1	35.6	0.0	7.3	11.3	0.0	11/05/2024 14:45	7.2	55.9	0.0	6.8	11.7	23.7
11/05/2024 15:00	6.1	35.5	0.0	7.3	11.3	0.1	11/05/2024 15:00	7.2	55.9	0.0	6.8	11.7	23.6
11/05/2024 15:15	6.1	35.7	0.0	7.3	11.3	0.4	11/05/2024 15:15	7.2	56.0	0.0	6.9	11.7	23.7
11/05/2024 15:30	6.1	35.6	0.0	7.3	11.3	0.0	11/05/2024 15:30	7.2	55.9	0.0	6.8	11.7	22.3
11/05/2024 15:45	6.1	35.5	0.0	7.3	11.3	0.1	11/05/2024 15:45	7.2	55.8	0.0	6.9	11.7	22.9
11/05/2024 16:00	6.0	35.4	0.0	7.3	11.3	0.0	11/05/2024 16:00	7.2	55.8	0.0	6.9	11.7	20.8
11/05/2024 16:15	6.0	35.6	0.0	7.4	11.3	0.0	11/05/2024 16:15	7.1	56.2	0.0	6.9	11.7	22.4
11/05/2024 16:30	6.0	35.9	0.0	7.3	11.3	0.5	11/05/2024 16:30	7.1	56.5	0.0	6.9	11.7	22.3
11/05/2024 16:45	6.0	36.1	0.0	7.4	11.3	0.0	11/05/2024 16:45	7.0	56.6	0.0	6.9	11.7	21.7
11/05/2024 17:00	5.9	36.2	0.0	7.4	11.3	0.0	11/05/2024 17:00	7.0	56.3	0.0	6.9	11.7	20.4
11/05/2024 17:15	5.9	36.1	0.0	7.4	11.3	0.0	11/05/2024 17:15	7.0	56.5	0.0	6.9	11.7	22.1
11/05/2024 17:30	5.8	36.1	0.0	7.4	11.3	0.0	11/05/2024 17:30	6.9	56.8	0.0	6.9	11.7	22.4
11/05/2024 17:45	5.8	36.5	0.0	7.4	11.3	0.4	11/05/2024 17:45	6.9	56.9	0.0	6.9	11.7	23.8
11/05/2024 18:00	5.8	36.6	0.0	7.4	11.3	0.0	11/05/2024 18:00	6.9	57.5	0.0	6.9	11.7	25.3
11/05/2024 18:15	5.8	36.9	0.0	7.4	11.3	0.0	11/05/2024 18:15	6.9	57.3	0.0	6.9	11.7	23.7
11/05/2024 18:30	5.8	36.4	0.0	7.4	11.3	0.0	11/05/2024 18:30	6.8	56.9	0.0	6.9	11.7	24.1
11/05/2024 18:45	5.8	36.7	0.0	7.4	11.3	0.0	11/05/2024 18:45	6.8	57.7	0.0	6.9	11.7	24.8
11/05/2024 19:00	5.8	36.9	0.0	7.4	11.3	0.0	11/05/2024 19:00	6.8	58.0	0.0	6.9	11.7	24.8
11/05/2024 19:15	5.7	37.0	0.0	7.3	11.3	0.2	11/05/2024 19:15	6.8	58.0	0.0	6.9	11.7	24.0
11/05/2024 19:30	5.7	37.1	0.0	7.4	11.3	0.0	11/05/2024 19:30	6.8	58.2	0.0	6.9	11.7	24.2
11/05/2024 19:45	5.7	37.1	0.0	7.4	11.3	0.6	11/05/2024 19:45	6.8	57.9	0.0	6.9	11.7	25.0
11/05/2024 20:00	5.7	37.4	0.0	7.4	11.3	0.0	11/05/2024 20:00	6.8	58.6	0.0	6.9	11.7	23.4
11/05/2024 20:15	5.7	37.7	0.0	7.4	11.3	4.7	11/05/2024 20:15	6.8	59.6	0.0	6.9	11.6	25.4
11/05/2024 20:30	5.7	38.1	0.0	7.3	11.3	0.7	11/05/2024 20:30	6.8	59.6	0.0	6.9	11.6	23.6
11/05/2024 20:45	5.7	37.8	0.0	7.4	11.3	0.0	11/05/2024 20:45	6.8	59.1	0.0	6.9	11.7	23.2
11/05/2024 21:00	5.8	37.9	0.0	7.3	11.3	0.0	11/05/2024 21:00	6.8	59.6	0.0	6.9	11.7	21.8
11/05/2024 21:15	5.8	38.3	0.0	7.3	11.2	0.0	11/05/2024 21:15	6.9	60.7	0.0	6.8	11.6	21.6
11/05/2024 21:30	5.8	38.3	0.0	7.3	11.2	0.0	11/05/2024 21:30	6.9	59.7	0.0	6.8	11.6	20.1
11/05/2024 21:45	5.8	37.9	0.0	7.3	11.2	0.5	11/05/2024 21:45	6.9	59.6	0.0	6.8	11.6	19.0
11/05/2024 22:00	5.8	38.0	0.0	7.3	11.2	0.0	11/05/2024 22:00	6.9	59.4	0.0	6.8	11.6	20.5
11/05/2024 22:15	5.8	37.7	0.0	7.3	11.2	0.1	11/05/2024 22:15	6.8	59.3	0.0	6.8	11.7	18.7
11/05/2024 22:30	5.8	37.9	0.0	7.3	11.2	0.1	11/05/2024 22:30	6.9	59.3	0.0	6.8	11.7	19.1
11/05/2024 22:45	5.8	37.9	0.0	7.3	11.2	0.2	11/05/2024 22:45	6.9	59.1	0.0	6.8	11.6	20.5
11/05/2024 23:00	5.8	38.0	0.0	7.3	11.2	0.0	11/05/2024 23:00	6.9	59.2	0.0	6.8	11.6	18.3
11/05/2024 23:15	5.8	37.7	0.0	7.3	11.3	2.4	11/05/2024 23:15	6.9	59.3	0.0	6.8	11.7	18.9
11/05/2024 23:30	5.8	37.8	0.0	7.3	11.2	0.0	11/05/2024 23:30	6.9	58.8	0.0	6.8	11.7	19.1
11/05/2024 23:45	5.8	37.9	0.0	7.4	11.3	0.0	11/05/2024 23:45	6.9	59.8	0.0	6.8	11.6	19.8
11/06/2024 0:00	5.8	37.9	0.0	7.3	11.2	4.3	11/06/2024 0:00	6.9	59.4	0.0	6.8	11.6	16.8
11/06/2024 0:15	5.8	38.0	0.0	7.3	11.2	0.2	11/06/2024 0:15	6.9	59.4	0.0	6.8	11.7	17.6

11/06/2024 0:30	5.8	37.9	0.0	7.3	11.2	0.5
11/06/2024 0:45	5.8	37.9	0.0	7.3	11.2	0.0
11/06/2024 1:00	5.8	38.0	0.0	7.3	11.2	0.0
11/06/2024 1:15	5.7	37.9	0.0	7.3	11.2	0.0
11/06/2024 1:30	5.7	37.8	0.0	7.3	11.2	0.0
11/06/2024 1:45	5.7	37.9	0.0	7.3	11.2	0.0
11/06/2024 2:00	5.7	37.8	0.0	7.3	11.2	0.0
11/06/2024 2:15	5.7	37.8	0.0	7.4	11.2	0.0
11/06/2024 2:30	5.7	38.0	0.0	7.3	11.2	0.0
11/06/2024 2:45	5.7	37.9	0.0	7.3	11.3	0.0
11/06/2024 3:00	5.7	37.7	0.0	7.3	11.3	0.7
11/06/2024 3:15	5.7	37.8	0.0	7.3	11.2	0.0
11/06/2024 3:30	5.7	37.8	0.0	7.3	11.2	0.0
11/06/2024 3:45	5.7	37.7	0.0	7.3	11.3	0.0
11/06/2024 4:00	5.7	37.6	0.0	7.3	11.2	0.0
11/06/2024 4:15	5.7	37.5	0.0	7.3	11.3	0.2
11/06/2024 4:30	5.7	37.9	0.0	7.3	11.3	0.0
11/06/2024 4:45	5.7	37.8	0.0	7.3	11.3	0.3
11/06/2024 5:00	5.7	38.5	0.0	7.3	11.3	0.0
11/06/2024 5:15	5.7	38.0	0.0	7.3	11.3	0.1
11/06/2024 5:30	5.6	38.9	0.0	7.3	11.3	1.3
11/06/2024 5:45	5.6	38.0	0.0	7.3	11.3	0.1
11/06/2024 6:00	5.6	37.8	0.0	7.3	11.3	0.0
11/06/2024 6:15	5.6	38.4	0.0	7.3	11.3	0.0
11/06/2024 6:30	5.6	38.2	0.0	7.3	11.3	0.0
11/06/2024 6:45	5.6	38.4	0.0	7.3	11.3	0.0
11/06/2024 7:00	5.6	38.8	0.0	7.3	11.3	0.0
11/06/2024 7:15	5.6	38.4	0.0	7.3	11.3	0.3
11/06/2024 7:30	5.6	38.5	0.0	7.3	11.3	0.0
11/06/2024 7:45	5.6	38.7	0.0	7.3	11.3	0.0
11/06/2024 8:00	5.6	38.8	0.0	7.3	11.3	0.0
11/06/2024 8:15	5.6	38.9	0.0	7.3	11.3	0.0
11/06/2024 8:30	5.6	38.9	0.0	7.3	11.3	0.0
11/06/2024 8:45	5.6	39.4	0.0	7.3	11.3	0.0
11/06/2024 9:00	5.6	39.8	0.0	7.4	11.3	0.0
11/06/2024 9:15	5.6	40.0	0.0	7.4	11.3	0.0
11/06/2024 9:30	5.6	40.2	0.0	7.4	11.3	0.0
11/06/2024 9:45	5.6	39.8	0.0	7.4	11.3	0.0
11/06/2024 10:00	5.6	39.8	0.0	7.4	11.3	0.0
11/06/2024 10:15	5.6	39.2	0.0	7.4	11.3	0.0
11/06/2024 10:30	5.6	39.8	0.0	7.4	11.3	0.0
11/06/2024 10:45	5.6	40.4	0.0	7.4	11.3	0.0
11/06/2024 11:00	5.7	41.1	0.0	7.4	11.3	0.0
11/06/2024 11:15	5.7	41.4	0.0	7.4	11.3	0.0
11/06/2024 11:30	5.7	41.9	0.0	7.4	11.3	0.0
11/06/2024 11:45	5.8	42.3	0.0	7.4	11.3	0.0
11/06/2024 12:00	5.8	42.8	0.0	7.4	11.3	0.0
11/06/2024 12:01	5.9	43.3	0.0	7.4	11.3	0.0
11/06/2024 12:15	5.9	43.0	0.0	7.3	11.2	0.0
11/06/2024 12:30	5.9	42.9	0.0	7.4	11.2	0.0
11/06/2024 12:45	6.0	42.8	0.0	7.4	11.2	0.0
11/06/2024 13:00	6.0	42.8	0.0	7.4	11.2	0.0
11/06/2024 13:15	6.0	43.6	0.0	7.3	11.2	0.0
11/06/2024 13:30	6.0	42.9	0.0	7.3	11.2	0.0
11/06/2024 13:45	6.0	43.0	0.0	7.4	11.2	0.0
11/06/2024 14:00	6.0	42.8	0.0	7.4	11.2	0.0
11/06/2024 14:15	6.1	42.2	0.0	7.4	11.2	0.0
11/06/2024 14:30	6.1	42.0	0.0	7.3	11.2	0.0
11/06/2024 14:45	6.1	41.6	0.0	7.3	11.2	0.0
11/06/2024 15:00	6.1	41.2	0.0	7.3	11.2	0.0
11/06/2024 15:15	6.1	41.0	0.0	7.3	11.2	0.0
11/06/2024 15:30	6.1	41.1	0.0	7.3	11.2	0.0
11/06/2024 15:45	6.1	40.9	0.0	7.3	11.2	0.0
11/06/2024 16:00	6.1	41.1	0.0	7.3	11.2	0.0
11/06/2024 16:15	6.1	40.5	0.0	7.3	11.2	0.0
11/06/2024 16:30	6.1	40.2	0.0	7.3	11.2	0.0
11/06/2024 16:45	6.1	40.4	0.0	7.3	11.1	0.0
11/06/2024 17:00	6.0	40.1	0.0	7.3	11.1	0.0
11/06/2024 17:15	6.0	40.2	0.0	7.3	11.1	0.0
11/06/2024 17:30	6.0	40.2	0.0	7.3	11.2	0.0
11/06/2024 17:45	6.0	40.0	0.0	7.3	11.2	0.0
11/06/2024 18:00	6.0	40.3	0.0	7.3	11.1	0.0
11/06/2024 18:15	6.0	39.8	0.0	7.3	11.1	0.0
11/06/2024 18:30	6.0	39.7	0.0	7.3	11.2	0.0
11/06/2024 18:45	6.0	39.7	0.0	7.3	11.2	0.0
11/06/2024 19:00	6.1	39.8	0.0	7.3	11.2	0.0
11/06/2024 19:15	6.1	39.8	0.0	7.3	11.2	0.0
11/06/2024 19:30	6.1	39.7	0.0	7.4	11.1	0.0
11/06/2024 19:45	6.1	40.0	0.0	7.3	11.1	0.0
11/06/2024 20:00	6.1	40.0	0.0	7.3	11.1	0.0
11/06/2024 20:15	6.2	40.5	0.0	7.3	11.1	0.0
11/06/2024 20:30	6.2	40.5	0.0	7.3	11.1	0.0
11/06/2024 20:45	6.2	40.6	0.0	7.4	11.1	0.0
11/06/2024 21:00	6.2	41.0	0.0	7.4	11.1	0.0
11/06/2024 21:15	6.2	41.2	0.0	7.4	11.1	0.0
11/06/2024 21:30	6.3	41.5	0.0	7.4	11.0	0.0
11/06/2024 21:45	6.3	41.4	0.0	7.3	11.0	0.0
11/06/2024 22:00	6.3	41.4	0.0	7.3	11.0	0.0
11/06/2024 22:15	6.3	41.4	0.0	7.3	11.0	0.0
11/06/2024 22:30	6.3	41.6	0.0	7.3	11.0	0.0
11/06/2024 22:45	6.3	41.7	0.0	7.3	11.0	0.0
11/06/2024 23:00	6.3	41.8	0.0	7.3	11.0	0.0
11/06/2024 23:15	6.3	41.9	0.0	7.3	11.0	0.0
11/06/2024 23:30	6.3	41.8	0.0	7.3	11.0	0.0
11/06/2024 23:45	6.3	41.8	0.0	7.3	11.0	0.0
11/07/2024 0:00	6.4	41.7	0.0	7.3	11.0	3.4
11/07/2024 0:15	6.4	41.9	0.0	7.3	11.0	0.0
11/07/2024 0:30	6.4	41.6	0.0	7.3	11.0	0.0
11/07/2024 0:45	6.4	41.6	0.0	7.3	11.0	0.0

11/06/2024 0:30	6.9	59.2	0.0	6.8	11.7	18.9
11/06/2024 0:45	6.8	59.1	0.0	6.8	11.6	19.0
11/06/2024 1:00	6.8	59.2	0.0	6.8	11.7	19.0
11/06/2024 1:15	6.8	59.3	0.0	6.8	11.6	19.1
11/06/2024 1:30	6.8	59.1	0.0	6.8	11.7	21.6
11/06/2024 1:45	6.8	58.7	0.0	6.8	11.7	18.5
11/06/2024 2:00	6.8	58.6	0.0	6.8	11.7	18.7
11/06/2024 2:15	6.8	58.6	0.0	6.8	11.7	18.2
11/06/2024 2:30	6.8	58.8	0.0	6.8	11.6	18.3
11/06/2024 2:45	6.8	58.6	0.0	6.8	11.7	18.8
11/06/2024 3:00	6.8	58.3	0.0	6.8	11.7	18.2
11/06/2024 3:15	6.8	58.4	0.0	6.8	11.7	18.6
11/06/2024 3:30	6.8	58.1	0.0	6.8	11.7	19.9
11/06/2024 3:45	6.8	58.3	0.0	6.8	11.7	19.1
11/06/2024 4:00	6.8	57.8	0.0	6.8	11.7	17.1
11/06/2024 4:15	6.8	57.9	0.0	6.8	11.7	20.4
11/06/2024 4:30	6.8	58.5	0.0	6.8	11.7	19.1
11/06/2024 4:45	6.8	58.2	0.0	6.8	11.7	19.7
11/06/2024 5:00	6.8	58.2	0.0	6.8	11.7	18.7
11/06/2024 5:15	6.7	57.5	0.0	6.8	11.7	20.1
11/06/2024 5:30	6.7	58.5	0.0	6.8	11.7	20.1
11/06/2024 5:45	6.7	58.1	0.0	6.8	11.7	20.6
11/06/2024 6:00	6.7	58.2	0.0	6.9	11.7	21.8
11/06/2024 6:15	6.7	58.8	0.0	6.9	11.7	24.0
11/06/2024 6:30	6.7	58.4	0.0	6.9	11.7	20.8
11/06/2024 6:45	6.7	59.1	0.0	6.8	11.7	20.9
11/06/2024 7:00	6.7	58.7	0.0	6.8	11.7	21.9
11/06/2024 7:15	6.7	58.6	0.0	6.8	11.7	19.4
11/06/2024 7:30	6.7	59.0	0.0	6.8	11.7	19.6
11/06/2024 7:45	6.7	59.3	0.0	6.8	11.7	20.1
11/06/2024 8:00	6.7	59.0	0.0	6.8	11.7	20.0
11/06/2024 8:15	6.7	59.5	0.0	6.8	11.7	19.6
11/06/2024 8:30	6.7	59.3	0.0	6.9	11.7	24.5
11/06/2024 8:45	6.7	61.0	0.0	6.9	11.7	21.8
11/06/2024 9:00	6.7	61.3	0.0	6.9	11.6	21.8
11/06/2024 9:15	6.7	61.8	0.0	6.9	11.6	25.6
11/06/2024 9:30	6.7	61.3	0.0	6.9	11.6	23.6
11/06/2024 9:45	6.7	59.5	0.0	6.9	11.7	23.3
11/06/2024 10:00	6.7	59.8	0.0	6.9	11.7	24.8
11/06/2024 10:15	6.7	61.1	0.0	6.9	11.7	24.5
11/06/2024 10:30	6.7	62.0	0.0	6.9	11.7	25.5
11/06/2024 10:45	6.8	62.8	0.0	6.9	11.7	26.5
11/06/2024 11:00	6.8	63.9	0.0	6.9	11.7	25.5
11/06/2024 11:15	6.9	64.4	0.0	6.9	11.7	25.3
11/06/2024 11:30	6.9	66.1	0.0	6.9	11.7	25.1
11/06/2024 11:45	6.9	66.2	0.0	6.9	11.7	24.5
11/06/2024 12:00	7.0	67.8	0.0	6.9	11.6	24.8
11/06/2024 12:15	7.0	67.0	0.0	6.9	11.6	24.6
11/06/2024 12:30	7.1	67.3	0.0	6.9	11.6	23.9
11/06/2024 12:45	7.1	66.0	0.0	6.9	11.6	25.8
11/06/2024 13:00	7.1	67.9	0.0	6.9	11.6	25.4
11/06/2024 13:01	7.2	67.2	0.0	6.9	11.6	23.1
11/06/2024 13:15	7.2	66.4	0.0	6.9	11.6	22.8
11/06/2024 13:30	7.2	66.8	0.0	6.9	11.6	25.4
11/06/2024 13:45	7.2	65.7	0.0	6.9	11.6	25.7
11/06/2024 14:00	7.2	65.0	0.0	6.8	11.6	23.4
11/06/2024 14:15	7.2	64.3	0.0	6.8	11.6	24.9
11/06/2024 14:30	7.2	63.3	0.0	6.8	11.6	23.1
11/06/2024 14:45	7.2	63.3	0.0	6.8	11.6	23.8
11/06/2024 15:00	7.2	63.3	0.0	6.8	11.6	24.5
11/06/2024 15:15	7.2	62.8	0.0	6.8	11.6	23.4
11/06/2024 15:30	7.2	62.6	0.0	6.8	11.6	22.8
11/06/2024 15:45	7.2	63.0	0.0	6.8	11.6	27.3
11/06/2024 16:00	7.2	62.2	0.0	6.8	11.6	25.1
11/06/2024 16:15	7.2	62.2	0.0	6.8	11.6	21.3
11/06/2024 16:30	7.2	61.9	0.0	6.8	11.6	23.8
11/06/2024 16:45	7.2	62.1	0.0	6.8	11.6	23.9
11/06/2024 17:00	7.2	62.3	0.0	6.8	11.6	24.3
11/06/2024 17:15	7.2	61.9	0.0	6.8	11.6	21.4
11/06/2024 17:30	7.2	62.5	0.0	6.8	11.6	22.3
11/06/2024 17:45	7.2	61.8	0.0	6.8	11.6	25.7
11/06/2024 18:00	7.2	61.5	0.0	6.8	11.6	26.3
11/06/2024 18:15	7.2	61.2	0.0	6.8	11.6	22.5
11/06/2024 18:30	7.2	61.5	0.0	6.8	11.6	27.6
11/06/2024 18:45	7.2	61.5	0.0	6.9	11.6	23.1
11/06/2024 19:00	7.2	61.5	0.0	6.9	11.5	21.9
11/06/2024 19:15	7.2	61.9	0.0	6.9	11.5	23.9
11/06/2024 19:30	7.2	61.9	0.0	6.9	11.5	23.9
11/06/2024 19:45	7.2	62.5	0.0	6.9	11.5	22.7
11/06/2024 20:00	7.3	62.6	0.0	6.9	11.5	23.4
11/06/2024 20:15	7.3	62.8	0.0	6.9	11.5	23.5
11/06/2024 20:30	7.3	63.0	0.0	6.9	11.5	24.4
11/06/2024 20:45	7.3	63.3	0.0	6.9	11.5	25.6
11/06/2024 21:00	7.3	63.5	0.0	6.9	11.5	24.4
11/06/2024 21:15	7.4	64.3	0.0	6.9	11.5	23.1
11/06/2024 21:30	7.4	63.7	0.0	6.9	11.5	25.6
11/06/2024 21:45	7.4	63.9	0.0	6.9	11.5	22.6
11/06/2024 22:00	7.4	63.5	0.0	6.9	11.5	22.5
11/06/2024 22:15	7.4	64.0	0.0	6.9	11.5	27.0
11/06/2024 22:30	7.4	64.0	0.0	6.9	11.5	28.5
11/06/2024 22:45	7.4	63.6	0.0	6.9	11.5	22.0
11/06/2024 23:00	7.4	63.7	0.0	6.9	11.5	25.2
11/06/2024 23:15	7.4	63.3	0.0	6.9	11.5	23.3
11/06/2024 23:30	7.4	63.3	0.0	6.9	11.5	22.0
11/06/2024 23:45	7.4	63.2	0.0	6.9	11.5	26.9
11/07/2024 0:00	7.4	63.6	0.0	6.8	11.5	24.5
11/07/2024 0:15	7.4	63.7	0.0	6.8	11.5	19.0
11/07/2024 0:30	7.4	63.8	0.0	6.8	11.4	21.1
11/07/2024 0:45	7.4	63.0	0.0	6.9	11.5	21.9

11/07/2024 1:00	6.4	41.9	0.0	7.3	11.0	0.0	11/07/2024 1:00	7.4	63.2	0.0	6.9	11.5	26.1
11/07/2024 1:15	6.4	41.7	0.0	7.3	11.0	0.0	11/07/2024 1:15	7.4	63.2	0.0	6.8	11.5	21.9
11/07/2024 1:30	6.4	41.9	0.0	7.3	11.0	0.0	11/07/2024 1:30	7.4	62.6	0.0	6.8	11.5	22.5
11/07/2024 1:45	6.3	41.4	0.0	7.3	11.0	0.0	11/07/2024 1:45	7.4	62.8	0.0	6.9	11.5	21.3
11/07/2024 2:00	6.3	41.5	0.0	7.3	11.0	0.0	11/07/2024 2:00	7.4	63.0	0.0	6.8	11.5	26.7
11/07/2024 2:15	6.3	41.6	0.0	7.3	11.0	0.0	11/07/2024 2:15	7.4	62.8	0.0	6.8	11.4	21.0
11/07/2024 2:30	6.3	41.3	0.0	7.3	11.0	0.0	11/07/2024 2:30	7.4	62.3	0.0	6.8	11.5	19.0
11/07/2024 2:45	6.3	41.3	0.0	7.3	11.0	0.0	11/07/2024 2:45	7.4	62.4	0.0	6.9	11.5	23.5
11/07/2024 3:00	6.3	41.2	0.0	7.3	11.0	0.0	11/07/2024 3:00	7.4	62.0	0.0	6.9	11.5	17.8
11/07/2024 3:15	6.3	41.5	0.0	7.3	11.0	0.0	11/07/2024 3:15	7.4	61.4	0.0	6.9	11.5	21.7
11/07/2024 3:30	6.3	40.8	0.0	7.3	11.0	0.0	11/07/2024 3:30	7.4	61.5	0.0	6.9	11.5	21.0
11/07/2024 3:45	6.3	40.9	0.0	7.3	11.0	0.0	11/07/2024 3:45	7.4	61.6	0.0	6.9	11.5	21.3
11/07/2024 4:00	6.3	40.7	0.0	7.3	11.0	0.0	11/07/2024 4:00	7.4	62.0	0.0	6.9	11.5	21.3
11/07/2024 4:15	6.3	40.8	0.0	7.3	11.0	0.0	11/07/2024 4:15	7.4	61.4	0.0	6.8	11.5	23.5
11/07/2024 4:30	6.3	40.9	0.0	7.3	11.0	0.0	11/07/2024 4:30	7.4	61.3	0.0	6.9	11.5	22.7
11/07/2024 4:45	6.3	40.6	0.0	7.3	11.0	0.0	11/07/2024 4:45	7.4	61.0	0.0	6.9	11.5	24.7
11/07/2024 5:00	6.3	40.8	0.0	7.3	11.0	0.0	11/07/2024 5:00	7.4	61.3	0.0	6.9	11.5	26.0
11/07/2024 5:15	6.3	40.7	0.0	7.3	11.0	0.0	11/07/2024 5:15	7.4	62.0	0.0	6.8	11.5	21.8
11/07/2024 5:30	6.3	40.8	0.0	7.3	11.0	0.0	11/07/2024 5:30	7.4	61.3	0.0	6.8	11.5	21.4
11/07/2024 5:45	6.4	41.1	0.0	7.3	11.0	0.0	11/07/2024 5:45	7.4	61.4	0.0	6.9	11.5	27.4
11/07/2024 6:00	6.4	41.2	0.0	7.3	11.0	0.0	11/07/2024 6:00	7.4	61.5	0.0	6.9	11.5	21.5
11/07/2024 6:15	6.3	40.9	0.0	7.3	11.0	0.0	11/07/2024 6:15	7.4	61.6	0.0	6.8	11.5	20.8
11/07/2024 6:30	6.3	40.9	0.0	7.3	11.0	0.0	11/07/2024 6:30	7.4	61.8	0.0	6.9	11.5	27.1
11/07/2024 6:45	6.3	41.2	0.0	7.3	11.0	0.0	11/07/2024 6:45	7.4	61.7	0.0	6.9	11.5	20.7
11/07/2024 7:00	6.3	41.3	0.0	7.3	11.0	0.0	11/07/2024 7:00	7.4	61.7	0.0	6.9	11.5	25.6
11/07/2024 7:15	6.3	41.0	0.0	7.3	11.0	0.0	11/07/2024 7:15	7.4	61.8	0.0	6.8	11.4	20.1
11/07/2024 7:30	6.3	41.4	0.0	7.3	11.0	0.0	11/07/2024 7:30	7.3	61.5	0.0	6.9	11.5	23.8
11/07/2024 7:45	6.3	41.3	0.0	7.3	11.0	0.0	11/07/2024 7:45	7.3	62.0	0.0	6.9	11.5	22.3
11/07/2024 8:00	6.3	41.3	0.0	7.3	11.0	0.0	11/07/2024 8:00	7.3	62.0	0.0	6.9	11.5	23.5
11/07/2024 8:15	6.3	41.2	0.0	7.3	11.0	0.0	11/07/2024 8:15	7.3	62.2	0.0	6.9	11.5	22.5
11/07/2024 8:30	6.3	41.2	0.0	7.3	11.0	0.0	11/07/2024 8:30	7.3	62.4	0.0	6.9	11.5	25.7
11/07/2024 8:45	6.3	41.1	0.0	7.3	11.0	0.0	11/07/2024 8:45	7.3	62.3	0.0	6.9	11.5	22.0
11/07/2024 9:00	6.3	41.2	0.0	7.3	11.0	0.0	11/07/2024 9:00	7.3	62.7	0.0	6.9	11.5	26.0
11/07/2024 9:15	6.2	41.2	0.0	7.4	11.0	0.1	11/07/2024 9:15	7.3	62.6	0.0	6.9	11.5	26.6
11/07/2024 9:30	6.2	41.1	0.0	7.4	11.0	0.0	11/07/2024 9:30	7.3	62.9	0.0	6.9	11.5	25.9
11/07/2024 9:45	6.2	41.1	0.0	7.4	11.1	2.3	11/07/2024 9:45	7.3	62.2	0.0	6.9	11.5	27.1
11/07/2024 10:00	6.3	41.0	0.0	7.4	11.1	0.0	11/07/2024 10:00	7.3	62.0	0.0	6.9	11.5	28.3
11/07/2024 10:15	6.3	40.8	0.0	7.4	11.1	0.0	11/07/2024 10:15	7.4	62.2	0.0	6.9	11.5	27.2
11/07/2024 10:30	6.3	40.8	0.0	7.4	11.1	0.0	11/07/2024 10:30	7.4	62.0	0.0	6.9	11.6	26.2
11/07/2024 10:45	6.3	40.7	0.0	7.4	11.1	0.0	11/07/2024 10:45	7.4	61.8	0.0	6.9	11.6	25.9
11/07/2024 11:00	6.3	40.8	0.0	7.4	11.1	0.0	11/07/2024 11:00	7.4	62.1	0.0	6.9	11.6	25.9
11/07/2024 11:15	6.3	40.6	0.0	7.4	11.1	0.0	11/07/2024 11:15	7.4	63.7	0.0	6.9	11.6	23.3
11/07/2024 11:30	6.3	41.3	0.0	7.4	11.1	0.0	11/07/2024 11:30	7.5	66.1	0.0	6.9	11.6	23.4
11/07/2024 11:45	6.3	41.9	0.0	7.4	11.1	0.0	11/07/2024 11:45	7.5	66.7	0.0	6.9	11.5	27.4
11/07/2024 12:00	6.4	42.9	0.0	7.4	11.1	0.0	11/07/2024 12:00	7.5	64.1	0.0	6.9	11.6	30.3
11/07/2024 12:15	6.4	43.0	0.0	7.4	11.1	0.0	11/07/2024 12:15	7.5	65.5	0.0	6.9	11.6	26.9
11/07/2024 12:30	6.4	41.5	0.0	7.4	11.1	0.0	11/07/2024 12:30	7.6	68.4	0.0	6.9	11.5	28.3
11/07/2024 12:45	6.4	43.0	0.0	7.4	11.1	0.0	11/07/2024 12:45	7.6	68.4	0.0	6.9	11.5	29.5
11/07/2024 13:00	6.5	44.0	0.0	7.4	11.1	0.0	11/07/2024 13:00	7.6	66.0	0.0	6.9	11.5	28.2
11/07/2024 13:15	6.5	43.5	0.0	7.4	11.1	0.0	11/07/2024 13:15	7.6	65.0	0.0	6.9	11.5	29.3
11/07/2024 13:30	6.5	42.3	0.0	7.4	11.1	0.0	11/07/2024 13:30	7.6	65.4	0.0	6.9	11.5	28.0
11/07/2024 13:45	6.5	42.3	0.0	7.4	11.1	0.0	11/07/2024 13:45	7.6	68.0	0.0	6.9	11.5	29.7
11/07/2024 14:00	6.5	43.1	0.0	7.4	11.1	0.0	11/07/2024 14:00	7.6	67.1	0.0	6.9	11.5	30.4
11/07/2024 14:15	6.5	43.9	0.0	7.4	11.1	0.0	11/07/2024 14:15	7.6	65.7	0.0	6.9	11.5	25.5
11/07/2024 14:30	6.5	43.2	0.0	7.4	11.1	0.0	11/07/2024 14:30	7.6	64.9	0.0	6.9	11.5	28.2
11/07/2024 14:45	6.5	43.1	0.0	7.4	11.0	0.0	11/07/2024 14:45	7.6	65.5	0.0	6.9	11.5	26.8
11/07/2024 15:00	6.6	45.0	0.0	7.4	11.0	0.0	11/07/2024 15:00	7.7	65.5	0.0	6.9	11.5	27.3
11/07/2024 15:15	6.6	46.0	0.0	7.4	11.0	0.0	11/07/2024 15:15	7.7	64.9	0.0	6.9	11.5	26.9
11/07/2024 15:30	6.6	45.5	0.0	7.4	11.0	0.0	11/07/2024 15:30	7.7	65.1	0.0	6.9	11.4	26.0
11/07/2024 15:45	6.6	43.8	0.0	7.4	11.0	0.0	11/07/2024 15:45	7.7	64.2	0.0	6.9	11.4	26.7
11/07/2024 16:00	6.6	42.8	0.0	7.4	10.9	0.0	11/07/2024 16:00	7.7	64.4	0.0	6.9	11.4	26.2
11/07/2024 16:15	6.6	42.2	0.0	7.4	11.0	0.0	11/07/2024 16:15	7.7	63.9	0.0	6.9	11.4	26.9
11/07/2024 16:30	6.6	42.0	0.0	7.4	11.0	0.0	11/07/2024 16:30	7.7	64.1	0.0	6.9	11.4	28.3
11/07/2024 16:45	6.6	42.2	0.0	7.4	11.0	0.0	11/07/2024 16:45	7.7	64.7	0.0	6.9	11.4	29.9
11/07/2024 17:00	6.6	42.1	0.0	7.4	11.0	0.0	11/07/2024 17:00	7.7	64.4	0.0	6.9	11.4	26.3
11/07/2024 17:15	6.6	42.4	0.0	7.4	11.0	0.0	11/07/2024 17:15	7.7	64.7	0.0	6.9	11.4	23.7
11/07/2024 17:30	6.6	42.3	0.0	7.4	11.0	0.0	11/07/2024 17:30	7.7	64.6	0.0	6.9	11.4	33.0
11/07/2024 17:45	6.6	42.7	0.0	7.4	11.0	0.0	11/07/2024 17:45	7.7	64.3	0.0	6.9	11.4	27.7
11/07/2024 18:00	6.6	43.0	0.0	7.4	10.9	0.0	11/07/2024 18:00	7.7	64.3	0.0	6.9	11.4	25.8
11/07/2024 18:15	6.6	42.7	0.0	7.4	10.9	0.0	11/07/2024 18:15	7.7	64.5	0.0	6.9	11.4	28.5
11/07/2024 18:30	6.6	42.5	0.0	7.4	10.9	0.1	11/07/2024 18:30	7.7	64.8	0.0	6.9	11.4	28.4
11/07/2024 18:45	6.6	42.4	0.0	7.4	10.9	0.0	11/07/2024 18:45	7.7	65.0	0.0	6.9	11.4	28.3
11/07/2024 19:00	6.6	42.6	0.0	7.4	10.9	0.0	11/07/2024 19:00	7.7	64.5	0.0	6.9	11.3	29.7
11/07/2024 19:15	6.6	42.4	0.0	7.3	10.9	0.0	11/07/2024 19:15	7.7	64.6	0.0	6.9	11.3	26.1
11/07/2024 19:30	6.6	42.4	0.0	7.4	10.9	0.0	11/07/2024 19:30	7.7	64.7	0.0	6.9	11.3	26.1
11/07/2024 19:45	6.6	42.3	0.0	7.4	10.9	0.0	11/07/2024 19:45	7.7	65.3	0.0	6.9	11.3	23.3
11/07/2024 20:00	6.6	42.4	0.0	7.3	10.9	0.0	11/07/2024 20:00	7.7	64.6	0.0	6.9	11.3	26.8
11/07/2024 20:15	6.6	42.4	0.0	7.4	10.9	0.0	11/07/2024 20:15	7.7	64.8	0.0	6.9	11.3	24.5
11/07/2024 20:30	6.6	42.5	0.0	7.3	10.9	0.0	11/07/2024 20:30	7.7	64.6	0.0	6.9	11.3	25.1
11/07/2024 20:45	6.6	42.3	0.0	7.4	10.9	0.0	11/07/2024 20:45	7.7	65.1	0.0	6.9	11.3	26.0
11/07/2024 21:00	6.6	42.5	0.0	7.4	10.9	0.0	11/07/2024 21:00	7.7	65.2	0.0	6.9	11.3	27.0
11/07/2024 21:15	6.6	42.6	0.0	7.3	10.9	0.0	11/07/2024 21:15	7.7	65.3	0.0	6.9	11.3	26.2
11/07/2024 21:30	6.6	42.7	0.0	7.4	10.9	0.0	11/07/2024 21:30	7.7	65.4	0.0	6.9	11.3	26.5
11/07/2024 21:45	6.7	42.6	0.0	7.4	10.9	0.0	11/07/2024 21:45	7.7	65.0	0.0	6.9	11.3	27.1
11/07/2024 22:00	6.7	42.6	0.0	7.4	10.9	0.0	11/07/2024 22:00	7.7	65.5	0.0	6.9	11.3	24.4
11/07/2024 22:15	6.7	42.6	0.0	7.3	10.9	0.0	11/07/2024 22:15	7.7	65.2	0.0	6.9	11.3	25.9
11/07/2024 22:30	6.7	42.9	0.0	7.4	10.9	0.3	11/07/2024 22:30	7.7	64.4	0.0	6.9	11.3	25.5
11/07/2024 22:45	6.7	42.8	0.0	7.3	10.9	0.0	11/07/2024 22:45	7.7	63.9	0.0	6.9	11.3	26.0
11/07/2024 23:00	6.6	42.2	0.0	7.4	10.9	0.0	11/07/2024 23:00	7.7	64.1	0.0	6.9	11.3	26.2
11/07/2024 23:15	6.6	42.5	0.0	7.3	10.9	0.0	11/07/2024 23:15	7.7	63.8	0.0	6.9	11.3	24.9
11/07/2024 23:30	6.6	42.3	0.0	7.3	10.9	0.0	11/07/2024 23:30	7.7	63.9	0.0	6.9	11.4	24.2
11/07/2024 23:45	6.6	42.6	0.0	7.3	10.9	0.0	11/07/2024 23:45	7.7	63.7	0.0	6.9	11.4	25.1
11/08/2024 0:00	6.6	42.5	0.0	7.3	10.9	0.2	11/08/2024 0:00	7.7	63.6	0.0	6.9	11.4	26.1
11/08/2024 0:15	6.7	42.8	0.0	7.3	10.9	0.0	11/08/2024 0:15	7.7	64.0	0.0	6.9	11.4	26.5
11/08/2024 0:30	6.6	42.5	0.0	7.3	10.9	0.1	11/08/2024 0:30	7.7	64.8	0.0	6.9	11.4	28.4
11/08/2024 0:45	6.6	42.6	0.0	7.3	10.9	0.0	11/08/2024 0:45	7.7	65.6	0.0	6.9	11.4	26.3
11/08/2024 1:00	6.7	43.6	0.0	7.3	10.9	0.2	11/08/2024 1:00	7.7	65.9	0.0	6.9	11.3	25.8
11/08/2024 1:15	6.7	43.8	0.0	7.3	10.9	0.0	11/08/2024 1:15	7.7	64.7	0.0	6.9	11.4	28.3
11/08/2024 1:30	6.7	43.4	0.0	7.3	10.8	0.0	11/08/2024 1:30	7.7	64.4	0.0	6.9	11.4	26.6

11/08/2024 1:45	6.7	43.5	0.0	7.3	10.9	0.0
11/08/2024 2:00	6.6	44.0	0.0	7.3	10.9	0.1
11/08/2024 2:15	6.6	44.6	0.0	7.3	10.9	0.0
11/08/2024 2:30	6.6	44.2	0.0	7.3	10.9	0.0
11/08/2024 2:45	6.6	43.7	0.0	7.3	10.9	0.0
11/08/2024 3:00	6.6	43.6	0.0	7.3	10.9	0.1
11/08/2024 3:15	6.6	43.1	0.0	7.3	10.9	0.0
11/08/2024 3:30	6.6	43.0	0.0	7.3	10.9	0.0
11/08/2024 3:45	6.6	41.3	0.0	7.4	10.9	0.0
11/08/2024 4:00	6.6	41.4	0.0	7.4	10.9	0.0
11/08/2024 4:15	6.6	40.8	0.0	7.4	10.9	0.0
11/08/2024 4:30	6.6	40.7	0.0	7.3	11.0	0.0
11/08/2024 4:45	6.6	40.4	0.0	7.3	11.0	0.0
11/08/2024 5:00	6.6	41.6	0.0	7.4	11.0	0.0
11/08/2024 5:15	6.6	40.3	0.0	7.3	10.9	0.0
11/08/2024 5:30	6.6	40.0	0.0	7.3	11.0	0.0
11/08/2024 5:45	6.5	40.0	0.0	7.3	11.0	0.0
11/08/2024 6:00	6.5	40.1	0.0	7.4	11.0	0.0
11/08/2024 6:15	6.5	39.7	0.0	7.3	11.0	0.3
11/08/2024 6:30	6.5	39.8	0.0	7.4	11.0	0.0
11/08/2024 6:45	6.5	39.7	0.0	7.4	11.0	0.0
11/08/2024 7:00	6.5	39.8	0.0	7.4	11.0	0.2
11/08/2024 7:15	6.5	39.6	0.0	7.4	11.0	0.0
11/08/2024 7:30	6.5	39.4	0.0	7.4	11.0	0.0
11/08/2024 7:45	6.5	39.5	0.0	7.4	11.0	0.0
11/08/2024 8:00	6.5	39.2	0.0	7.4	11.0	0.0
11/08/2024 8:15	6.5	39.3	0.0	7.4	11.0	0.0
11/08/2024 8:30	6.5	39.1	0.0	7.4	11.0	0.0
11/08/2024 8:45	6.5	39.1	0.0	7.4	11.0	0.6
11/08/2024 9:00	6.5	38.9	0.0	7.4	11.0	0.0
11/08/2024 9:15	6.5	38.9	0.0	7.4	11.0	0.2
11/08/2024 9:30	6.5	38.6	0.0	7.4	11.0	0.8
11/08/2024 9:45	6.5	38.6	0.0	7.4	11.0	16.4
11/08/2024 10:00	6.5	38.4	0.0	7.4	11.0	0.0
11/08/2024 10:15	6.5	38.2	0.0	7.4	11.1	0.0
11/08/2024 10:30	6.5	37.7	0.0	7.5	11.1	0.0
11/08/2024 10:45	6.5	37.7	0.0	7.5	11.1	0.1
11/08/2024 11:00	6.5	37.8	0.0	7.5	11.1	0.0
11/08/2024 11:15	6.5	38.0	0.0	7.4	11.1	0.0
11/08/2024 11:30	6.5	38.1	0.0	7.5	11.1	0.0
11/08/2024 11:45	6.5	37.7	0.0	7.5	11.1	0.0
11/08/2024 12:00	6.5	38.4	0.0	7.5	11.1	0.0
11/08/2024 12:15	6.5	38.5	0.0	7.5	11.1	0.0
11/08/2024 12:30	6.6	38.0	0.0	7.5	11.1	0.2
11/08/2024 12:45	6.6	38.0	0.0	7.5	11.1	0.0
11/08/2024 13:00	6.6	38.5	0.0	7.5	11.1	0.4
11/08/2024 13:15	6.6	38.1	0.0	7.4	11.2	0.5
11/08/2024 13:30	6.6	38.4	0.0	7.5	11.1	0.3
11/08/2024 13:45	6.6	37.9	0.0	7.5	11.1	0.0
11/08/2024 14:00	6.6	37.7	0.0	7.5	11.1	0.3
11/08/2024 14:15	6.6	37.3	0.0	7.5	11.1	0.6
11/08/2024 14:30	6.6	37.1	0.0	7.5	11.1	0.5
11/08/2024 14:45	6.7	39.9	0.0	7.5	11.1	0.1
11/08/2024 15:00	6.7	41.0	0.0	7.5	11.1	0.3
11/08/2024 15:15	6.7	40.1	0.0	7.5	11.1	1.1
11/08/2024 15:30	6.7	40.3	0.0	7.4	11.1	1.3
11/08/2024 15:45	6.7	39.6	0.0	7.5	11.1	1.7
11/08/2024 16:00	6.7	38.1	0.0	7.4	11.1	3.6
11/08/2024 16:15	6.7	36.2	0.0	7.5	11.1	0.5
11/08/2024 16:30	6.7	37.5	0.0	7.5	11.1	0.6
11/08/2024 16:45	6.6	36.8	0.0	7.5	11.1	1.7
11/08/2024 17:00	6.6	36.0	0.0	7.5	11.1	1.7
11/08/2024 17:15	6.6	35.4	0.0	7.4	11.1	2.7
11/08/2024 17:30	6.6	34.7	0.0	7.4	11.1	1.8
11/08/2024 17:45	6.6	34.5	0.0	7.5	11.1	1.4
11/08/2024 18:00	6.6	33.8	0.0	7.4	11.1	2.5
11/08/2024 18:15	6.6	34.0	0.0	7.5	11.1	2.6
11/08/2024 18:30	6.6	33.1	0.0	7.4	11.1	9.9
11/08/2024 18:45	6.6	33.0	0.0	7.4	11.2	8.6
11/08/2024 19:00	6.6	32.6	0.0	7.4	11.2	6.8
11/08/2024 19:15	6.6	32.4	0.0	7.5	11.2	5.4
11/08/2024 19:30	6.6	31.9	0.0	7.5	11.2	5.8
11/08/2024 19:45	6.6	31.5	0.0	7.4	11.2	11.3
11/08/2024 20:00	6.6	31.5	0.0	7.5	11.2	5.6
11/08/2024 20:15	6.6	30.8	0.0	7.4	11.2	8.4
11/08/2024 20:30	6.6	30.7	0.0	7.4	11.2	10.5
11/08/2024 20:45	6.6	30.2	0.0	7.4	11.2	20.4
11/08/2024 21:00	6.6	29.8	0.0	7.4	11.2	8.9
11/08/2024 21:15	6.6	29.6	0.0	7.4	11.2	21.3
11/08/2024 21:30	6.6	29.2	0.0	7.4	11.2	17.4
11/08/2024 21:45	6.5	28.7	0.0	7.4	11.2	36.6
11/08/2024 22:00	6.5	28.5	0.0	7.4	11.2	31.4
11/08/2024 22:15	6.5	27.9	0.0	7.4	11.2	22.0
11/08/2024 22:30	6.5	28.2	0.0	7.3	11.2	26.9
11/08/2024 22:45	6.5	27.5	0.0	7.4	11.3	32.6
11/08/2024 23:00	6.5	27.2	0.0	7.4	11.3	21.4
11/08/2024 23:15	6.4	26.7	0.0	7.4	11.3	73.3
11/08/2024 23:30	6.4	27.1	0.0	7.4	11.3	47.7
11/08/2024 23:45	6.4	26.9	0.0	7.4	11.3	53.3
11/09/2024 0:00	6.4	26.8	0.0	7.4	11.3	55.5
11/09/2024 0:15	6.4	26.6	0.0	7.4	11.3	90.0
11/09/2024 0:30	6.4	27.1	0.0	7.4	11.3	71.1
11/09/2024 0:45	6.3	26.2	0.0	7.4	11.4	57.5
11/09/2024 1:00	6.3	26.3	0.0	7.4	11.4	67.6
11/09/2024 1:15	6.3	26.1	0.0	7.4	11.4	68.5
11/09/2024 1:30	6.3	25.9	0.0	7.4	11.4	181.1
11/09/2024 1:45	6.2	25.4	0.0	7.3	11.4	80.3
11/09/2024 2:00	6.2	25.5	0.0	7.3	11.4	149.5
11/09/2024 2:15	6.2	25.4	0.0	7.4	11.4	87.1

11/08/2024 1:45	7.7	64.0	0.0	6.9	11.4	27.2
11/08/2024 2:00	7.7	63.7	0.0	6.9	11.4	28.0
11/08/2024 2:15	7.7	63.0	0.0	6.9	11.4	24.7
11/08/2024 2:30	7.7	62.7	0.0	6.9	11.4	26.5
11/08/2024 2:45	7.6	61.9	0.0	6.9	11.4	30.0
11/08/2024 3:00	7.7	62.6	0.0	6.9	11.4	27.5
11/08/2024 3:15	7.6	61.9	0.0	6.9	11.4	31.5
11/08/2024 3:30	7.6	61.8	0.0	6.9	11.4	27.2
11/08/2024 3:45	7.6	62.1	0.0	6.9	11.4	26.8
11/08/2024 4:00	7.6	61.2	0.0	6.9	11.4	26.2
11/08/2024 4:15	7.6	61.1	0.0	6.9	11.4	30.8
11/08/2024 4:30	7.6	61.0	0.0	6.9	11.4	25.9
11/08/2024 4:45	7.6	61.0	0.0	6.9	11.4	25.9
11/08/2024 5:00	7.6	60.6	0.0	6.9	11.4	29.0
11/08/2024 5:15	7.6	60.4	0.0	6.9	11.4	30.1
11/08/2024 5:30	7.6	60.5	0.0	6.9	11.4	28.2
11/08/2024 5:45	7.6	60.2	0.0	6.9	11.4	26.9
11/08/2024 6:00	7.6	60.1	0.0	6.9	11.4	30.1
11/08/2024 6:15	7.6	59.9	0.0	6.9	11.4	30.6
11/08/2024 6:30	7.6	60.1	0.0	6.9	11.4	26.1
11/08/2024 6:45	7.6	60.4	0.0	6.9	11.4	27.0
11/08/2024 7:00	7.6	59.8	0.0	6.9	11.4	30.0
11/08/2024 7:15	7.6	60.1	0.0	6.9	11.4	29.3
11/08/2024 7:30	7.6	59.7	0.0	6.9	11.4	27.3
11/08/2024 7:45	7.6	59.4	0.0	6.9	11.5	30.0
11/08/2024 8:00	7.6	59.5	0.0	6.9	11.4	30.3
11/08/2024 8:15	7.6	59.6	0.0	6.9	11.4	34.3
11/08/2024 8:30	7.6	59.9	0.0	6.9	11.4	33.0
11/08/2024 8:45	7.6	59.8	0.0	6.9	11.5	29.6
11/08/2024 9:00	7.6	59.3	0.0	6.9	11.4	30.1
11/08/2024 9:15	7.6	58.8	0.0	6.9	11.5	32.4
11/08/2024 9:30	7.6	59.1	0.0	6.9	11.5	28.3
11/08/2024 9:45	7.6	59.1	0.0	6.9	11.5	31.5
11/08/2024 10:00	7.6	57.9	0.0	6.9	11.5	33.4
11/08/2024 10:15	7.6	57.7	0.0	6.9	11.5	33.0
11/08/2024 10:30	7.6	58.1	0.0	6.9	11.5	35.0
11/08/2024 10:45	7.6	58.3	0.0	7.0	11.6	33.3
11/08/2024 11:00	7.6	58.7	0.0	7.0	11.5	31.5
11/08/2024 11:15	7.6	58.2	0.0	7.0	11.6	35.2
11/08/2024 11:30	7.6	60.1	0.0	7.0	11.5	34.0
11/08/2024 11:45	7.6	58.4	0.0	7.0	11.6	35.5
11/08/2024 12:00	7.6	59.2	0.0	7.0	11.6	34.2
11/08/2024 12:15	7.6	58.3	0.0	7.0	11.6	33.4
11/08/2024 12:30	7.7	60.0	0.0	7.0	11.6	29.9
11/08/2024 12:45	7.7	58.8	0.0	7.0	11.6	30.7
11/08/2024 13:00	7.7	59.8	0.0	7.0	11.6	31.5
11/08/2024 13:15	7.7	59.3	0.0	7.0	11.6	37.2
11/08/2024 13:30	7.7	58.6	0.0	7.0	11.6	37.9
11/08/2024 13:45	7.7	58.8	0.0	7.0	11.6	32.2
11/08/2024 14:00	7.7	58.2	0.0	7.0	11.6	37.3
11/08/2024 14:15	7.7	57.9	0.0	7.0	11.6	32.6
11/08/2024 14:30	7.7	57.7	0.0	7.0	11.6	35.9
11/08/2024 14:45	7.8	57.8	0.0	7.0	11.6	32.4
11/08/2024 15:00	7.8	56.9	0.0	7.0	11.6	36.6
11/08/2024 15:15	7.8	56.6	0.0	7.0	11.6	33.7
11/08/2024 15:30	7.8	56.5	0.0	7.0	11.6	41.2
11/08/2024 15:45	7.8	56.4	0.0	7.0	11.6	34.7
11/08/2024 16:00	7.7	56.0	0.0	7.0	11.6	27.8
11/08/2024 16:15	7.7	56.2	0.0	7.0	11.6	32.2
11/08/2024 16:30	7.7	55.1	0.0	7.0	11.6	33.4
11/08/2024 16:45	7.7	55.2	0.0	7.0	11.6	32.0
11/08/2024 17:00	7.7	54.8	0.0	7.0	11.6	31.7
11/08/2024 17:15	7.7	54.4	0.0	7.0	11.6	38.9
11/08/2024 17:30	7.7	54.3	0.0	7.0	11.6	36.3
11/08/2024 17:45	7.7	53.0	0.0	7.0	11.6	38.5
11/08/2024 18:00	7.7	52.6	0.0	7.0	11.6	36.2
11/08/2024 18:15	7.7	52.2	0.0	7.0	11.6	39.2
11/08/2024 18:30	7.7	51.8	0.0	7.0	11.6	47.5
11/08/2024 18:45	7.7	51.7	0.0	6.9	11.6	38.7
11/08/2024 19:00	7.7	51.2	0.0	6.9	11.6	53.1
11/08/2024 19:15	7.7	50.6	0.0	6.9	11.6	41.3
11/08/2024 19:30	7.7	50.2	0.0	6.9	11.6	45.1
11/08/2024 19:45	7.7	50.0	0.0	6.9	11.6	42.3
11/08/2024 20:00	7.7	50.1	0.0	6.9	11.6	46.6
11/08/2024 20:15	7.7	49.2	0.0	6.9	11.6	45.1
11/08/2024 20:30	7.7	48.9	0.0	6.9	11.6	43.3
11/08/2024 20:45	7.7	48.2	0.0	6.9	11.6	62.7
11/08/2024 21:00	7.7	47.9	0.0	6.9	11.6	62.4
11/08/2024 21:15	7.7	47.8	0.0	6.8	11.6	51.7
11/08/2024 21:30	7.6	47.0	0.0	6.8	11.6	54.8
11/08/2024 21:45	7.6	48.3	0.0	6.8	11.7	51.7
11/08/2024 22:00	7.6	48.8	0.0	6.8	11.7	50.9
11/08/2024 22:15	7.6	51.4	0.0	6.8	11.7	51.5
11/08/2024 22:30	7.6	51.0	0.0	6.8	11.7	97.7
11/08/2024 22:45	7.6	49.6	0.0	6.8	11.7	57.5
11/08/2024 23:00	7.6	48.1	0.0	6.8	11.7	54.8
11/08/2024 23:15	7.6	46.3	0.0	6.8	11.7	50.3
11/08/2024 23:30	7.6	46.9	0.0	6.8	11.7	49.4
11/08/2024 23:45	7.5	46.0	0.0	6.9	11.7	56.8
11/09/2024 0:00	7.5	45.7	0.0	6.9	11.7	49.6
11/09/2024 0:15	7.5	46.2	0.0	6.9	11.8	54.3
11/09/2024 0:30	7.5	45.6	0.0	6.9	11.8	54.7
11/09/2024 0:45	7.5	45.8	0.0	6.9	11.8	57.8
11/09/2024 1:00	7.5	45.7	0.0	6.9	11.8	57.2
11/09/2024 1:15	7.4	45.0	0.0	6.9	11.8	58.8
11/09/2024 1:30	7.4	44.3	0.0	6.9	11.8	95.6
11/09/2024 1:45	7.4	44.1	0.0	6.9	11.8	65.7
11/09/2024 2:00	7.4	43.5	0.0	6.9	11.8	81.7
11/09/2024 2:15	7.3	43.6	0.0	6.8	11.8	68.7

11/09/2024 2:30	6.2	24.8	0.0	7.4	11.4	86.2	11/09/2024 2:30	7.3	43.0	0.0	6.8	11.8	99.8
11/09/2024 2:45	6.1	24.5	0.0	7.4	11.5	82.4	11/09/2024 2:45	7.3	43.1	0.0	6.8	11.9	70.5
11/09/2024 3:00	6.1	24.0	0.0	7.3	11.5	106.2	11/09/2024 3:00	7.3	42.5	0.0	6.8	11.9	80.5
11/09/2024 3:15	6.1	24.2	0.0	7.3	11.5	124.8	11/09/2024 3:15	7.2	43.0	0.0	6.8	11.9	67.5
11/09/2024 3:30	6.1	24.2	0.0	7.4	11.5	132.5	11/09/2024 3:30	7.2	42.7	0.0	6.8	11.9	69.7
11/09/2024 3:45	6.1	24.0	0.0	7.4	11.5	145.3	11/09/2024 3:45	7.2	44.0	0.0	6.8	11.9	59.7
11/09/2024 4:00	6.1	24.4	0.0	7.4	11.5	84.8	11/09/2024 4:00	7.3	43.2	0.0	6.8	12.0	69.7
11/09/2024 4:15	6.1	24.3	0.0	7.3	11.5	90.5	11/09/2024 4:15	7.2	42.1	0.0	6.8	12.0	67.6
11/09/2024 4:30	6.1	24.0	0.0	7.4	11.6	75.5	11/09/2024 4:30	7.2	41.4	0.0	6.8	12.0	248.4
11/09/2024 4:45	6.1	23.7	0.0	7.3	11.6	89.1	11/09/2024 4:45	7.2	40.7	0.0	6.8	12.0	491.4
11/09/2024 5:00	6.0	22.8	0.0	7.4	11.6	88.6	11/09/2024 5:00	7.2	40.4	0.0	6.8	12.0	65.8
11/09/2024 5:15	6.0	22.7	0.0	7.3	11.6	92.2	11/09/2024 5:15	7.1	39.3	0.0	6.8	12.0	75.2
11/09/2024 5:30	6.0	22.1	0.0	7.3	11.6	96.1	11/09/2024 5:30	7.1	39.1	0.0	6.8	12.0	58.0
11/09/2024 5:45	5.9	21.8	0.0	7.4	11.6	80.2	11/09/2024 5:45	7.1	38.8	0.0	6.8	12.0	53.7
11/09/2024 6:00	5.9	21.4	0.0	7.2	11.6	77.9	11/09/2024 6:00	7.1	38.9	0.0	6.8	12.0	69.0
11/09/2024 6:15	5.9	21.7	0.0	7.2	11.6	81.1	11/09/2024 6:15	7.1	38.8	0.0	6.8	12.0	57.4
11/09/2024 6:30	5.9	21.6	0.0	7.3	11.6	67.3	11/09/2024 6:30	7.1	38.1	0.0	6.8	12.0	254.1
11/09/2024 6:45	5.9	21.2	0.0	7.3	11.6	65.9	11/09/2024 6:45	7.1	41.3	0.0	6.8	12.0	58.9
11/09/2024 7:00	5.9	21.2	0.0	7.3	11.6	60.3	11/09/2024 7:00	7.1	41.5	0.0	6.8	12.0	48.0
11/09/2024 7:15	5.9	21.2	0.0	7.3	11.6	68.8	11/09/2024 7:15	7.0	40.9	0.0	6.8	12.0	43.3
11/09/2024 7:30	5.9	21.1	0.0	7.3	11.6	70.3	11/09/2024 7:30	7.0	37.2	0.0	6.8	12.0	99.0
11/09/2024 7:45	5.9	21.1	0.0	7.3	11.6	63.3	11/09/2024 7:45	7.0	37.8	0.0	6.8	12.0	45.6
11/09/2024 8:00	5.9	20.9	0.0	7.3	11.6	60.0	11/09/2024 8:00	7.0	37.4	0.0	6.8	12.0	63.2
11/09/2024 8:15	5.9	21.2	0.0	7.3	11.6	58.0	11/09/2024 8:15	7.0	39.4	0.0	6.7	12.0	39.4
11/09/2024 8:30	5.9	21.0	0.0	7.3	11.6	46.1	11/09/2024 8:30	7.0	38.4	0.0	6.8	12.0	40.1
11/09/2024 8:45	5.9	20.9	0.0	7.3	11.6	56.7	11/09/2024 8:45	7.0	42.5	0.0	6.8	12.0	36.4
11/09/2024 9:00	5.9	20.8	0.0	7.3	11.6	58.6	11/09/2024 9:00	7.0	37.5	0.0	6.7	12.0	40.5
11/09/2024 9:15	5.9	21.2	0.0	7.3	11.6	57.3	11/09/2024 9:15	7.0	40.4	0.0	6.7	12.0	125.8
11/09/2024 9:30	5.9	21.0	0.0	7.3	11.6	48.1	11/09/2024 9:30	7.0	37.5	0.0	6.7	12.0	45.5
11/09/2024 9:45	5.9	21.2	0.0	7.3	11.6	42.3	11/09/2024 9:45	7.0	41.1	0.0	6.7	12.0	33.1
11/09/2024 10:00	5.9	21.4	0.0	7.3	11.6	37.9	11/09/2024 10:00	7.0	39.5	0.0	6.7	12.0	38.2
11/09/2024 10:15	5.9	21.3	0.0	7.3	11.6	42.6	11/09/2024 10:15	7.1	40.9	0.0	6.7	12.0	111.8
11/09/2024 10:30	5.9	21.3	0.0	7.3	11.6	45.2	11/09/2024 10:30	7.1	38.0	0.0	6.7	12.0	32.7
11/09/2024 10:45	5.9	21.5	0.0	7.3	11.5	50.3	11/09/2024 10:45	7.1	39.8	0.0	6.7	12.0	31.0
11/09/2024 11:00	5.9	21.5	0.0	7.3	11.6	42.7	11/09/2024 11:00	7.1	39.1	0.0	6.7	12.0	36.9
11/09/2024 11:15	5.9	21.3	0.0	7.3	11.5	41.4	11/09/2024 11:15	7.1	44.5	0.0	6.7	11.9	34.3
11/09/2024 11:30	5.9	21.9	0.0	7.3	11.5	44.5	11/09/2024 11:30	7.1	44.9	0.0	6.7	12.0	35.9
11/09/2024 11:45	5.9	21.7	0.0	7.3	11.5	40.7	11/09/2024 11:45	7.1	45.0	0.0	6.7	11.9	35.4
11/09/2024 12:00	6.0	22.1	0.0	7.3	11.5	41.9	11/09/2024 12:00	7.1	45.3	0.0	6.7	11.9	32.4
11/09/2024 12:15	6.0	22.1	0.0	7.3	11.5	36.4	11/09/2024 12:15	7.1	41.9	0.0	6.7	11.9	43.5
11/09/2024 12:30	6.0	22.1	0.0	7.3	11.5	42.8	11/09/2024 12:30	7.1	42.5	0.0	6.8	11.9	43.0
11/09/2024 12:45	6.0	22.2	0.0	7.3	11.5	45.7	11/09/2024 12:45	7.2	41.4	0.0	6.8	11.9	36.3
11/09/2024 13:00	6.0	22.1	0.0	7.3	11.5	36.1	11/09/2024 13:00	7.2	39.4	0.0	6.8	11.9	34.9
11/09/2024 13:15	6.0	22.4	0.0	7.3	11.5	39.5	11/09/2024 13:15	7.2	40.0	0.0	6.8	11.9	36.5
11/09/2024 13:30	6.0	22.4	0.0	7.3	11.5	36.0	11/09/2024 13:30	7.2	39.4	0.0	6.8	11.9	36.2
11/09/2024 13:45	6.0	22.6	0.0	7.3	11.5	39.7	11/09/2024 13:45	7.2	39.9	0.0	6.8	11.9	37.4
11/09/2024 14:00	6.0	22.8	0.0	7.3	11.5	35.8	11/09/2024 14:00	7.2	39.1	0.0	6.8	11.9	38.9
11/09/2024 14:15	6.0	22.7	0.0	7.3	11.5	39.5	11/09/2024 14:15	7.2	39.8	0.0	6.8	11.9	41.0
11/09/2024 14:30	6.1	23.0	0.0	7.3	11.4	38.8	11/09/2024 14:30	7.2	39.9	0.0	6.8	11.9	41.1
11/09/2024 14:45	6.1	22.8	0.0	7.3	11.4	36.5	11/09/2024 14:45	7.2	39.9	0.0	6.8	11.8	38.8
11/09/2024 15:00	6.1	22.9	0.0	7.3	11.4	33.8	11/09/2024 15:00	7.2	39.6	0.0	6.8	11.8	40.1
11/09/2024 15:15	6.1	22.8	0.0	7.3	11.4	41.1	11/09/2024 15:15	7.3	40.0	0.0	6.8	11.8	38.4
11/09/2024 15:30	6.1	22.9	0.0	7.3	11.4	29.0	11/09/2024 15:30	7.3	39.8	0.0	6.8	11.8	53.6
11/09/2024 15:45	6.1	22.8	0.0	7.3	11.4	36.1	11/09/2024 15:45	7.3	40.0	0.0	6.8	11.8	32.3
11/09/2024 16:00	6.1	22.9	0.0	7.3	11.4	36.4	11/09/2024 16:00	7.3	40.6	0.0	6.7	11.7	36.6
11/09/2024 16:15	6.1	23.3	0.0	7.3	11.4	32.0	11/09/2024 16:15	7.3	40.3	0.0	6.7	11.7	34.5
11/09/2024 16:30	6.1	23.1	0.0	7.3	11.4	33.1	11/09/2024 16:30	7.3	40.2	0.0	6.7	11.7	32.6
11/09/2024 16:45	6.1	23.2	0.0	7.3	11.4	30.8	11/09/2024 16:45	7.3	40.5	0.0	6.7	11.7	33.2
11/09/2024 17:00	6.2	23.1	0.0	7.3	11.4	30.4	11/09/2024 17:00	7.3	40.9	0.0	6.7	11.7	34.4
11/09/2024 17:15	6.2	23.5	0.0	7.3	11.3	32.1	11/09/2024 17:15	7.3	40.7	0.0	6.7	11.7	35.3
11/09/2024 17:30	6.2	23.3	0.0	7.3	11.3	34.8	11/09/2024 17:30	7.3	40.5	0.0	6.7	11.7	35.0
11/09/2024 17:45	6.2	23.2	0.0	7.3	11.3	21.2	11/09/2024 17:45	7.3	40.4	0.0	6.7	11.7	44.0
11/09/2024 18:00	6.2	23.3	0.0	7.2	11.3	28.1	11/09/2024 18:00	7.3	40.2	0.0	6.7	11.7	37.6
11/09/2024 18:15	6.2	23.5	0.0	7.3	11.3	30.1	11/09/2024 18:15	7.3	40.4	0.0	6.7	11.7	35.6
11/09/2024 18:30	6.2	23.4	0.0	7.3	11.3	27.8	11/09/2024 18:30	7.3	40.6	0.0	6.7	11.7	33.2
11/09/2024 18:45	6.2	23.4	0.0	7.3	11.3	28.7	11/09/2024 18:45	7.3	40.8	0.0	6.7	11.7	31.7
11/09/2024 19:00	6.2	23.5	0.0	7.3	11.3	27.7	11/09/2024 19:00	7.3	40.2	0.0	6.7	11.7	38.3
11/09/2024 19:15	6.2	23.4	0.0	7.2	11.3	28.4	11/09/2024 19:15	7.3	40.4	0.0	6.7	11.7	34.5
11/09/2024 19:30	6.2	23.5	0.0	7.3	11.3	29.2	11/09/2024 19:30	7.3	40.6	0.0	6.7	11.7	30.5
11/09/2024 19:45	6.2	23.6	0.0	7.3	11.3	26.9	11/09/2024 19:45	7.3	40.2	0.0	6.7	11.7	39.1
11/09/2024 20:00	6.2	23.4	0.0	7.3	11.3	31.8	11/09/2024 20:00	7.3	40.6	0.0	6.7	11.7	34.0
11/09/2024 20:15	6.2	23.6	0.0	7.3	11.3	27.6	11/09/2024 20:15	7.3	39.9	0.0	6.7	11.7	34.1
11/09/2024 20:30	6.2	23.6	0.0	7.4	11.3	29.2	11/09/2024 20:30	7.3	39.8	0.0	6.7	11.7	37.5
11/09/2024 20:45	6.2	23.6	0.0	7.3	11.3	20.8	11/09/2024 20:45	7.3	40.3	0.0	6.7	11.7	34.7
11/09/2024 21:00	6.2	23.5	0.0	7.3	11.3	22.1	11/09/2024 21:00	7.3	40.4	0.0	6.7	11.7	31.6
11/09/2024 21:15	6.2	23.7	0.0	7.3	11.3	21.5	11/09/2024 21:15	7.3	42.3	0.0	6.7	11.7	33.5
11/09/2024 21:30	6.2	23.6	0.0	7.3	11.3	25.5	11/09/2024 21:30	7.4	41.1	0.0	6.7	11.7	32.8
11/09/2024 21:45	6.2	23.8	0.0	7.3	11.3	22.6	11/09/2024 21:45	7.4	40.8	0.0	6.7	11.7	33.4
11/09/2024 22:00	6.2	23.8	0.0	7.3	11.3	21.9	11/09/2024 22:00	7.4	40.9	0.0	6.7	11.7	36.0
11/09/2024 22:15	6.2	24.0	0.0	7.3	11.3	27.8	11/09/2024 22:15	7.4	42.1	0.0	6.7	11.7	31.2
11/09/2024 22:30	6.2	23.8	0.0	7.3	11.3	27.3	11/09/2024 22:30	7.4	40.9	0.0	6.7	11.7	33.1
11/09/2024 22:45	6.2	24.0	0.0	7.3	11.3	27.9	11/09/2024 22:45	7.4	41.3	0.0	6.7	11.7	31.0
11/09/2024 23:00	6.2	23.9	0.0	7.3	11.3	23.0	11/09/2024 23:00	7.4	41.0	0.0	6.7	11.7	31.6
11/09/2024 23:15	6.2	24.0	0.0	7.3	11.3	17.3	11/09/2024 23:15	7.4	43.3	0.0	6.7	11.7	34.1
11/09/2024 23:30	6.2	24.0	0.0	7.3	11.3	22.7	11/09/2024 23:30	7.3	40.7	0.0	6.7	11.7	32.1
11/09/2024 23:45	6.2	23.9	0.0	7.3	11.3	17.8	11/09/2024 23:45	7.4	42.5	0.0	6.7	11.7	32.5
11/10/2024 0:00	6.2	24.0	0.0	7.3	11.3	23.4	11/10/2024 0:00	7.3	42.2	0.0	6.7	11.7	34.3
11/10/2024 0:15	6.2	23.9	0.0	7.3	11.3	25.2	11/10/2024 0:15	7.4	43.6	0.0	6.7	11.7	35.9
11/10/2024 0:30	6.2	24.1	0.0	7.2	11.3	22.1	11/10/2024 0:30	7.3	43.3	0.0	6.7	11.7	34.8
11/10/2024 0:45	6.2	24.1	0.0	7.3	11.3	14.3	11/10/2024 0:45	7.3	40.8	0.0	6.7	11.7	31.1
11/10/2024 1:00	6.2	24.1	0.0	7.3	11.3	18.5	11/10/2024 1:00	7.3	40.7	0.0	6.7	11.7	35.7
11/10/2024 1:15	6.2	24.1	0.0	7.3	11.3	29.6	11/10/2024 1:15	7.3	42.9	0.0	6.7	11.7	36.2
11/10/2024 1:30	6.2	24.1	0.0	7.3	11.3	17.8	11/10/2024 1:30	7.3	40.9	0.0	6.7	11.6	34.9
11/10/2024 1:45	6.2	24.1	0.0	7.3	11.3	17.3	11/10/2024 1:45	7.3	41.0	0.0	6.7	11.7	33.3
11/10/2024 2:00	6.2	24.1	0.0	7.3	11.3	19.4	11/10/2024 2:00	7.3	41.1	0.0	6.7	11.7	32.3
11/10/2024 2:15	6.2	24.1	0.0	7.3	11.3	18.1	11/10/2024 2:15	7.3	40.9	0.0	6.7	11.6	30.4
11/10/2024 2:30	6.2	24.2	0.0	7.3	11.3	20.4	11/10/2024 2:30	7.3	41.1	0.0	6.7	11.6	34.6
11/10/2024 2:45	6.2	24.3	0.0	7.3	11.3	18.1	11/10/2024 2:45	7.3	40.9	0.0	6.7	11.7	36.4
11/10/2024 3:00	6.2	24.3	0.0	7.3	11.3	16.5	11/10/2024 3:00	7.3	40.9	0.0	6.7	11.7	37.0

11/10/2024 3:15	6.2	24.4	0.0	7.3	11.3	22.9	11/10/2024 3:15	7.3	41.2	0.0	6.7	11.7	32.7
11/10/2024 3:30	6.2	24.4	0.0	7.3	11.3	17.9	11/10/2024 3:30	7.3	41.2	0.0	6.7	11.7	35.8
11/10/2024 3:45	6.2	24.4	0.0	7.3	11.3	18.8	11/10/2024 3:45	7.3	41.3	0.0	6.7	11.7	32.7
11/10/2024 4:00	6.2	24.6	0.0	7.3	11.3	17.4	11/10/2024 4:00	7.3	41.5	0.0	6.7	11.7	33.3
11/10/2024 4:15	6.2	24.7	0.0	7.3	11.3	16.2	11/10/2024 4:15	7.2	41.4	0.0	6.7	11.7	32.9
11/10/2024 4:30	6.2	24.8	0.0	7.3	11.3	14.5	11/10/2024 4:30	7.2	41.6	0.0	6.7	11.7	33.3
11/10/2024 4:45	6.1	24.9	0.0	7.3	11.3	15.6	11/10/2024 4:45	7.2	41.7	0.0	6.8	11.7	34.7
11/10/2024 5:00	6.1	25.0	0.0	7.3	11.3	18.6	11/10/2024 5:00	7.2	41.5	0.0	6.8	11.7	35.0
11/10/2024 5:15	6.1	25.2	0.0	7.3	11.3	12.2	11/10/2024 5:15	7.2	41.8	0.0	6.7	11.7	34.7
11/10/2024 5:30	6.1	25.1	0.0	7.3	11.3	19.8	11/10/2024 5:30	7.2	41.6	0.0	6.7	11.7	35.4
11/10/2024 5:45	6.1	25.1	0.0	7.3	11.3	10.0	11/10/2024 5:45	7.2	41.7	0.0	6.7	11.7	31.4
11/10/2024 6:00	6.1	25.1	0.0	7.3	11.3	11.8	11/10/2024 6:00	7.2	41.5	0.0	6.7	11.7	38.1
11/10/2024 6:15	6.1	25.1	0.0	7.3	11.3	13.6	11/10/2024 6:15	7.1	41.6	0.0	6.7	11.7	32.1
11/10/2024 6:30	6.1	25.0	0.0	7.3	11.3	11.0	11/10/2024 6:30	7.1	41.6	0.0	6.7	11.7	33.3
11/10/2024 6:45	6.1	24.9	0.0	7.3	11.3	10.2	11/10/2024 6:45	7.1	41.5	0.0	6.7	11.7	34.3
11/10/2024 7:00	6.1	24.8	0.0	7.3	11.3	8.0	11/10/2024 7:00	7.1	41.6	0.0	6.7	11.7	33.0
11/10/2024 7:15	6.1	24.9	0.0	7.3	11.3	16.1	11/10/2024 7:15	7.1	42.2	0.0	6.7	11.7	32.7
11/10/2024 7:30	6.0	24.9	0.0	7.3	11.3	13.6	11/10/2024 7:30	7.1	41.8	0.0	6.7	11.7	35.3
11/10/2024 7:45	6.0	25.1	0.0	7.3	11.3	16.4	11/10/2024 7:45	7.1	41.8	0.0	6.7	11.7	72.7
11/10/2024 8:00	6.0	25.1	0.0	7.3	11.3	12.8	11/10/2024 8:00	7.1	40.8	0.0	6.7	11.7	58.5
11/10/2024 8:15	6.0	25.2	0.0	7.3	11.3	17.2	11/10/2024 8:15	7.1	42.2	0.0	6.7	11.7	31.6
11/10/2024 8:30	6.0	25.2	0.0	7.3	11.3	15.1	11/10/2024 8:30	7.1	42.6	0.0	6.7	11.7	28.0
11/10/2024 8:45	6.0	25.1	0.0	7.3	11.3	15.0	11/10/2024 8:45	7.1	42.7	0.0	6.7	11.7	28.1
11/10/2024 9:00	6.0	25.5	0.0	7.3	11.3	20.6	11/10/2024 9:00	7.1	42.9	0.0	6.7	11.7	29.7
11/10/2024 9:15	6.0	25.5	0.0	7.3	11.3	9.0	11/10/2024 9:15	7.1	43.0	0.0	6.7	11.7	28.6
11/10/2024 9:30	6.0	25.4	0.0	7.3	11.3	10.7	11/10/2024 9:30	7.1	43.4	0.0	6.7	11.7	28.3
11/10/2024 9:45	6.0	25.8	0.0	7.3	11.3	10.1	11/10/2024 9:45	7.1	43.3	0.0	6.7	11.7	32.0
11/10/2024 10:00	6.0	25.7	0.0	7.3	11.3	14.8	11/10/2024 10:00	7.1	43.7	0.0	6.7	11.7	30.9
11/10/2024 10:15	6.0	26.0	0.0	7.3	11.3	15.2	11/10/2024 10:15	7.1	43.8	0.0	6.7	11.7	33.0
11/10/2024 10:30	6.0	26.0	0.0	7.3	11.3	12.2	11/10/2024 10:30	7.1	44.0	0.0	6.7	11.7	29.9
11/10/2024 10:45	6.1	26.0	0.0	7.3	11.3	7.4	11/10/2024 10:45	7.1	43.9	0.0	6.7	11.7	27.8
11/10/2024 11:00	6.1	26.3	0.0	7.3	11.3	5.8	11/10/2024 11:00	7.2	43.7	0.0	6.7	11.7	31.8
11/10/2024 11:15	6.1	26.2	0.0	7.3	11.3	11.9	11/10/2024 11:15	7.2	44.1	0.0	6.7	11.7	32.3
11/10/2024 11:30	6.1	26.4	0.0	7.3	11.3	8.4	11/10/2024 11:30	7.2	44.9	0.0	6.8	11.7	33.8
11/10/2024 11:45	6.1	26.5	0.0	7.3	11.3	11.8	11/10/2024 11:45	7.2	45.3	0.0	6.8	11.7	29.2
11/10/2024 12:00	6.2	26.8	0.0	7.3	11.3	9.7	11/10/2024 12:00	7.2	44.7	0.0	6.8	11.7	32.9
11/10/2024 12:15	6.2	26.9	0.0	7.3	11.3	8.7	11/10/2024 12:15	7.2	44.4	0.0	6.8	11.7	34.7
11/10/2024 12:30	6.2	26.6	0.0	7.3	11.3	12.0	11/10/2024 12:30	7.2	44.5	0.0	6.8	11.7	27.5
11/10/2024 12:45	6.2	26.6	0.0	7.4	11.3	8.6	11/10/2024 12:45	7.3	44.1	0.0	6.8	11.7	32.7
11/10/2024 13:00	6.2	26.7	0.0	7.3	11.3	12.5	11/10/2024 13:00	7.3	44.4	0.0	6.8	11.7	32.9
11/10/2024 13:15	6.2	26.6	0.0	7.3	11.3	11.5	11/10/2024 13:15	7.3	44.8	0.0	6.8	11.7	30.2
11/10/2024 13:30	6.2	26.7	0.0	7.4	11.3	9.3	11/10/2024 13:30	7.3	45.2	0.0	6.8	11.7	30.7
11/10/2024 13:45	6.2	26.9	0.0	7.4	11.3	8.7	11/10/2024 13:45	7.3	45.0	0.0	6.8	11.7	32.4
11/10/2024 14:00	6.2	27.0	0.0	7.3	11.3	9.1	11/10/2024 14:00	7.3	45.0	0.0	6.8	11.7	31.7
11/10/2024 14:15	6.2	27.2	0.0	7.4	11.3	7.9	11/10/2024 14:15	7.4	46.0	0.0	6.8	11.7	28.7
11/10/2024 14:30	6.3	27.6	0.0	7.4	11.3	5.5	11/10/2024 14:30	7.4	45.3	0.0	6.8	11.7	31.5
11/10/2024 14:45	6.3	27.6	0.0	7.4	11.3	7.2	11/10/2024 14:45	7.4	46.0	0.0	6.8	11.7	26.9
11/10/2024 15:00	6.3	27.5	0.0	7.4	11.3	7.8	11/10/2024 15:00	7.4	46.0	0.0	6.8	11.7	26.5
11/10/2024 15:15	6.3	27.9	0.0	7.4	11.2	7.9	11/10/2024 15:15	7.4	46.5	0.0	6.8	11.7	31.9
11/10/2024 15:30	6.3	27.8	0.0	7.4	11.2	11.6	11/10/2024 15:30	7.4	47.5	0.0	6.7	11.6	29.1
11/10/2024 15:45	6.3	28.2	0.0	7.3	11.2	7.2	11/10/2024 15:45	7.4	48.5	0.0	6.7	11.6	27.8
11/10/2024 16:00	6.3	28.6	0.0	7.4	11.2	5.3	11/10/2024 16:00	7.4	48.2	0.0	6.6	11.6	26.7
11/10/2024 16:15	6.3	28.9	0.0	7.3	11.2	7.8	11/10/2024 16:15	7.4	48.3	0.0	6.6	11.6	29.2
11/10/2024 16:30	6.3	28.8	0.0	7.4	11.2	8.6	11/10/2024 16:30	7.4	48.4	0.0	6.7	11.6	35.5
11/10/2024 16:45	6.3	28.9	0.0	7.4	11.2	6.2	11/10/2024 16:45	7.4	48.5	0.0	6.7	11.6	31.4
11/10/2024 17:00	6.3	29.2	0.0	7.3	11.2	7.6	11/10/2024 17:00	7.4	48.0	0.0	6.7	11.6	30.3
11/10/2024 17:15	6.3	28.9	0.0	7.4	11.2	6.9	11/10/2024 17:15	7.4	48.6	0.0	6.7	11.6	33.2
11/10/2024 17:30	6.3	28.9	0.0	7.4	11.2	6.6	11/10/2024 17:30	7.4	47.8	0.0	6.7	11.6	29.5
11/10/2024 17:45	6.3	29.2	0.0	7.4	11.2	5.4	11/10/2024 17:45	7.4	48.1	0.0	6.8	11.5	28.2
11/10/2024 18:00	6.3	29.2	0.0	7.3	11.2	8.3	11/10/2024 18:00	7.4	47.6	0.0	6.8	11.6	32.2
11/10/2024 18:15	6.3	29.0	0.0	7.3	11.1	6.6	11/10/2024 18:15	7.4	47.9	0.0	6.8	11.5	27.6
11/10/2024 18:30	6.3	29.3	0.0	7.3	11.1	8.0	11/10/2024 18:30	7.4	47.9	0.0	6.8	11.5	29.2
11/10/2024 18:45	6.3	29.2	0.0	7.3	11.1	5.4	11/10/2024 18:45	7.4	48.2	0.0	6.8	11.5	31.0
11/10/2024 19:00	6.3	29.2	0.0	7.4	11.1	6.4	11/10/2024 19:00	7.4	48.0	0.0	6.8	11.5	31.5
11/10/2024 19:15	6.4	29.4	0.0	7.4	11.1	4.8	11/10/2024 19:15	7.4	47.9	0.0	6.8	11.5	32.1
11/10/2024 19:30	6.4	29.4	0.0	7.4	11.1	6.8	11/10/2024 19:30	7.5	48.0	0.0	6.8	11.5	34.0
11/10/2024 19:45	6.4	29.5	0.0	7.4	11.1	5.0	11/10/2024 19:45	7.5	48.6	0.0	6.8	11.5	26.0
11/10/2024 20:00	6.4	29.6	0.0	7.4	11.1	4.2	11/10/2024 20:00	7.5	48.8	0.0	6.8	11.5	29.3
11/10/2024 20:15	6.4	29.7	0.0	7.4	11.1	9.1	11/10/2024 20:15	7.5	48.8	0.0	6.8	11.5	29.5
11/10/2024 20:30	6.4	29.8	0.0	7.4	11.1	6.3	11/10/2024 20:30	7.5	48.6	0.0	6.8	11.5	28.9
11/10/2024 20:45	6.4	29.8	0.0	7.3	11.1	5.8	11/10/2024 20:45	7.5	48.8	0.0	6.8	11.5	27.5
11/10/2024 21:00	6.4	29.9	0.0	7.3	11.1	4.1	11/10/2024 21:00	7.5	49.4	0.0	6.8	11.5	27.9
11/10/2024 21:15	6.4	29.9	0.0	7.4	11.1	5.6	11/10/2024 21:15	7.5	49.0	0.0	6.8	11.5	27.0
11/10/2024 21:30	6.4	30.1	0.0	7.4	11.1	4.7	11/10/2024 21:30	7.5	49.2	0.0	6.8	11.5	27.8
11/10/2024 21:45	6.4	29.9	0.0	7.4	11.1	5.3	11/10/2024 21:45	7.5	49.5	0.0	6.8	11.5	31.3
11/10/2024 22:00	6.4	30.0	0.0	7.4	11.1	7.1	11/10/2024 22:00	7.5	49.2	0.0	6.8	11.5	28.9
11/10/2024 22:15	6.4	30.0	0.0	7.4	11.1	2.6	11/10/2024 22:15	7.5	49.0	0.0	6.8	11.5	26.8
11/10/2024 22:30	6.4	30.1	0.0	7.4	11.1	7.9	11/10/2024 22:30	7.5	49.3	0.0	6.8	11.5	27.4
11/10/2024 22:45	6.4	30.1	0.0	7.3	11.1	6.0	11/10/2024 22:45	7.5	49.4	0.0	6.8	11.5	27.2
11/10/2024 23:00	6.4	30.3	0.0	7.3	11.1	10.7	11/10/2024 23:00	7.5	49.3	0.0	6.8	11.5	32.5
11/10/2024 23:15	6.4	30.2	0.0	7.4	11.1	3.4	11/10/2024 23:15	7.5	49.2	0.0	6.8	11.5	27.7
11/10/2024 23:30	6.4	30.3	0.0	7.4	11.1	5.8	11/10/2024 23:30	7.5	49.2	0.0	6.8	11.5	35.3
11/10/2024 23:45	6.4	30.2	0.0	7.4	11.1	6.3	11/10/2024 23:45	7.5	49.1	0.0	6.8	11.5	28.9

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

Woodfibre Site Sample Analysis

TRITON	Sample ID					MLNG EGP					
	Lab ID	Reviewed and signed off by:			Fanched Shafei Ph.D., R.P.Bio.	VA24C0873-001	Sample or value notes	BCWQ FAL - Short Term	BCWQ FAL - Long Term	BCWQ MAL - Short Term	BCWQ MAL - Long Term
	Date Sampled					05-Nov-2024					
	Time Sampled					10:40					
Analyte	Units	FAL-ST [1,2]	MAL-ST [1]		MAL-LT [1,2]	Water N/A					
In Situ Parameters								Guideline notes			
pH (field)	pH units	6.5-9.0	6.5-9.0	7.0-8.7	7.0-8.7	7.27		If natural pH < 6.5, no statistically significant decrease from background. No restriction in mixing 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 molluscs and/or/juv.developmental).	
Temperature (field)	°C	Multiple guidelines dependent on water Short-term daily temperature < 15°C, or 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 > 15°C, or Max +/- from BKG 1°C	-	Max +/- from BKG 1°C	-	10.4		Guideline is species-dependent. Short-term daily temperature is 15°C or less, or Max +/- 1°C from optimum range for the most sensitive salmonid species present. Short-term daily temperature is 15°C or less, or Max +/- from BKG 1°C. Optimum range as shown in Table 4B of the BCWQG for aquatic life for each life history phase of the most sensitive salmonid species present. Mean Weekly Max Temperature guideline is 18°C. Short-term daily temperature guideline is 19°C for streams with unknown fish distribution or fish use. Short-term daily temperature guideline is 15°C where 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 °C guideline range	
Conductivity (field)	µS/cm	-	-	-	-	144					
Turbidity (field)	NTU	Varies with background, see note US1 (background) guideline = 8.0	Varies with background, see note US1 (background) guideline = 3.27 3-week discrete sampling average = 8.0 (SOP)	Varies with background, see note US1 (background) guideline = 8.0	Varies with background, see note US1 (background) guideline = 8.00 3-week discrete sampling average = 8.0 (SOP)	0.46		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 + 10 = 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 + 10 = 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	11.1		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 CaCO3) (Total)	mg/L	-	-	-	-	52.3					
Total Dissolved Solids	mg/L	-	-	-	-	66					
Total Suspended Solids	mg/L	Varies with background, see note US1 (background) guideline = 25	Varies with background, see note US1 (background) guideline = 8.00 3-week discrete sampling average = 12.94 (SOP)	Varies with background, see note US1 (background) guideline = 25	Varies with background, see note US1 (background) guideline = 8.00 3-week discrete sampling average = 12.94 (SOP)	< 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 + 10% value = DS guideline	Change from background of 5 mg/L @ one time for a duration of 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 25 mg/L at any one time for a 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 + 10% value = DS guideline	Change from background of 5 mg/L @ one time for a duration of 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 Organic Carbon (DOC)	mg/L	-	-	-	-	< 0.50		Long-term (30-day) median within 20% of background median *		Long-term (30-day) median within 20% of background median *	
Total Phenols	mg/L	0.05	-	-	-	-		Interim guideline		Interim guideline	
Total Alkalinity (CaCO3)	mg/L	-	Categorical	-	-	22.4			Guideline is for alkalinity (as CaCO3) and categorizes the sensitivity of a water body to acid inputs. Waters < 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 less sensitive.		
Total Sulfide (as S)	mg/L	-	-	-	-	< 0.0010					
Total Sulfide (un-ionized as H2S)	mg/L	0.002	-	-	-	< 0.0010			Working guideline		
Total Sulfide (as H2S)	mg/L	-	-	-	-	< 0.0016					
Anions and Nutrients											
Ammonia	mg/L ammonia-N	Varies with pH and temperature. See note. Guideline = 22.2	Varies with pH and temperature. See note. Guideline = 1.63	Varies with pH and temperature. See note. Guideline = 131	Varies with pH, temperature and salinity. See note. Guideline = 20.0	0.0335		Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 2FO in BC WQG for guideline values.	Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 2TC in BC WQG for guideline values.	Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 2TI in BC WQG for guideline values.	Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 2TE in BC WQG for guideline values.
Bromide	mg/L	-	-	-	-	< 0.050					
Chloride	mg/L	600	150	+/- 10% from BKG	+/- 10% from BKG	1				Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural	Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more
Fluoride	mg/L	Varies with hardness: US1 (background) guideline = 0.408	-	1.5	-	0.191		Guideline has interim status. Guideline is calculated with the following equation: Guideline = [-0.0173 x ln(Hardness)] + 0.2572			
Nitrate (as N)	mg/L	32.8	3	-	3.7	0.02					
Nitrite (as N)	mg/L	Varies with chloride. Table 27B, see note. US1 (background) guideline = 0.06	Varies with chloride. Table 27B, see note. US1 (background) guideline = 0.02	-	-	< 0.0010		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	-	-	-	-	-					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	-			Guideline is for lakes, refer to BCWQ guideline for nutrients and algae for more information. Guideline does not apply to site.		
Sulfate (as SO4)	mg/L	-	Varies with hardness. See note. US1 (background) guideline = 128	-	-	4.64			Guideline for freshwater 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 US1 (background) guideline = 0.123 3-week discrete sampling averages = 0.823 (SOP), 0.118 (US), 0.207 (DS)	-	-	0.0160			Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated with the following equation: Guideline = (2^(0.86[ln(pH)]-1.24[ln(DOC)] + (2.255 * ln(Hardness)) + (1.984 * pH) + (-0.298 * ln(Hardness) * pH))-0.0962)/1000 If Hardness or DOC is below the hardness range, the minimum hardness or DOC will be applied in the calculation.		
Antimony (Sb)-Total	mg/L	0.25	0.074	-	-	0.00023					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.00175					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.00258			Working guideline status		
Beryllium (Be)-Total	mg/L	-	0.00013	-	0.100	< 0.00010			Working guideline status		Working guideline status
Bismuth (Bi)-Total	mg/L	-	-	-	-	< 0.000050					
Boron (B)-Total	mg/L	-	1.2	-	1.2	0.01					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	< 0.000050					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	16.4					
Cesium (Cs)-Total	mg/L	-	-	-	-	< 0.000010					
Chromium (Cr) - Total	mg/L	-	-	-	-	< 0.00050					
Chromium (Cr(III))-Total	mg/L	-	0.0089	-	0.056	< 0.00050			Working guideline status		Working guideline status
Chromium (Cr(VI))-Total	mg/L	-	0.0040	-	0.0016	< 0.00050			Working guideline status		Working guideline status
Cobalt (Co)-Total	mg/L	0.11	0.004	-	-	< 0.00010					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002 3-week discrete sampling averages = 0.00198 (SOP), 0.00178 (US), 0.00122 (DS)	0.00177					
Iron (Fe)-Total	mg/L	1	-	-	0.302	0.013					
Lead (Pb)-Total	mg/L	-	-	0.14	0.002 3-week discrete sampling averages = 0.00194 (SOP), 0.000001 (US), 0.000001 (DS)	0.000460					
Lithium (Li)-Total	mg/L	-	-	-	-	0.0020					
Magnesium (Mg)-Total	mg/L	-	-	-	-	5.603					
Manganese (Mn)-Total	mg/L	Varies with hardness US1 (background) guideline = 0.82	Varies with hardness US1 (background) guideline = 0.77 3-week discrete sampling averages = 0.6557 (SOP), 0.0033 (US), 0.0035 (DS)	-	-	0.00344		Guideline varies with hardness. The guideline is calculated using the following equation: Guideline = (0.059 * Hardness + 0.002) Guideline applies to samples with hardness 25-209 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 = (0.059 * Hardness + 0.54) Guideline applies to samples with hardness 37-450 mg/L. Lowest value for guideline is 0.91 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 US1 (background) guideline = N/A	-	-	< 0.0000030			When Meleg ≥ 0.5% of total Hg, guideline is equal to 0.02 mg/L Guideline = 0.1[Meg/total Hg]. When Meleg ≤ 0.5% of total Hg, guideline is equal to 0.03 mg/L		
Molybdenum (Mo)-Total	mg/L	46	7.6	-	-	0.0143					
Nickel (Ni)-Total	mg/L	-	-	-	0.008	< 0.00050					Working guideline status
Phosphorus (P)-Total	mg/L	-	0.005 to 0.015	-	-	< 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	-	-	-	-	1.35					
Selenium (Se)-Total	mg/L	-	-	-	-	0.00246					
Silicon (Si)-Total	mg/L	-	0.002	-	0.002	0.00938			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 guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidelines and sampling. Reference
Silver (Ag)-Total	mg/L	Varies with hardness, see note US1 (background) guideline = 0.0001	Varies with hardness, see note US1 (background) guideline = 0.00005	0.003	0.0015	< 0.000010		Varies with hardness Guideline ranges: Hardness ≤ 100: 0.0001 Hardness > 100: 0.0002	Varies with hardness Guideline ranges: Hardness ≤ 100: 0.00002 Hardness > 100: 0.00003		Guideline applies to open coast and estuaries. Guideline is applicable to the EGP site
Sodium (Na)-Total	mg/L	-	-	-	-	3.06					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0417					
Sulfur (S)-Total	mg/L	-	-	-	-	1.57					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.00003 3-week discrete sampling averages = 0.000013 (SOP), <0.000018 (US), <0.000024 (DS)	-	-	0.000011			30-day average, site-specific objective for the lower Columbia River, BC. Guideline is for reference only and does not apply to the EGP site		
Thorium (Th)-Total	mg/L	-	-	-	-	< 0.00010					
Tin (Sn)-Total	mg/L	-	-	-	-	< 0.00010					
Titanium (Ti)-Total	mg/L	-	-	-	-	0.00038					
Tungsten (W)-Total	mg/L	-	-	-	-	0.00025					
Uranium (U)-Total	mg/L	0.0166	0.0676	-	-	0.00078			Working guideline status		
Vanadium (V)-Total	mg/L	-	0.06	-	0.005	< 0.00050					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	0.010 3-week discrete sampling averages = 0.0162 (SOP), 0.0003 (US), 0.0007 (DS)	< 0.0030					
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00020					
Dissolved Metals											
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0074					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	0.00020					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00150					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.0220					
Beryllium (Be)-Dissolved	mg/L	-	-	-	-	< 0.000010					
Bismuth (Bi)-Dissolved	mg/L	-	-	-	-	< 0.000050					
Boron (B)-Dissolved	mg/L	-	-	-	-	< 0.010					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note US1 (background) guideline = 0.000035	Varies with hardness, see note US1 (background) guideline = 0.000023 3-week discrete sampling averages = 0.0000307 (SOP), <0.000018 (US), <0.000024 (DS)	-	-	< 0.0000109		Guideline is hardness dependent. Guideline is applicable to water hardness between 7.5 and 450 mg/L. Guideline is calculated with the following formula: Guideline = (10^(0.86[log(hardness)]-3.2))/1000 Lowest value for guideline is 0.00004 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 288 mg/L. Guideline is calculated with the following formula: Guideline = (10^(0.86[log(hardness)]-3.2))/1000 Lowest value for guideline 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	-	-	19.7			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 waters(class 2 - 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					
Chromium (Cr)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Chromium (Cr(III))-Dissolved	mg/L	-	-	-	-	-					
Chromium (Cr(VI))-Dissolved	mg/L	-	-	-	-	-					
Cobalt (Co)-Dissolved	mg/L	-	-	-	-	< 0.00010					
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note US1 (background) guideline = 0.002	Guideline varies with other parameters, see note US1 (background) guideline = 0.0007 3-week discrete sampling averages = 0.00153 (SOP), 0.00166 (US), 0.00167 (DS)	-	-	0.002		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	-	-	-	< 0.010					
Lead (Pb)-Dissolved	mg/L	-	Guideline varies with DOC and hardness Guideline: 0.00024 3-week discrete sampling averages = 0.00038 (SOP), <0.00005 (US), <0.00005 (DS)	-	-	0.000092			Guideline varies with DOC and hardness, refer to BC Water Quality Guidelines for more information. Guideline uses equation: $e^{(1.46[\ln(\text{hardness})]-4.384[\ln(\text{hardness})]^2+0.4354[\ln(\text{hardness})]^3-0.0334[\ln(\text{hardness})]^4-2.104)}$ where DOC range is 0.5-312 mg/L and hardness range is 4.7-511 mg/L		
Lithium (Li)-Dissolved	mg/L	-	-	-	-	0.0022					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	1					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00339					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000030					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.0141					
Nickel (Ni)-Dissolved	mg/L	Guideline varies with pH, temperature, DOC, and hardness US1 (background) guideline: 0.0165	Guideline varies with pH, temperature, DOC, and hardness US1 (background) guideline: 0.00148 3-week discrete sampling averages = <0.0005 (SOP), 0.001132 (US), 0.00067 (DS)	-	-	< 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					
Potassium (K)-Dissolved	mg/L	-	-	-	-	1.4					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00361					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	0.00061					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	0.88					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000005					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	3.09					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0408					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	1.59					
Tellurium (Te)-Dissolved	mg/L	-	-	-	-	< 0.00020					
Thallium (Tl)-Dissolved	mg/L	-	-	-	-	< 0.0000010					
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	-	-	-	-	< 0.00025					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.00078					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness US1 (background) guideline = 0.010	Varies with pH, DOC, hardness US1 (background) guideline = 0.0062 3-week discrete sampling average = 0.0151 (SOP), 0.0057 (US), 0.0063 (DS)	-	-	0.0028		Guideline varies with DOC and hardness. Guideline is calculated using the following formula: Guideline = (e^(0.8[ln(hardness)] + 0.2[ln(hardness)]^2 - 0.51[ln(DOC)] + 0.26[ln(DOC)]^2 + 4.62))/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 = (0.9[ln(pH)] - 1.29[ln(hardness)] - 0.41[ln(DOC)] + 0.28[ln(DOC)]^2 + 4.82))/1000 Guideline only applies to water with pH between 6.5 and 9.13, DOC between 0.3 and 23 mg/L, and hardness between 23.4 and 286 mg/L. If pH, DOC or hardness is below the range, the minimum pH, minimum hardness or DOC will be applied in the calculation.		
Zirconium (Zr)-Dissolved	mg/L	-	-	-	-	< 0.00020					
Volatile Organic Compounds											
Chlorobenzene	unit	-	-	-	-	< 0.50					
Chloroethylene	unit	-	-	-	-	< 0.5					
Dichlorobenzenes, 1,2-	µg/L	-	0.7	-	42	< 0.50			Working guideline status		Working guideline status
Dichlorobenzenes, 1,3-	µg/L	-	150	-	-	< 0.50			Working guideline status		
Dichlorobenzenes, 1,4-	µg/L	-	26	-	-	< 0.50			Working guideline status		
Dichloropropane, 1,3-	µg/L	-	-	-	-	< 0.50					
Dichloropropylene, cis-trans-1,3-	unit	-	-	-	-	< 0.75					
Dichloropropylene, cis-1,3-	unit	-	-	-	-	< 0.50					
Tetrachloroethane, 1,1,1,2-	µg/L	-	-	-	-	< 0.50					
Tetrachloroethane, 1,1,2,2-	unit	-	-	-	-	< 0.50					
Trichloroethane, 1,1,2-	unit	-	-	-	-	< 0.50					
Trichlorofluoromethane	µg/L	-	-	-	-	< 0.50					
Carbon tetrachloride	unit	-	-	-	-	< 0.50					
Chloroethane	unit	-	-	-	-	< 0.50					
Dichloroethane, 1,1-	µg/L	-	-	-	-	< 0.50					
Dichloroethane, 1,2-	unit	-	100	-	-	< 0.50			Working guideline status		
Dichloroethylene, 1,1-	unit	-	-	-	-	< 0.50					
Dichloroethylene, cis-1,2-	µg/L	-	-	-	-	< 0.50					
Dichloroethylene, trans-1,2-	µg/L	-	-	-	-	< 0.50					
Dichloromethane	unit	-	98.1	-	-	< 0.5			Working guideline status		
Dichloropropene, trans-1,3-	µg/L	-	-	-	-	< 0.50					
Tetrachloroethylene	unit	-	110	-	-	< 0.50			Working guideline status		
Trichloroethane, 1,1,1-	unit	-	-	-	-	< 0.50					
Trichloroethylene	unit	-	21	-	-	< 0.50			Working guideline status		
Vinyl chloride	unit	-	-	-	-	< 0.40					
Benzene	unit	-	40	-	110	< 0.50			Interim guideline status		Interim guideline status
Ethylbenzene	µg/L	-	200	-	250	< 0.50			Interim guideline status		Interim guideline status
Methyl-tert-butyl ether (MTBE)	µg/L	3400	-	460	-	< 0.50					
Styrene	unit	-	72	-	-	< 0.50			Working guideline status		
Toluene	unit	-	0.5	-	-	< 0.40					
Xylene, m-o-	µg/L	-	-	-	-	< 0.50					
Xylene, m-	unit	-	-	-	-	< 0.50					
Xylenes, total	µg/L	-	30	-	-	< 0.50					
Bromodichloromethane	unit	-	-	-	-	< 0.50					
Bromoform	unit	-	-	-	-	< 0.50					
Chloroform	unit	-	1.8	-	-	< 0.50			Working guideline status		
Dibromochloromethane	µg/L	-	-	-	-	< 0.50					
Hydrocarbons											
EPH (C10-C19)	unit	-	-	-	-	< 200					
EPH (C19-C32)	unit	-	-	-	-	< 200					
VPH (C4-C10)	unit	-	-	-	-	< 100					
HPHw	unit	-	-	-	-	< 100					
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	µg/L	-	6	-	6	< 0.010					
Acenaphthylene	unit	-	-	-	-	< 0.010					
Acridine	µg/L	-	-	-	-	< 0.010					
Anthracene	µg/L	0.1	4	-	-	< 0.010					
Benz(a)anthracene	unit	0.1	0.1	-	-	< 0.010					
Benzo(a)pyrene	µg/L	0.01	0.01	-	0.01	< 0.0050					
Benzo(b+j)fluoranthene	µg/L	-	-	-	-	< 0.010					
Benzo(b+k)fluoranthene	µg/L	-	-	-	-	< 0.010					
Benzo(g,h,i)perylene	µg/L	-	-	-	-	< 0.010					
Benzo(k)fluoranthene	µg/L	-	-	-	-	< 0.010					
Chrysene	unit	-	-	-	0.1	< 0.010					
Dibenz(a,h)anthracene	µg/L	-	-	-	-	< 0.0050					
Fluoranthene	µg/L	0.2	4	-	-	< 0.010		Guideline is for phototoxic effects			
Fluorene	unit	-	120	-	-	< 0.010					
Indeno(1,2,3-c,d)pyrene	µg/L	-	-	-	-	< 0.010					
Methylnaphthalene, 1-	µg/L	-	-	-	1	< 0.010					Guideline is for total methylated naphthalene and is considered here as reference
Methylnaphthalene, 2-	µg/L	-	-	-	1	< 0.010					Guideline is for total methylated naphthalene and is considered here as reference
Naphthalene	unit	-	1	-	1	< 0.050					
Phenanthrene	unit	-	0.3	-	-	< 0.020					
Pyrene	µg/L	0.02	-	-	-	< 0.010					
Quinoline	unit	-	3.4	-	-	< 0.050		Working guideline status			
Glycols											
Ethylene glycol	mg/L	-	150	-	-	< 5.0					
Propylene glycol, 1,2-	mg/L	-	220	-	-	< 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 both FAL and MAL guidelines | Exceeds MAL Short term Guideline

[1] "BC MOE/CCME 2003 BC Water Quality Guidelines for the Protection of Aquatic Life, Wildlife & Agriculture. Accessed from: www.env.gov.bc.ca/wat/wq/BCguidelines/approval_history.html#WQG"
[2] BC MOE/CCME 2021 BC Working Water Quality Guidelines for the Protection of Aquatic Life, Wildlife & Agriculture. Accessed from: https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/water-quality-guidelines/approved-water-quality-guidelines

Note that a long-term (30-day) median is used to account for chronic exposure 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).

Background temperature range: 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 in Calculate Guidelines

Analyte	Units	Measurement method	Values MLNG EGP	Values MLNG US 21-Oct-2024
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations	7.27	7.42
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations	10.4	10.9
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations	0.46	1.76
Hardness (as CaCO3) (field)	mg/L	Laboratory tested hardness from water sample collected at the same time of sampling used in guideline calculations	52.3	4.74
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested total dissolved organic carbon tested at the lab used in guideline calculations	0.5	0.5
Water Alkalinity (CaCO3)	mg/L	Laboratory tested alkalinity used in calculations	22.4	4.8
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations	1	1.02
Total Dissolved Solids	mg/L	Laboratory tested total suspended solids tested at the lab used in guideline calculations	-	-

RESULTS OF RAINBOW TROUT LC50 MULTI-CONCENTRATION

Client : 4800 Triton Environmental Consultants Ltd., Vancouver Job Number: C490057

Client Project Name & Number: 11964-Task 40-phase 3C-4C

Test Result:

96 hrs LC50 % vol/vol (95% CL): >100% (N/A) Statistical Method: Visual

Sample Name : WLNG EOP

Description:	Clear and colourless			Sample Number:	CZQ304-01
Sample Collected:	Nov 05, 2024 10:40 AM	Sampling Method :	N/A	Site Collection:	N/A
Sample Collected By:	N/A	Volume Received:	4 x ECO10	Avg Temp Arrival:	7 °C Storage: 2-6°C
Sample Received:	Nov 05, 2024 04:30 PM	pH:	7.7	Dissolved Oxygen:	10.8 mg/L
Analysis Start :	Nov 06, 2024 02:15 PM	Temperature :	15 °C	Sample Conductance:	123 µS/cm

Concentration	Temperature (°C)	Temperature (°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	pH	pH	Conductivity (uS/cm)	Mortality (#)	Mortality (%)	Atypical Behaviour (#)
% vol/vol	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	Initial	96 hrs	96 hrs	96 hrs
0	15	15	10.4	9.5	7.6	7.4	58	0	0	0
6.25	15	15	10.4	9.7	7.7	7.5	62	0	0	0
12.5	15	15	10.4	9.7	7.7	7.5	66	0	0	0
25	15	15	10.4	9.7	7.7	7.5	74	0	0	0
50	15	15	10.4	9.7	7.8	7.7	92	0	0	0
100	15	15	10.4	9.8	7.8	7.8	123	0	0	0

Comments : All fish appeared and behaved normally at 24 hours, 48 hours, 72 hours, and 96 hours into testing.

Culture/Control/Dilution Water Burnaby Municipal Dechlorinated Water

Hardness: 22 mg/L $CaCO_3$ Other parameters available on request.

Test Conditions Test concentration : 0,6.25,12.5,25,50,100 (% vol/vol)

Organisms per Vessel :	10	Test Temperature :	15 ± 1 °C	Solution Depth :	>15 cm
Total # of Organisms Used :	60	Pre-aeration Time :	120 min.	Rate of Aeration	6.5±1 mL/ (min*L)
Test Volume :	18 L	Vessel Volume :	20L	Test pH Adjusted:	No
Loading Density :	0.3 g/L	Photoperiod :	16:8 (light: dark)		

Test Organism : Rainbow Trout *(Oncorhynchus mykiss)* Source : Aqua Farm

Culture Temperature :	15 ± 2 °C	Weight (Mean) +- SD :	0.5 ± 0.1 g	Length (Mean) +- SD :	4.03 ± 0.34 cm
Culture Water Renewal :	≥ 1L/min/kg fish	Weight (Range) :	0.2 – 0.7 g	Length (Range) :	3.30 – 4.40 cm
Culture Photoperiod :	16:8 (light: dark)			% Mortality within 7 days :	0%
Feeding rate and frequency :	daily: 1-5% biomass of trout.			Acclimation Time:	>14 days

Reference chemical: Zinc Test Date: Oct 21, 2024

Test Endpoint 96 hrs LC50 (95% confidence interval) : 0.14 (0.10, 0.18)mg/L Statistical Method : Probit

Historical Mean LC50 (warning limits) : 0.19 (0.13, 0.28) mg/L Concentration : 0,0.04,0.08,0.16,0.32,0.64 mg/L

Test Method BV Lab's BBY2SOP-00004 is based on the latest version of EPS 1/RM9 and EPS 1 /RM13.

Method Deviations : None.

Note: The results contained in this report refer only to the testing of the sample submitted. Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation, including the toxicity parameters reported herein. The conductivity, dissolved oxygen and pH data contained within the toxicity report are provided for information purposes and are not individually accredited parameters. This report may not be reproduced, except in its entirety, without the written approval of the laboratory.

Analyst : Donald Lai, Melanie Mazziotti, Ryan Colman

Verified By : Kimberly Tamaki, Scientist, Ecotoxicology Date: Nov 13, 2024 11:25 AM

Woodfibre Site Sample Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order	: **VA24C9972**		
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 05-Nov-2024 17:30
PO	: 11964-Task 40-Phase3C-4C	Date Analysis Commenced	: 06-Nov-2024
C-O-C number	: ----	Issue Date	: 14-Nov-2024 12:57
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
- 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*
	Analyst	Metals, Burnaby, British Columbia
	Technical Specialist	Metals, Waterloo, Ontario
	Department Manager - Metals	Metals, Burnaby, British Columbia
	Supervisor - Water Chemistry	Organics, Burnaby, British Columbia
	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
	Senior Analyst	Inorganics, Waterloo, Ontario
	Senior Analyst	Metals, Waterloo, Ontario
		Metals, Burnaby, British Columbia
	Account Manager Assistant	Administration, 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*
mg/L	milligrams per litre
µg/L	micrograms per litre
°C	degrees celsius
pH units	pH units
µS/cm	microsiemens per centimetre
-	no units

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

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	WLNG EOP Duplicate	----	----	----
					Client sampling date / time	05-Nov-2024 10:40	05-Nov-2024 10:40	----	----	----
						VA24C9972-001	VA24C9972-002	----	----	----
						Result	Result	----	----	----
Field Tests										
Conductivity, field	----	EF001/VA	0.10	µS/cm		144.00	144.00	----	----	----
pH, field	----	EF001/VA	0.10	pH units		7.27	7.27	----	----	----
Temperature, field	----	EF001/VA	0.10	°C		10.4	10.4	----	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		53.3	53.0	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		52.3	53.6	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		86	84	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		<3.0	<3.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		55.4	55.8	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.0225	0.0211	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L		1.00	1.00	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		0.191	0.190	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		0.0200	0.0195	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L		<0.0010	<0.0010	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		4.64	4.63	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		<0.50	<0.50	----	----	----
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L		<0.0015	<0.0015	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	WLNG EOP Duplicate	----	----	----
					Client sampling date / time	05-Nov-2024 10:40	05-Nov-2024 10:40	----	----	----
						VA24C9972-001	VA24C9972-002	----	----	----
						Result	Result	----	----	----
Total Sulfides										
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		0.0193	0.0197	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		0.00023	0.00023	----	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00175	0.00174	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00258	0.00249	----	----	----
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		<0.0000050	<0.0000050	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		19.4	19.9	----	----	----
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		0.00177	0.00181	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.013	0.013	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000495	0.000553	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0023	0.0023	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		0.933	0.948	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.00344	0.00345	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	WLNG EOP Duplicate	----	----	----
					Client sampling date / time	05-Nov-2024 10:40	05-Nov-2024 10:40	----	----	----
						VA24C9972-001	VA24C9972-002	----	----	----
						Result	Result	----	----	----
Total Metals										
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		0.0143	0.0139	----	----	----
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		1.35	1.36	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00296	0.00286	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		0.000080	0.000082	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		5.74	5.90	----	----	----
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		3.28	3.37	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0417	0.0399	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		1.57	1.73	----	----	----
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		0.000011	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		0.00035	0.00034	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		0.00025	0.00027	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.00276	0.00273	----	----	----
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	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	WLNG EOP Duplicate	----	----	----
					Client sampling date / time	05-Nov-2024 10:40	05-Nov-2024 10:40	----	----	----
						VA24C9972-001	VA24C9972-002	----	----	----
						Result	Result	----	----	----
Total Metals										
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		0.0074	0.0075	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		0.00025	0.00025	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00181	0.00180	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00250	0.00237	----	----	----
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		<0.0000050	<0.0000050	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		19.7	19.6	----	----	----
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		0.00230	0.00232	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		<0.010	<0.010	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		0.000592	0.000585	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		0.0022	0.0023	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		1.00	0.974	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00355	0.00358	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	WLNG EOP Duplicate	----	----	----
					Client sampling date / time	05-Nov-2024 10:40	05-Nov-2024 10:40	----	----	----
						VA24C9972-001	VA24C9972-002	----	----	----
						Result	Result	----	----	----
Dissolved Metals										
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.0141	0.0142	----	----	----
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		1.40	1.37	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00302	0.00308	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		0.000061	0.000069	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		5.88	5.96	----	----	----
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		3.29	3.29	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0408	0.0394	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		1.59	1.58	----	----	----
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		0.00025	0.00025	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.00278	0.00270	----	----	----
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		0.0028	0.0026	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)			Client sample ID		WLNG EOP	WLNG EOP Duplicate	----	----	----
			Client sampling date / time		05-Nov-2024 10:40	05-Nov-2024 10:40	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24C9972-001	VA24C9972-002	----	----	----
					Result	Result	----	----	----
Dissolved Metals									
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/WT	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/WT	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Volatile Organic Compounds									
Chlorobenzene	108-90-7	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----
Chloromethane	74-87-3	E611C/VA	5.0	µg/L	<5.0	<5.0	----	----	----
Dichlorobenzene, 1,2-	95-50-1	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----
Dichlorobenzene, 1,3-	541-73-1	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----
Dichlorobenzene, 1,4-	106-46-7	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----
Dichloropropane, 1,2-	78-87-5	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----
Dichloropropylene, cis+trans-1,3-	542-75-6	E611C/VA	0.75	µg/L	<0.75	<0.75	----	----	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C/VA	0.20	µg/L	<0.20	<0.20	----	----	----
Trichloroethane, 1,1,2-	79-00-5	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----
Trichlorofluoromethane	75-69-4	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----
Volatile Organic Compounds [Drycleaning]									
Carbon tetrachloride	56-23-5	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----
Chloroethane	75-00-3	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	WLNG EOP Duplicate	----	----	----
					Client sampling date / time	05-Nov-2024 10:40	05-Nov-2024 10:40	----	----	----
						VA24C9972-001	VA24C9972-002	----	----	----
						Result	Result	----	----	----
Volatile Organic Compounds [Drycleaning]										
Dichloroethane, 1,1-	75-34-3	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Dichloroethane, 1,2-	107-06-2	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Dichloroethylene, 1,1-	75-35-4	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Dichloroethylene, cis-1,2-	156-59-2	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Dichloroethylene, trans-1,2-	156-60-5	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Dichloromethane	75-09-2	E611C/VA	1.0	µg/L		<1.0	<1.0	----	----	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Tetrachloroethylene	127-18-4	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Trichloroethane, 1,1,1-	71-55-6	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Trichloroethylene	79-01-6	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Vinyl chloride	75-01-4	E611C/VA	0.40	µg/L		<0.40	<0.40	----	----	----
Volatile Organic Compounds [Fuels]										
Benzene	71-43-2	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Ethylbenzene	100-41-4	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Styrene	100-42-5	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Toluene	108-88-3	E611C/VA	0.40	µg/L		<0.40	<0.40	----	----	----
Xylene, m+p-	179601-23-1	E611C/VA	0.40	µg/L		<0.40	<0.40	----	----	----
Xylene, o-	95-47-6	E611C/VA	0.30	µg/L		<0.30	<0.30	----	----	----
Xylenes, total	1330-20-7	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	WLNG EOP Duplicate	----	----	----
					Client sampling date / time	05-Nov-2024 10:40	05-Nov-2024 10:40	----	----	----
						VA24C9972-001	VA24C9972-002	----	----	----
						Result	Result	----	----	----
Volatile Organic Compounds [THMs]										
Bromodichloromethane	75-27-4	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Bromoform	75-25-2	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Chloroform	67-66-3	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Dibromochloromethane	124-48-1	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Hydrocarbons										
EPH (C10-C19)	----	E601A/VA	250	µg/L		<250	<250	----	----	----
EPH (C19-C32)	----	E601A/VA	250	µg/L		<250	<250	----	----	----
VHw (C6-C10)	----	E581.VH+F1/VA	100	µg/L		<100	<100	----	----	----
HEPHw	----	EC600A/VA	250	µg/L		<250	<250	----	----	----
LEPHw	----	EC600A/VA	250	µg/L		<250	<250	----	----	----
VPHw	----	EC580A/VA	100	µg/L		<100	<100	----	----	----
Hydrocarbons Surrogates										
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%		88.7	98.0	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%		86.2	101	----	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%		94.7	95.1	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611C/VA	1.0	%		101	101	----	----	----
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	83-32-9	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Acenaphthylene	208-96-8	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Acridine	260-94-6	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	WLNG EOP Duplicate	----	----	----
					Client sampling date / time	05-Nov-2024 10:40	05-Nov-2024 10:40	----	----	----
						VA24C9972-001	VA24C9972-002	----	----	----
						Result	Result	----	----	----
Polycyclic Aromatic Hydrocarbons										
Anthracene	120-12-7	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Benz(a)anthracene	56-55-3	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Benzo(a)pyrene	50-32-8	E641A/VA	0.0050	µg/L		<0.0050	<0.0050	----	----	----
Benzo(b+j)fluoranthene	n/a	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Benzo(b+j+k)fluoranthene	n/a	E641A/VA	0.015	µg/L		<0.015	<0.015	----	----	----
Benzo(g,h,i)perylene	191-24-2	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Benzo(k)fluoranthene	207-08-9	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Chrysene	218-01-9	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Dibenz(a,h)anthracene	53-70-3	E641A/VA	0.0050	µg/L		<0.0050	<0.0050	----	----	----
Fluoranthene	206-44-0	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Fluorene	86-73-7	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Methylnaphthalene, 1-	90-12-0	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Methylnaphthalene, 2-	91-57-6	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Naphthalene	91-20-3	E641A/VA	0.050	µg/L		<0.050	<0.050	----	----	----
Phenanthrene	85-01-8	E641A/VA	0.020	µg/L		<0.020	<0.020	----	----	----
Pyrene	129-00-0	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Quinoline	91-22-5	E641A/VA	0.050	µg/L		<0.050	<0.050	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A/VA	0.1	%		72.2	86.0	----	----	----
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%		94.3	110	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	WLNG EOP Duplicate	----	----	----
					Client sampling date / time	05-Nov-2024 10:40	05-Nov-2024 10:40	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C9972-001	VA24C9972-002	----	----	----
						Result	Result	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%		94.3	108	----	----	----
Glycols										
Diethylene glycol	111-46-6	E680E/VA	5.0	mg/L		<5.0	<5.0	----	----	----
Ethylene glycol	107-21-1	E680E/VA	5.0	mg/L		<5.0	<5.0	----	----	----
Propylene glycol, 1,2-	57-55-6	E680E/VA	5.0	mg/L		<5.0	<5.0	----	----	----
Triethylene glycol	112-27-6	E680E/VA	5.0	mg/L		<5.0	<5.0	----	----	----
Glycols, total (EG+DEG+PG)	----	E680E/VA	10	mg/L		<10	<10	----	----	----
Glycols Surrogates										
Propanediol, 1,3-	504-63-2	E680E/VA	1.0	%		115	128	----	----	----

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

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24C9972**	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	: 05-Nov-2024 17:30
PO	: 11964-Task 40-Phase3C-4C	Issue Date	: 14-Nov-2024 12:56
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
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times 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 EOP	E298	05-Nov-2024	07-Nov-2024	28 days	2 days	✓	10-Nov-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG EOP Duplicate	E298	05-Nov-2024	07-Nov-2024	28 days	2 days	✓	10-Nov-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG EOP	E235.Br-L	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG EOP Duplicate	E235.Br-L	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG EOP	E235.Cl	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG EOP Duplicate	E235.Cl	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG EOP	E235.F	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-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 : Fluoride in Water by IC										
HDPE										
WLNG EOP Duplicate	E235.F	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
WLNG EOP	E235.NO3-L	05-Nov-2024	06-Nov-2024	3 days	1 days	✓	06-Nov-2024	3 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
WLNG EOP Duplicate	E235.NO3-L	05-Nov-2024	06-Nov-2024	3 days	1 days	✓	06-Nov-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
WLNG EOP	E235.NO2-L	05-Nov-2024	06-Nov-2024	3 days	1 days	✓	06-Nov-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
WLNG EOP Duplicate	E235.NO2-L	05-Nov-2024	06-Nov-2024	3 days	1 days	✓	06-Nov-2024	3 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
WLNG EOP	E235.SO4	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
WLNG EOP Duplicate	E235.SO4	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-2024	28 days	1 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
WLNG EOP	E509	05-Nov-2024	09-Nov-2024	28 days	4 days	✓	09-Nov-2024	28 days	4 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
WLNG EOP Duplicate	E509	05-Nov-2024	09-Nov-2024	28 days	4 days	✓	09-Nov-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
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
WLNG EOP	E421	05-Nov-2024	08-Nov-2024	180 days	3 days	✓	12-Nov-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
WLNG EOP Duplicate	E421	05-Nov-2024	08-Nov-2024	180 days	3 days	✓	12-Nov-2024	180 days	7 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Amber glass dissolved (sulfuric acid)										
WLNG EOP	EF001	05-Nov-2024	----	----	----		06-Nov-2024	----	1 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 Duplicate	EF001	05-Nov-2024	----	----	----		06-Nov-2024	----	1 days	
Glycols : Glycols (4 analytes) by GC-FID										
Glass vial										
WLNG EOP	E680E	05-Nov-2024	06-Nov-2024	7 days	1 days	✓	06-Nov-2024	40 days	0 days	✓
Glycols : Glycols (4 analytes) by GC-FID										
Glass vial										
WLNG EOP Duplicate	E680E	05-Nov-2024	06-Nov-2024	7 days	1 days	✓	06-Nov-2024	40 days	0 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate)										
WLNG EOP	E601A	05-Nov-2024	13-Nov-2024	14 days	8 days	✓	13-Nov-2024	40 days	0 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate)										
WLNG EOP Duplicate	E601A	05-Nov-2024	13-Nov-2024	14 days	8 days	✓	13-Nov-2024	40 days	0 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate)										
WLNG EOP	E581.VH+F1	05-Nov-2024	12-Nov-2024	14 days	7 days	✓	13-Nov-2024	14 days	8 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
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate)										
WLNG EOP Duplicate	E581.VH+F1	05-Nov-2024	12-Nov-2024	14 days	7 days	✓	13-Nov-2024	14 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG EOP	E358-L	05-Nov-2024	07-Nov-2024	28 days	2 days	✓	09-Nov-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG EOP Duplicate	E358-L	05-Nov-2024	07-Nov-2024	28 days	2 days	✓	09-Nov-2024	28 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG EOP	E290	05-Nov-2024	06-Nov-2024	14 days	1 days	✓	06-Nov-2024	14 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG EOP Duplicate	E290	05-Nov-2024	06-Nov-2024	14 days	1 days	✓	06-Nov-2024	14 days	1 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG EOP	E162	05-Nov-2024	----	----	----		10-Nov-2024	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG EOP Duplicate	E162	05-Nov-2024	----	----	----		10-Nov-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG EOP	E160	05-Nov-2024	----	----	----		10-Nov-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG EOP Duplicate	E160	05-Nov-2024	----	----	----		10-Nov-2024	7 days	5 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times 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) WLNG EOP	E641A	05-Nov-2024	13-Nov-2024	14 days	8 days	✓	13-Nov-2024	40 days	0 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) WLNG EOP Duplicate	E641A	05-Nov-2024	13-Nov-2024	14 days	8 days	✓	13-Nov-2024	40 days	0 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide) WLNG EOP	E532	05-Nov-2024	----	----	----		08-Nov-2024	28 days	3 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide) WLNG EOP Duplicate	E532	05-Nov-2024	----	----	----		08-Nov-2024	28 days	3 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) WLNG EOP	E508	05-Nov-2024	08-Nov-2024	28 days	4 days	✓	08-Nov-2024	28 days	4 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) WLNG EOP Duplicate	E508	05-Nov-2024	08-Nov-2024	28 days	4 days	✓	08-Nov-2024	28 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) WLNG EOP	E420	05-Nov-2024	08-Nov-2024	180 days	3 days	✓	09-Nov-2024	180 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) WLNG EOP Duplicate	E420	05-Nov-2024	08-Nov-2024	180 days	3 days	✓	09-Nov-2024	180 days	4 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) WLNG EOP	E395	05-Nov-2024	----	----	----		06-Nov-2024	7 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
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG EOP Duplicate	E395	05-Nov-2024	----	----	----		06-Nov-2024	7 days	1 days	✓
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
WLNG EOP	E611C	05-Nov-2024	12-Nov-2024	14 days	7 days	✓	13-Nov-2024	14 days	8 days	✓
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
WLNG EOP Duplicate	E611C	05-Nov-2024	12-Nov-2024	14 days	7 days	✓	13-Nov-2024	14 days	8 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	1752731	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	1756282	1	15	6.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1752737	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	1752732	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1759484	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1755576	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1756283	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	1752736	1	17	5.8	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1752341	1	16	6.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1752734	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1752735	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	1752733	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1759853	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1757153	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1758783	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1755210	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1752751	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1759849	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1762837	1	18	5.5	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1762838	1	8	12.5	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1752731	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	1756282	1	15	6.6	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1762914	1	14	7.1	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1752737	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	1752732	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1759484	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1755576	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1756283	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	1752736	1	17	5.8	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1752341	1	16	6.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1752734	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1752735	1	17	5.8	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1762915	1	12	8.3	5.0	✓
Sulfate in Water by IC	E235.SO4	1752733	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1759853	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 Hexavalent Chromium (Cr VI) by IC	E532	1757153	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1758783	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1755210	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1752751	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1759849	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1762837	1	18	5.5	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1762838	1	8	12.5	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1752731	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	1756282	1	15	6.6	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1762914	1	14	7.1	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1752737	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	1752732	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1759484	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1755576	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1756283	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	1752736	1	17	5.8	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1752341	1	16	6.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1752734	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1752735	1	17	5.8	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1762915	1	12	8.3	5.0	✓
Sulfate in Water by IC	E235.SO4	1752733	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1759853	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1757153	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1758783	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1755210	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1752751	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1759849	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1762837	1	18	5.5	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1762838	1	8	12.5	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1756282	1	15	6.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1752737	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	1752732	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1759484	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1755576	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1756283	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	1752736	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1752734	1	17	5.8	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							
Nitrite in Water by IC (Low Level)	E235.NO2-L	1752735	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	1752733	1	18	5.5	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1757153	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1758783	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1755210	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1752751	1	11	9.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1762837	1	18	5.5	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1762838	1	8	12.5	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 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.
Total Hexavalent Chromium (Cr VI) by IC	E532 ALS Environmental - Waterloo	Water	APHA 3500-Cr C (Ion Chromatography)	Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection. Results are based on an un-filtered, field-preserved sample.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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 CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in $CaCO_3$ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in $CaCO_3$ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Un-ionized Total Hydrogen Sulfide (calculated)	EC395 ALS Environmental - Vancouver	Water	APHA 4500 -S H	Un-ionized sulfide is calculated using results from total sulfide analysis, pH, temperature, and ionic strength of the sample. Calculation of un-ionized sulfide using total sulfide concentrations may be biased high due to particulate forms of sulfide measured during total sulfide testing.
Total Trivalent Chromium (Cr III) by Calculation	EC535 ALS Environmental - Waterloo	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
VPH: VH-BTEX-Styrene	EC580A ALS Environmental - Vancouver	Water	BC MOE Lab Manual (VPH in Water and Solids) (mod)	Volatile Petroleum Hydrocarbons (VPH) is calculated as follows: VPHw = Volatile Hydrocarbons (VH C6-C10) minus benzene, toluene, ethylbenzene, xylenes (BTEX) and styrene.
LEPH and HEPH: EPH-PAH	EC600A ALS Environmental - Vancouver	Water	BC MOE Lab Manual (LEPH and HEPH)	Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are calculated as follows: LEPH = Extractable Petroleum Hydrocarbons (EPH10-19) minus Acenaphthene, Acridine, Anthracene, Fluorene, Naphthalene and Phenanthrene; HEPH = Extractable Petroleum Hydrocarbons (EPH19-32) minus Benz(a)anthracene, Benzo(a)pyrene, Fluoranthene, and Pyrene.
Field pH,EC,Salinity, TDS, 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
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.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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	: **VA24C9972**	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	: 05-Nov-2024 17:30
PO	: 11964-Task 40-Phase3C-4C	Date Analysis Commenced	: 06-Nov-2024
C-O-C number	: ----	Issue Date	: 14-Nov-2024 12:56
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*
	Analyst	Vancouver Metals, Burnaby, British Columbia
	Technical Specialist	Waterloo Metals, Waterloo, Ontario
	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
	Supervisor - Water Chemistry	Vancouver Organics, Burnaby, British Columbia
	Department Manager - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
	Senior Analyst	Waterloo Inorganics, Waterloo, Ontario
	Senior Analyst	Waterloo Metals, Waterloo, Ontario
		Vancouver Metals, Burnaby, British Columbia
	Account Manager Assistant	Vancouver Administration, 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: 1752731)											
VA24C9958-006	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	31.8	31.8	0.00%	20%	----
Physical Tests (QC Lot: 1759849)											
FJ2403404-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	21.6	24.8	3.2	Diff <2x LOR	----
Physical Tests (QC Lot: 1759853)											
FJ2403404-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	256	244	4.79%	20%	----
Anions and Nutrients (QC Lot: 1752732)											
VA24C9958-004	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1752733)											
VA24C9958-004	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	54.8	54.8	0.0212%	20%	----
Anions and Nutrients (QC Lot: 1752734)											
VA24C9958-004	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.108	0.115	7.05%	20%	----
Anions and Nutrients (QC Lot: 1752735)											
VA24C9958-004	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: 1752736)											
VA24C9958-004	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.090	0.088	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1752737)											
VA24C9958-004	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: 1756282)											
VA24C9725-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0250	mg/L	0.310	0.317	2.12%	20%	----
Organic / Inorganic Carbon (QC Lot: 1756283)											
VA24C9725-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	9.30	9.71	4.24%	20%	----
Total Sulfides (QC Lot: 1752751)											
VA24C9788-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	0.0015	0.00003	Diff <2x LOR	----
Total Metals (QC Lot: 1755210)											
VA24C9760-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0325	0.0318	2.18%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00010	0.00010	0.000003	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0149	0.0153	2.78%	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	----

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: 1755210) - continued											
VA24C9760-001	Anonymous	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	0.0000069	0.0000062	0.0000007	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	4.44	4.42	0.663%	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	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.032	0.032	0.00001	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0020	0.0020	0.00002	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	0.873	0.893	2.32%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00103	0.00104	0.499%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000065	0.000063	0.000003	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	0.125	0.136	0.011	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00036	0.00034	0.00002	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	7.56	7.52	0.502%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	2.05	2.04	0.642%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0271	0.0274	0.838%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	0.64	0.59	0.05	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.00043	0.00046	0.00003	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	0.000102	0.000100	1.00%	20%	----
		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	<0.0030	<0.0030	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1758783)											

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: 1758783) - continued											
VA24C9870-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1755576)											
VA24D0002-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0017	0.0016	0.0001	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.0226	0.0224	0.697%	20%	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00086	0.00084	0.00002	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0289	0.0288	0.0818%	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	0.358	0.333	7.32%	20%	----
		Cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	<0.0000100	<0.0000100	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	63.7	64.9	1.86%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.00688	0.00702	2.12%	20%	----
		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	0.00078	0.00079	0.00002	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00037	0.00033	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	0.350	0.345	1.46%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	7.73	7.85	1.57%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0566	0.0566	0.00560%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0394	0.0391	0.694%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00088	0.00090	0.00003	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	60.1	60.8	1.25%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.0815	0.0838	2.83%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.00290	0.00287	1.34%	20%	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.41	1.42	0.849%	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	171	174	2.02%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	1.14	1.18	3.55%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	156	152	2.79%	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	0.000174	0.000179	2.63%	20%	----
		Thorium, dissolved	7440-29-1	E421	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*
Dissolved Metals (QC Lot: 1755576) - continued											
VA24D0002-001	Anonymous	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	0.00364	0.00361	0.889%	20%	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000623	0.000640	2.70%	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	<0.0010	<0.0010	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1759484)											
VA24C9870-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1757153)											
VA24C9972-001	WLNG EOP	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1762838)											
VA24C9908-001	Anonymous	Benzene	71-43-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloromethane	74-87-3	E611C	5.0	µg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		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	----

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: 1762838) - continued											
VA24C9908-001	Anonymous	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: 1762837)											
VA24C9771-001	Anonymous	VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----
Glycols (QC Lot: 1752341)											
VA24C9683-001	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	<5.0	<5.0	0	Diff <2x LOR	----
		Propylene glycol, 1,2-	57-55-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Triethylene glycol	112-27-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----

Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1752731)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1759849)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1759853)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1752732)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1752733)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1752734)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1752735)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1752736)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1752737)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1756282)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1756283)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1752751)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1755210)						
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1755210) - continued						
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	----
Total Metals (QCLot: 1758783)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1755576)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1755576) - continued						
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	----
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1755576) - continued						
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: 1759484)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1757153)						
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	<0.00050	----
Volatile Organic Compounds (QCLot: 1762838)						
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	----
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1762838) - continued						
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: 1762837)						
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----
Hydrocarbons (QCLot: 1762914)						
EPH (C10-C19)	----	E601A	250	µg/L	<250	----
EPH (C19-C32)	----	E601A	250	µg/L	<250	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1762915)						
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	----
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: 1752341)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Glycols (QCLot: 1752341) - continued						
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: 1752731)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1759849)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	102	85.0	115	----
Physical Tests (QCLot: 1759853)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1752732)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1752733)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1752734)									
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: 1752735)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.3	90.0	110	----
Anions and Nutrients (QCLot: 1752736)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	96.2	90.0	110	----
Anions and Nutrients (QCLot: 1752737)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 1756282)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	98.1	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1756283)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	101	80.0	120	----
Total Sulfides (QCLot: 1752751)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	97.8	80.0	120	----
Total Metals (QCLot: 1755210)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	103	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	105	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	107	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	101	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: 1755210) - continued									
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	99.9	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	102	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	106	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	105	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	101	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	99.4	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	107	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	99.6	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	112	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	104	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	100	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	101	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	111	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	97.1	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	110	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	106	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	100.0	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	104	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	106	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	107	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	108	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	108	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	102	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Total Metals (QCLot: 1758783)									

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: 1758783) - continued									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	93.4	80.0	120	----
Dissolved Metals (QCLot: 1755576)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	103	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	98.2	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	105	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	108	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	99.2	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	103	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	93.3	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.4	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	98.0	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	100	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	99.9	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	102	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	106	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	106	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.5	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	106	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	100	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	110	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	92.2	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	108	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	98.0	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	99.4	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	108	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	104	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	97.8	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	103	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: 1755576) - continued									
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	101	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	99.3	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	101	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	102	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	98.0	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	98.1	80.0	120	----
Speciated Metals (QCLot: 1757153)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	99.3	80.0	120	----
Volatile Organic Compounds (QCLot: 1762838)									
Benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	92.9	70.0	130	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	100 µg/L	90.0	70.0	130	----
Bromoform	75-25-2	E611C	0.5	µg/L	100 µg/L	99.3	70.0	130	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	100 µg/L	89.1	70.0	130	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	100 µg/L	95.7	70.0	130	----
Chloroethane	75-00-3	E611C	0.5	µg/L	100 µg/L	97.4	60.0	140	----
Chloroform	67-66-3	E611C	0.5	µg/L	100 µg/L	90.1	70.0	130	----
Chloromethane	74-87-3	E611C	5	µg/L	100 µg/L	90.0	60.0	140	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	100 µg/L	94.4	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	95.6	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	100 µg/L	98.8	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	100 µg/L	99.3	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	100 µg/L	90.6	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	90.1	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	100 µg/L	85.3	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	100 µg/L	89.4	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	94.5	70.0	130	----
Dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	91.0	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	94.8	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	100 µg/L	93.7	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Styrene	100-42-5	E611C	0.5	µg/L	100 µg/L	95.9	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: 1762838) - continued									
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	100 µg/L	93.5	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	88.3	70.0	130	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Toluene	108-88-3	E611C	0.4	µg/L	100 µg/L	93.0	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	100 µg/L	89.5	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	91.4	70.0	130	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	100	70.0	130	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	100 µg/L	88.0	60.0	140	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	100 µg/L	91.0	60.0	140	----
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	200 µg/L	95.9	70.0	130	----
Xylene, o-	95-47-6	E611C	0.3	µg/L	100 µg/L	92.5	70.0	130	----
Hydrocarbons (QCLot: 1762837)									
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	81.9	70.0	130	----
Hydrocarbons (QCLot: 1762914)									
EPH (C10-C19)	----	E601A	250	µg/L	6490 µg/L	103	70.0	130	----
EPH (C19-C32)	----	E601A	250	µg/L	3360 µg/L	86.9	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1762915)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.5 µg/L	101	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.5 µg/L	110	60.0	130	----
Acridine	260-94-6	E641A	0.01	µg/L	0.5 µg/L	101	60.0	130	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.5 µg/L	108	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.5 µg/L	88.0	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.5 µg/L	97.1	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.5 µg/L	97.2	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.5 µg/L	110	60.0	130	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.5 µg/L	101	60.0	130	----
Chrysene	218-01-9	E641A	0.01	µg/L	0.5 µg/L	96.8	60.0	130	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.5 µg/L	109	60.0	130	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.5 µg/L	104	60.0	130	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.5 µg/L	99.6	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.5 µg/L	102	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.5 µg/L	94.1	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.5 µg/L	102	60.0	130	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.5 µg/L	100	50.0	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: 1762915) - continued									
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	99.8	60.0	130	----
Quinoline	91-22-5	E641A	0.05	µg/L	0.5 µg/L	109	60.0	130	----
Glycols (QCLot: 1752341)									
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	99.5	70.0	130	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	25 mg/L	95.2	70.0	130	----
Triethylene glycol	112-27-6	E680E	5	mg/L	25 mg/L	102	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: 1752732)										
VA24C9958-005	Anonymous	Chloride	16887-00-6	E235.Cl	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1752733)										
VA24C9958-005	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	100.0 mg/L	100 mg/L	100.0	75.0	125	----
Anions and Nutrients (QCLot: 1752734)										
VA24C9958-005	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.55 mg/L	2.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1752735)										
VA24C9958-005	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.505 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1752736)										
VA24C9958-005	Anonymous	Fluoride	16984-48-8	E235.F	0.994 mg/L	1 mg/L	99.4	75.0	125	----
Anions and Nutrients (QCLot: 1752737)										
VA24C9958-005	Anonymous	Bromide	24959-67-9	E235.Br-L	0.532 mg/L	0.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1756282)										
VA24C9725-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1756283)										
VA24C9725-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1752751)										
VA24C9788-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.223 mg/L	0.2 mg/L	112	75.0	125	----
Total Metals (QCLot: 1755210)										
VA24C9760-002	Anonymous	Aluminum, total	7429-90-5	E420	0.184 mg/L	0.2 mg/L	91.9	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		Barium, total	7440-39-3	E420	0.0182 mg/L	0.02 mg/L	90.9	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0398 mg/L	0.04 mg/L	99.4	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0101 mg/L	0.01 mg/L	101	70.0	130	----
		Boron, total	7440-42-8	E420	0.098 mg/L	0.1 mg/L	97.6	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00409 mg/L	0.004 mg/L	102	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0106 mg/L	0.01 mg/L	106	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0406 mg/L	0.04 mg/L	102	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Copper, total	7440-50-8	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Iron, total	7439-89-6	E420	2.04 mg/L	2 mg/L	102	70.0	130	----
		Lead, total	7439-92-1	E420	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0981 mg/L	0.1 mg/L	98.1	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
Total Metals (QCLot: 1755210) - continued										
VA24C9760-002	Anonymous	Magnesium, total	7439-95-4	E420	0.959 mg/L	1 mg/L	95.9	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0198 mg/L	0.02 mg/L	99.2	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		Phosphorus, total	7723-14-0	E420	10.4 mg/L	10 mg/L	104	70.0	130	----
		Potassium, total	7440-09-7	E420	3.88 mg/L	4 mg/L	97.1	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0399 mg/L	0.04 mg/L	99.8	70.0	130	----
		Silicon, total	7440-21-3	E420	9.77 mg/L	10 mg/L	97.7	70.0	130	----
		Silver, total	7440-22-4	E420	0.00408 mg/L	0.004 mg/L	102	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	19.6 mg/L	20 mg/L	97.8	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0396 mg/L	0.04 mg/L	98.9	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00382 mg/L	0.004 mg/L	95.6	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		Tin, total	7440-31-5	E420	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00398 mg/L	0.004 mg/L	99.5	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0994 mg/L	0.1 mg/L	99.4	70.0	130	----
		Zinc, total	7440-66-6	E420	0.402 mg/L	0.4 mg/L	100	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0407 mg/L	0.04 mg/L	102	70.0	130	----
Total Metals (QCLot: 1758783)										
VA24C9901-001	Anonymous	Mercury, total	7439-97-6	E508	0.00486 mg/L	0.005 mg/L	97.3	70.0	130	----
Dissolved Metals (QCLot: 1755576)										
VA24D0002-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.198 mg/L	0.2 mg/L	99.0	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0181 mg/L	0.02 mg/L	90.7	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0367 mg/L	0.04 mg/L	91.8	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00950 mg/L	0.01 mg/L	95.0	70.0	130	----
		Boron, dissolved	7440-42-8	E421	ND mg/L	----	ND	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00388 mg/L	0.004 mg/L	97.0	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00961 mg/L	0.01 mg/L	96.1	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0190 mg/L	0.02 mg/L	95.0	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0185 mg/L	0.02 mg/L	92.4	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.91 mg/L	2 mg/L	95.6	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0197 mg/L	0.02 mg/L	98.3	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	ND mg/L	----	ND	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1755576) - continued										
VA24D0002-002	Anonymous	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	0.0374 mg/L	0.04 mg/L	93.4	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.2 mg/L	10 mg/L	102	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	ND mg/L	----	ND	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0400 mg/L	0.04 mg/L	100	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	10.0 mg/L	10 mg/L	100	70.0	130	----
		Silver, dissolved	7440-22-4	E421	----	----		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	0.0432 mg/L	0.04 mg/L	108	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00370 mg/L	0.004 mg/L	92.6	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00388 mg/L	0.004 mg/L	96.9	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.402 mg/L	0.4 mg/L	100	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
Dissolved Metals (QCLot: 1759484)										
VA24C9901-001	Anonymous	Mercury, dissolved	7439-97-6	E509	ND mg/L	----	ND	70.0	130	----
Speciated Metals (QCLot: 1757153)										
VA24C9972-001	WLNG EOP	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0407 mg/L	0.04 mg/L	102	70.0	130	----
Volatile Organic Compounds (QCLot: 1762838)										
VA24C9908-001	Anonymous	Benzene	71-43-2	E611C	94.1 µg/L	100 µg/L	94.1	60.0	140	----
		Bromodichloromethane	75-27-4	E611C	89.1 µg/L	100 µg/L	89.1	60.0	140	----
		Bromoform	75-25-2	E611C	95.3 µg/L	100 µg/L	95.3	60.0	140	----
		Carbon tetrachloride	56-23-5	E611C	93.7 µg/L	100 µg/L	93.7	60.0	140	----
		Chlorobenzene	108-90-7	E611C	97.0 µg/L	100 µg/L	97.0	60.0	140	----
		Chloroethane	75-00-3	E611C	93.6 µg/L	100 µg/L	93.6	50.0	150	----
		Chloroform	67-66-3	E611C	91.4 µg/L	100 µg/L	91.4	60.0	140	----
		Chloromethane	74-87-3	E611C	81.0 µg/L	100 µg/L	81.0	50.0	150	----
		Dibromochloromethane	124-48-1	E611C	91.7 µg/L	100 µg/L	91.7	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	96.9 µg/L	100 µg/L	96.9	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611C	92.0 µg/L	100 µg/L	92.0	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611C	85.8 µg/L	100 µg/L	85.8	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611C	85.6 µg/L	100 µg/L	85.6	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	89.5 µg/L	100 µg/L	89.5	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: 1762838) - continued										
VA24C9908-001	Anonymous	Dichloroethylene, trans-1,2-	156-60-5	E611C	94.9 µg/L	100 µg/L	94.9	60.0	140	----
		Dichloromethane	75-09-2	E611C	88.9 µg/L	100 µg/L	88.9	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611C	94.6 µg/L	100 µg/L	94.6	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	98.8 µg/L	100 µg/L	98.8	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	97.6 µg/L	100 µg/L	97.6	60.0	140	----
		Ethylbenzene	100-41-4	E611C	98.2 µg/L	100 µg/L	98.2	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Styrene	100-42-5	E611C	95.7 µg/L	100 µg/L	95.7	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	94.7 µg/L	100 µg/L	94.7	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	82.4 µg/L	100 µg/L	82.4	60.0	140	----
		Tetrachloroethylene	127-18-4	E611C	106 µg/L	100 µg/L	106	60.0	140	----
		Toluene	108-88-3	E611C	97.0 µg/L	100 µg/L	97.0	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	94.2 µg/L	100 µg/L	94.2	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	88.1 µg/L	100 µg/L	88.1	60.0	140	----
		Trichloroethylene	79-01-6	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611C	88.1 µg/L	100 µg/L	88.1	50.0	150	----
		Vinyl chloride	75-01-4	E611C	85.1 µg/L	100 µg/L	85.1	50.0	150	----
		Xylene, m+p-	179601-23-1	E611C	201 µg/L	200 µg/L	100	60.0	140	----
		Xylene, o-	95-47-6	E611C	96.1 µg/L	100 µg/L	96.1	60.0	140	----
Hydrocarbons (QCLot: 1762837)										
VA24C9771-002	Anonymous	VHw (C6-C10)	----	E581.VH+F1	4560 µg/L	6310 µg/L	72.2	60.0	140	----

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 20 -

Page of

Environmental Division Vancouver
Work Order Reference
VA24C9972

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	
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

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 minimu
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimu
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimu
☐ 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: 3-NOV 8:00 AM

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:	
ALS Lab Work Order # (ALS use only):	C9972

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	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	05-NOV-24	10:40	Water	15	R	R	R	R	R	R	R	R	R	R	R	R					
	pH: 7.27 cond: 144 µS/cm temp: 10.4 °C																					
	WLNG EOP Duplicate	05-NOV-24	10:40	Water	15	R	R	R	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

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			
				11			

SHIPMENT RELEASE (client use)

Date: 05-NOV-24 Time: 17:09

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received Date: Nov 5 Time: 5:30 pm

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.

Woodfibre Site WTP Discharge Field Notes and Logs

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-11-5-Chycoski-ECF9D

Project Component:	Tunnel	**Site Name:**	WLNG Treatment Discharge
Inspection Date:	11/05/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.669337 -123.249803
Temperature(c):	Low 5 High 10	**Permit:**	PE 110136
Weather Conditions:	Overcast	**Ground Conditions:**	Damp

Observations

Time: 10:40:00 **Flow Volume (visual):** N/A

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

Logger Maintenance

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

Describe Logger Maintenance

2024-11-5-Chycoski-ECF9D

Photos

Photo: 1

Location: WLNG EOP

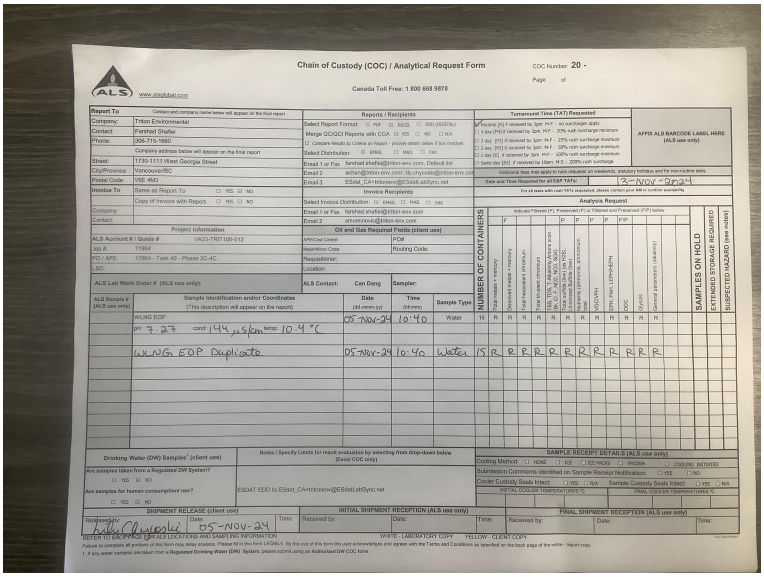
Description: Discharge point

Photo: 2

Location: WLNG EOP

Description: Water discharging

Photos


Chain of Custody (COC) / Analytical Request Form

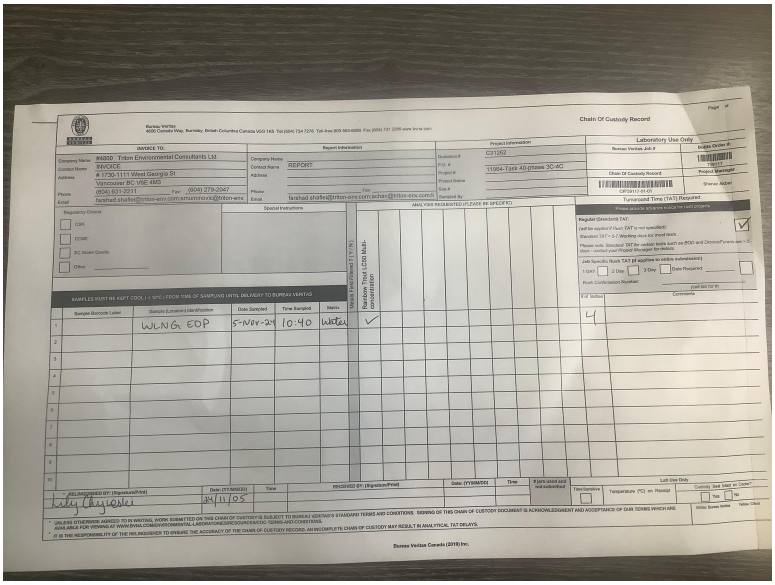
WLNG EOP

WLNG EOP Duplicate

Photo: 3

Location: WLNG EOP

Description: Lab COC


Chain of Custody Record

WLNG EOP

Photo: 4

Location: WLNG EOP

Description: LC50 lab COC

Sign Off

Report Prepared By:	Lily Chycoski	**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	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Table of Contents:

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

Appendices:

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

1. Executive Summary and Field Notes:

The discharged water consistently remained within regulatory guidelines. The key parameters, including temperature, pH, NTU, salinity, conductivity, and oxidation-reduction potential (ORP), were monitored throughout the discharge process and remained within the prescribed limits. No visible sheen observed on top of the WTP tanks and discharged water. All relevant parameters were measured using YSI instruments and WTP probes. The total discharge volume up to November 4th was 20,099m³.

Daily Volume Summary:

Table 1: Discharge Volumes Daily Summary

Date	Location	Volume (m3)	Comments
November 4	WoodFibre (WF)	356	None
November 5	WF	335	None
November 6	WF	299	None
November 7	WF	336	None
November 8	WF	344	None
November 9	WF	334	None
November 10	WF	305	None
	Total	2,309	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)
11/4/2024	0:00:00	7.4	0.000	0	20,099	11.6	114
11/4/2024	0:15:00	7.4	0.000	0	20,099	12.2	114
11/4/2024	0:30:00	7.4	0.000	0	20,099	12.8	114
11/4/2024	0:45:00	7.4	0.435	0	20,101	11.8	114
11/4/2024	1:00:00	7.4	0.454	4.9	20,108	11.2	114
11/4/2024	1:15:00	7.4	0.427	0	20,114	11.1	113
11/4/2024	1:30:00	7.4	0.438	0	20,121	11.1	113
11/4/2024	1:45:00	7.4	0.420	0	20,127	11.1	114
11/4/2024	2:00:00	7.4	0.000	0	20,128	11.4	113
11/4/2024	2:15:00	7.4	0.000	0	20,128	11.9	113
11/4/2024	2:30:00	7.4	0.000	0	20,128	12.4	114
11/4/2024	2:45:00	7.4	0.416	0	20,130	12.7	114
11/4/2024	3:00:00	7.4	0.412	0.3	20,137	11.3	114
11/4/2024	3:15:00	7.4	0.412	1.4	20,143	11.3	114
11/4/2024	3:30:00	7.4	0.408	2.2	20,146	11.3	114
11/4/2024	3:45:00	7.4	0.408	2	20,152	11.2	114
11/4/2024	4:00:00	7.4	0.389	2	20,158	11.2	114
11/4/2024	4:15:00	7.4	0.389	1.8	20,164	11.2	114
11/4/2024	4:30:00	7.4	0.386	2.1	20,170	11.2	114
11/4/2024	4:45:00	7.4	0.000	1.7	20,172	11.5	114
11/4/2024	5:00:00	7.4	0.000	1.6	20,172	12	114

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/4/2024	5:15:00	7.4	0.374	1.7	20,175	12.2	114
11/4/2024	5:30:00	7.4	0.389	1.7	20,181	11.7	114
11/4/2024	5:45:00	7.4	0.000	1.8	20,184	11.8	114
11/4/2024	6:00:00	7.4	0.000	1.7	20,184	12.4	114
11/4/2024	6:15:00	7.4	0.000	1.7	20,184	13	114
11/4/2024	6:30:00	7.4	0.382	1.5	20,185	13.5	114
11/4/2024	6:45:00	7.4	0.378	1.6	20,191	12.1	114
11/4/2024	7:00:00	7.4	0.378	1.2	20,196	11.9	114
11/4/2024	7:15:00	7.4	0.370	0.9	20,202	12	114
11/4/2024	7:30:00	7.4	0.370	1	20,208	12.1	114
11/4/2024	7:45:00	7.4	0.000	0.8	20,209	12.3	114
11/4/2024	8:00:00	7.4	0.000	0.9	20,209	12.9	114
11/4/2024	8:15:00	7.4	0.000	0.8	20,209	13.5	114
11/4/2024	8:30:00	7.4	0.386	0.7	20,210	13.8	114
11/4/2024	8:45:00	7.4	0.367	0.6	20,216	10.7	113
11/4/2024	9:00:00	7.4	0.370	0.5	20,222	10.7	113
11/4/2024	9:15:00	7.4	0.370	0.5	20,227	10.7	113
11/4/2024	9:30:00	7.4	0.374	0.4	20,233	10.7	113
11/4/2024	9:45:00	7.4	0.355	0.2	20,238	10.6	113
11/4/2024	10:00:00	7.4	0.363	0	20,243	10.5	112
11/4/2024	10:15:00	7.4	0.352	0	20,249	10.4	112
11/4/2024	10:30:00	7.4	0.336	0	20,254	10.4	112
11/4/2024	10:45:00	7.4	0.336	0	20,260	10.3	113
11/4/2024	11:00:00	7.4	0.329	0	20,265	10.3	112
11/4/2024	11:15:00	7.4	0.336	0	20,270	10.3	111

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/4/2024	11:30:00	7.4	0.348	0	20,275	10.6	111
11/4/2024	11:45:00	7.4	0.000	0	20,279	11.1	112
11/4/2024	12:00:00	7.4	0.000	0	20,279	11.4	111
11/4/2024	12:15:00	7.4	0.000	0	20,279	11.8	112
11/4/2024	12:30:00	7.4	0.000	0	20,279	12.1	111
11/4/2024	12:45:00	7.4	0.355	0	20,284	12.2	111
11/4/2024	13:00:00	7.4	0.359	0	20,289	12.5	112
11/4/2024	13:15:00	7.4	0.355	0	20,295	12.8	112
11/4/2024	13:30:00	7.3	0.352	0	20,300	13	111
11/4/2024	13:45:00	7.3	0.359	0	20,305	13.2	111
11/4/2024	14:00:00	7.3	0.344	0	20,311	13.4	111
11/4/2024	14:15:00	7.3	0.348	0	20,316	13.6	112
11/4/2024	14:30:00	7.3	0.348	0	20,322	13.7	111
11/4/2024	14:45:00	7.3	0.340	0	20,327	13.9	112
11/4/2024	15:00:00	7.3	0.340	0	20,332	14	111
11/4/2024	15:15:00	7.4	0.340	0	20,337	14.7	111
11/4/2024	15:30:00	7.3	0.344	0	20,342	14.8	112
11/4/2024	15:45:00	7.3	0.321	0	20,347	14.8	113
11/4/2024	16:00:00	7.3	0.329	0	20,352	14.8	112
11/4/2024	16:15:00	7.3	0.386	0	20,357	14.9	112
11/4/2024	16:30:00	7.3	0.000	0	20,360	14.9	111
11/4/2024	16:45:00	7.3	0.000	0	20,361	14.9	112
11/4/2024	17:00:00	7.2	0.000	0	20,361	14.8	111
11/4/2024	17:15:00	7.3	0.000	0	20,361	14.8	111
11/4/2024	17:30:00	7.3	0.438	0	20,365	15.2	112

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/4/2024	17:45:00	7.4	0.499	0	20,372	10.9	112
11/4/2024	18:00:00	7.4	0.465	0	20,379	10.9	112
11/4/2024	18:15:00	7.4	0.473	0	20,386	10.8	111
11/4/2024	18:30:00	7.3	0.386	0	20,392	11.2	111
11/4/2024	18:45:00	7.4	0.000	0	20,392	11.2	111
11/4/2024	19:00:00	7.4	0.000	0	20,392	11.4	110
11/4/2024	19:15:00	7.4	0.461	0	20,397	11.8	111
11/4/2024	19:30:00	7.3	0.465	0	20,404	12.1	111
11/4/2024	19:45:00	7.3	0.457	0	20,411	12.5	113
11/4/2024	20:00:00	7.3	0.461	0	20,418	13	113
11/4/2024	20:15:00	7.3	0.000	0	20,419	13.4	113
11/4/2024	20:30:00	7.3	0.000	0	20,419	13.7	114
11/4/2024	20:45:00	7.3	0.000	0	20,419	14.1	113
11/4/2024	21:00:00	7.3	0.457	0	20,420	14.4	113
11/4/2024	21:15:00	7.3	0.450	0	20,427	14.7	114
11/4/2024	21:30:00	7.4	0.000	0	20,431	14.3	114
11/4/2024	21:45:00	7.4	0.000	0	20,431	14.4	113
11/4/2024	22:00:00	7.4	0.454	0.3	20,432	14.7	114
11/4/2024	22:15:00	7.4	0.469	0	20,439	10.8	114
11/4/2024	22:30:00	7.4	0.450	0	20,445	10.9	113
11/4/2024	22:45:00	7.4	0.454	0	20,452	10.8	113
11/4/2024	23:00:00	7.4	0.000	0	20,452	11.3	113
11/4/2024	23:15:00	7.4	0.000	0	20,452	11.9	114
11/4/2024	23:30:00	7.4	0.000	0	20,452	12.5	114
11/4/2024	23:45:00	7.4	0.461	0	20,455	11	114

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/5/2024	0:00:00	7.4	0.457	0	20,462	10.7	114
11/5/2024	0:15:00	7.4	0.438	0	20,469	10.8	113
11/5/2024	0:30:00	7.4	0.000	0	20,474	10.9	113
11/5/2024	0:45:00	7.4	0.000	0	20,474	11.4	114
11/5/2024	1:00:00	7.4	0.000	0	20,474	12	114
11/5/2024	1:15:00	7.4	0.000	0	20,474	12.5	113
11/5/2024	1:30:00	7.4	0.457	0	20,479	13	114
11/5/2024	1:45:00	7.4	0.438	0	20,485	13.5	114
11/5/2024	2:00:00	7.4	0.442	0	20,492	13.9	114
11/5/2024	2:15:00	7.4	0.000	0	20,496	14.3	114
11/5/2024	2:30:00	7.4	0.000	0	20,496	14.6	114
11/5/2024	2:45:00	7.4	0.000	0	20,496	15	114
11/5/2024	3:00:00	7.4	0.000	0	20,496	15.2	114
11/5/2024	3:15:00	7.4	0.442	0	20,502	15.5	114
11/5/2024	3:30:00	7.4	0.427	0	20,509	15.7	114
11/5/2024	3:45:00	7.4	0.438	0	20,516	16	114
11/5/2024	4:00:00	7.4	0.000	0	20,518	16.2	248
11/5/2024	4:15:00	7.4	0.000	0	20,518	16.4	248
11/5/2024	4:30:00	7.4	0.000	0	20,518	16.6	247
11/5/2024	4:45:00	7.4	0.438	0	20,520	16.7	247
11/5/2024	5:00:00	7.4	0.450	0	20,527	17	248
11/5/2024	5:15:00	7.3	0.442	0	20,534	17.1	248
11/5/2024	5:30:00	7.3	0.420	0	20,541	17.3	247
11/5/2024	5:45:00	7.3	0.427	0	20,547	17.4	248
11/5/2024	6:00:00	7.3	0.438	0	20,554	17.5	250

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/5/2024	6:15:00	7.3	0.420	0	20,560	17.6	248
11/5/2024	6:30:00	7.3	0.000	0	20,560	17.7	248
11/5/2024	6:45:00	7.3	0.000	0	20,560	17.8	250
11/5/2024	7:00:00	7.3	0.000	0	20,560	17.8	247
11/5/2024	7:15:00	7.3	0.416	0	20,562	17.9	247
11/5/2024	7:30:00	7.3	0.438	0	20,568	17.9	246
11/5/2024	7:45:00	7.3	0.427	0	20,575	18	248
11/5/2024	8:00:00	7.3	0.438	0	20,581	18	250
11/5/2024	8:15:00	7.3	0.000	0	20,583	18.1	250
11/5/2024	8:30:00	7.3	0.000	0	20,583	17.9	248
11/5/2024	8:45:00	7.3	0.000	0	20,583	17.6	250
11/5/2024	9:00:00	7.3	0.000	0	20,583	17.3	249
11/5/2024	9:15:00	7.4	0.423	0.1	20,589	10.6	113
11/5/2024	9:30:00	7.5	0.423	0.1	20,595	10.5	111
11/5/2024	9:45:00	7.5	0.423	0.2	20,601	10.4	111
11/5/2024	10:00:00	7.5	0.000	0.3	20,606	10.6	111
11/5/2024	10:15:00	7.5	0.000	0.3	20,606	10.9	111
11/5/2024	10:30:00	7.5	0.000	0.2	20,606	11.3	111
11/5/2024	10:45:00	7.5	0.000	0.2	20,606	11.6	111
11/5/2024	11:00:00	7.5	0.401	0.2	20,609	10.5	111
11/5/2024	11:15:00	7.5	0.412	0	20,616	10.5	112
11/5/2024	11:30:00	7.5	0.416	0	20,622	10.6	112
11/5/2024	11:45:00	7.5	0.397	0	20,628	10.5	113
11/5/2024	12:00:00	7.5	0.000	0	20,632	10.6	112
11/5/2024	12:15:00	7.5	0.000	0	20,632	11	111

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/5/2024	12:30:00	7.5	0.000	0	20,632	11.3	112
11/5/2024	12:45:00	7.5	0.420	0	20,636	12.1	111
11/5/2024	13:00:00	7.5	0.408	0	20,642	12.4	111
11/5/2024	13:15:00	7.5	0.408	0	20,648	12.7	112
11/5/2024	13:30:00	7.5	0.416	0	20,654	13.1	113
11/5/2024	13:45:00	7.5	0.404	0	20,661	13.3	113
11/5/2024	14:00:00	7.4	0.393	0	20,667	13.6	113
11/5/2024	14:15:00	7.4	0.404	0	20,673	13.9	113
11/5/2024	14:30:00	7.4	0.389	0	20,679	14.1	113
11/5/2024	14:45:00	7.4	0.000	0	20,681	12.5	114
11/5/2024	15:00:00	7.4	0.000	0	20,681	13	114
11/5/2024	15:15:00	7.4	0.000	0	20,681	13.3	113
11/5/2024	15:30:00	7.4	0.408	12.3	20,682	12.3	113
11/5/2024	15:45:00	7.4	0.389	0	20,688	11.4	113
11/5/2024	16:00:00	7.4	0.386	0	20,694	11.2	112
11/5/2024	16:15:00	7.4	0.367	0	20,700	11.2	111
11/5/2024	16:30:00	7.4	0.000	0	20,704	11.2	112
11/5/2024	16:45:00	7.4	0.000	0	20,704	11.6	113
11/5/2024	17:00:00	7.4	0.000	0	20,704	11.9	111
11/5/2024	17:15:00	7.4	0.000	0	20,704	12.2	111
11/5/2024	17:30:00	7.4	0.389	0	20,708	11	111
11/5/2024	17:45:00	7.4	0.408	0	20,714	11	111
11/5/2024	18:00:00	7.4	0.401	0	20,720	10.9	112
11/5/2024	18:15:00	7.5	0.397	0	20,726	11	111
11/5/2024	18:30:00	7.5	0.000	0	20,727	11.4	111

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/5/2024	18:45:00	7.4	0.000	0	20,727	11.7	112
11/5/2024	19:00:00	7.4	0.000	0	20,727	11.8	110
11/5/2024	19:15:00	7.4	0.386	0	20,729	11.9	111
11/5/2024	19:30:00	7.5	0.397	0	20,735	11.1	111
11/5/2024	19:45:00	7.5	0.370	0	20,741	10.9	112
11/5/2024	20:00:00	7.5	0.393	0	20,747	10.9	112
11/5/2024	20:15:00	7.5	0.000	0	20,750	11.3	114
11/5/2024	20:30:00	7.5	0.000	0	20,750	11.9	113
11/5/2024	20:45:00	7.5	0.000	0	20,750	12.5	113
11/5/2024	21:00:00	7.5	0.000	0	20,750	13	114
11/5/2024	21:15:00	7.5	0.000	0	20,755	13.3	113
11/5/2024	21:30:00	7.5	0.370	0	20,760	13.4	113
11/5/2024	21:45:00	7.4	0.382	0	20,765	12.5	113
11/5/2024	22:00:00	7.5	0.393	0	20,771	11.8	113
11/5/2024	22:15:00	7.5	0.363	0	20,777	11.6	111
11/5/2024	22:30:00	7.5	0.000	0	20,779	12	111
11/5/2024	22:45:00	7.5	0.000	0	20,779	12.3	112
11/5/2024	23:00:00	7.5	0.000	0	20,779	12.6	113
11/5/2024	23:15:00	7.5	0.000	0	20,779	12.8	111
11/5/2024	23:30:00	7.4	0.401	0	20,784	13.4	112
11/5/2024	23:45:00	7.4	0.386	0	20,790	13.2	113
11/6/2024	0:00:00	7.4	0.389	0	20,796	13.3	113
11/6/2024	0:15:00	7.4	0.000	0	20,801	13.6	114
11/6/2024	0:30:00	7.4	0.000	0	20,801	14	114
11/6/2024	0:45:00	7.4	0.000	0	20,801	14.2	113

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/6/2024	1:00:00	7.4	0.000	0	20,801	14.5	114
11/6/2024	1:15:00	7.4	0.374	0	20,804	14.8	114
11/6/2024	1:30:00	7.4	0.370	0	20,810	15.1	114
11/6/2024	1:45:00	7.4	0.370	0	20,816	15.4	114
11/6/2024	2:00:00	7.4	0.370	0	20,822	15.6	114
11/6/2024	2:15:00	7.4	0.000	0	20,824	15.9	114
11/6/2024	2:30:00	7.4	0.000	0	20,824	16.2	248
11/6/2024	2:45:00	7.4	0.000	0	20,824	16.3	247
11/6/2024	3:00:00	7.4	0.000	0	20,824	16.5	247
11/6/2024	3:15:00	7.4	0.393	0	20,829	16.7	246
11/6/2024	3:30:00	7.3	0.374	0	20,835	16.8	247
11/6/2024	3:45:00	7.3	0.386	0	20,840	17	248
11/6/2024	4:00:00	7.3	0.386	0	20,846	17.1	248
11/6/2024	4:15:00	7.3	0.000	0	20,847	17.3	248
11/6/2024	4:30:00	7.3	0.000	0	20,847	17.3	248
11/6/2024	4:45:00	7.3	0.000	0	20,847	17.5	248
11/6/2024	5:00:00	7.3	0.382	0	20,849	17.6	250
11/6/2024	5:15:00	7.3	0.386	0	20,855	17.6	250
11/6/2024	5:30:00	7.3	0.378	0	20,860	17.7	250
11/6/2024	5:45:00	7.3	0.363	0	20,866	17.8	248
11/6/2024	6:00:00	7.3	0.000	0	20,869	17.9	248
11/6/2024	6:15:00	7.3	0.000	0	20,869	17.9	248
11/6/2024	6:30:00	7.3	0.000	0	20,869	18	248
11/6/2024	6:45:00	7.3	0.302	0	20,869	18	250
11/6/2024	7:00:00	7.3	0.386	0	20,874	18	247

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/6/2024	7:15:00	7.3	0.370	0	20,880	18.1	248
11/6/2024	7:30:00	7.3	0.359	0	20,886	18.2	250
11/6/2024	7:45:00	7.3	0.000	0	20,891	18.2	250
11/6/2024	8:00:00	7.3	0.000	0	20,891	18.2	250
11/6/2024	8:15:00	7.3	0.000	0	20,891	18.3	250
11/6/2024	8:30:00	7.3	0.000	0	20,891	18.3	247
11/6/2024	8:45:00	7.3	0.378	0	20,894	18	246
11/6/2024	9:00:00	7.3	0.370	0	20,900	17.8	247
11/6/2024	9:15:00	7.3	0.374	0	20,905	17.5	248
11/6/2024	9:30:00	7.5	0.352	0	20,911	11	113
11/6/2024	9:45:00	7.5	0.000	0	20,914	11.3	112
11/6/2024	10:00:00	7.5	0.000	0	20,914	11.6	111
11/6/2024	10:15:00	7.5	0.000	0	20,914	11.9	112
11/6/2024	10:30:00	7.5	0.000	0	20,914	12.2	112
11/6/2024	10:45:00	7.5	0.404	0	20,918	12.8	111
11/6/2024	11:00:00	7.5	0.397	0	20,924	11.4	111
11/6/2024	11:15:00	7.5	0.389	0	20,930	11.4	111
11/6/2024	11:30:00	7.5	0.382	0	20,936	11.5	111
11/6/2024	11:45:00	7.5	0.000	0	20,938	11.7	112
11/6/2024	12:00:00	7.5	0.000	0	20,938	12	112
11/6/2024	12:15:00	7.5	0.000	0	20,938	12.3	112
11/6/2024	12:30:00	7.5	0.404	0	20,940	12.7	113
11/6/2024	12:45:00	7.5	0.386	0	20,946	11.2	113
11/6/2024	13:00:00	7.5	0.382	0	20,952	11.3	113
11/6/2024	13:15:00	7.5	0.374	0	20,958	11.3	114

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/6/2024	13:30:00	7.5	0.382	0	20,963	11.4	114
11/6/2024	13:45:00	7.5	0.367	0	20,969	11.4	113
11/6/2024	14:00:00	7.5	0.386	0	20,975	11.4	114
11/6/2024	14:15:00	7.5	0.382	0	20,980	11.5	114
11/6/2024	14:30:00	7.5	0.378	0	20,986	11.5	113
11/6/2024	15:45:00	7.4	0.389	0	20,993	11.3	113
11/6/2024	16:00:00	7.4	0.378	0	20,999	11.3	112
11/6/2024	16:15:00	7.4	0.370	0	21,004	11.3	112
11/6/2024	16:30:00	7.4	0.367	0	21,010	11.3	112
11/6/2024	17:45:00	7.4	0.378	0	21,017	11.5	113
11/6/2024	18:00:00	7.5	0.378	1.9	21,023	11.4	113
11/6/2024	18:15:00	7.5	0.370	0	21,028	11.3	113
11/6/2024	18:30:00	7.5	0.363	0	21,034	11.3	113
11/6/2024	19:15:00	7.5	0.000	0	21,039	11.8	111
11/6/2024	19:30:00	7.5	0.000	0	21,039	12	111
11/6/2024	19:45:00	7.5	0.367	0	21,042	12.2	111
11/6/2024	20:00:00	7.5	0.348	0	21,047	11.3	112
11/6/2024	20:15:00	7.5	0.352	0	21,052	11.3	111
11/6/2024	20:30:00	7.5	0.355	0	21,058	11.4	112
11/6/2024	20:45:00	7.5	0.000	0	21,063	11.5	113
11/6/2024	21:00:00	7.5	0.000	0	21,063	11.9	113
11/6/2024	21:15:00	7.5	0.000	0	21,063	12.3	113
11/6/2024	21:30:00	7.5	0.000	0	21,063	12.8	113
11/6/2024	21:45:00	7.5	0.000	0	21,063	13.7	113
11/6/2024	22:00:00	7.5	0.355	0	21,068	11.8	114

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/6/2024	22:15:00	7.5	0.340	0	21,074	11.7	113
11/6/2024	22:30:00	7.5	0.355	0	21,079	11.7	113
11/6/2024	22:45:00	7.5	0.359	0	21,080	12	113
11/6/2024	23:00:00	7.5	0.000	0	21,080	12.5	114
11/6/2024	23:15:00	7.5	0.000	0	21,083	11.4	114
11/6/2024	23:30:00	7.5	0.000	0	21,083	11.8	113
11/6/2024	23:45:00	7.5	0.525	0	21,089	11	113
11/7/2024	0:00:00	7.5	0.491	0	21,096	11.1	113
11/7/2024	0:15:00	7.5	0.000	0	21,102	11.3	113
11/7/2024	1:00:00	7.5	0.484	0	21,106	11.1	113
11/7/2024	1:15:00	7.5	0.491	0	21,113	11	113
11/7/2024	1:30:00	7.5	0.507	0	21,121	11.1	114
11/7/2024	1:45:00	7.5	0.000	0	21,123	11.4	114
11/7/2024	2:00:00	7.5	0.000	0	21,123	12	114
11/7/2024	2:15:00	7.5	0.000	0	21,123	12.6	114
11/7/2024	2:30:00	7.5	0.000	0	21,123	13.1	114
11/7/2024	2:45:00	7.5	0.000	0	21,123	13.6	114
11/7/2024	3:00:00	7.5	0.480	0	21,125	12.5	114
11/7/2024	3:15:00	7.5	0.480	0	21,132	11.1	114
11/7/2024	3:30:00	7.5	0.476	0	21,139	11.1	114
11/7/2024	3:45:00	7.5	0.000	0	21,142	11.4	114
11/7/2024	4:00:00	7.5	0.000	0	21,142	12	114
11/7/2024	4:15:00	7.5	0.000	0	21,142	12.7	114
11/7/2024	4:30:00	7.5	0.469	0	21,148	11.1	114
11/7/2024	4:45:00	7.5	0.476	0	21,155	11.1	114

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/7/2024	5:00:00	7.5	0.473	0	21,162	11.2	114
11/7/2024	5:15:00	7.5	0.457	0	21,169	11.2	114
11/7/2024	5:30:00	7.5	0.457	0	21,176	11.2	114
11/7/2024	5:45:00	7.5	0.457	0	21,183	11.2	114
11/7/2024	6:00:00	7.5	0.000	0	21,186	11.5	114
11/7/2024	6:15:00	7.5	0.000	0	21,186	12.2	114
11/7/2024	6:30:00	7.5	0.000	0	21,186	12.8	114
11/7/2024	6:45:00	7.5	0.457	0	21,191	11.2	114
11/7/2024	7:00:00	7.5	0.473	0	21,198	11.2	114
11/7/2024	7:15:00	7.5	0.461	0	21,204	11.2	114
11/7/2024	7:30:00	7.5	0.000	0	21,208	11.4	113
11/7/2024	7:45:00	7.5	0.000	0	21,208	11.9	114
11/7/2024	8:00:00	7.5	0.000	0	21,208	12.5	114
11/7/2024	8:15:00	7.5	0.000	0	21,208	13	114
11/7/2024	8:30:00	7.5	0.457	0	21,214	11	113
11/7/2024	8:45:00	7.5	0.442	0	21,221	11	113
11/7/2024	9:00:00	7.5	0.457	0	21,228	10.9	111
11/7/2024	9:15:00	7.5	0.000	0	21,232	11.1	111
11/7/2024	9:30:00	7.5	0.000	0	21,232	11.4	111
11/7/2024	9:45:00	7.5	0.000	0	21,232	11.7	111
11/7/2024	10:00:00	7.5	0.000	0	21,232	12	112
11/7/2024	10:15:00	7.5	0.469	0	21,237	11	112
11/7/2024	10:30:00	7.5	0.446	0	21,244	11	113
11/7/2024	10:45:00	7.5	0.457	0	21,251	11.1	113
11/7/2024	11:00:00	7.5	0.000	0	21,256	11.2	114

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/7/2024	11:15:00	7.5	0.000	0	21,256	11.6	111
11/7/2024	11:30:00	7.5	0.000	0	21,256	12	112
11/7/2024	11:45:00	7.5	0.000	0	21,256	12.3	111
11/7/2024	12:00:00	7.5	0.454	0	21,261	11.1	112
11/7/2024	12:15:00	7.5	0.465	0	21,267	11.1	112
11/7/2024	12:30:00	7.5	0.454	0	21,274	11.1	111
11/7/2024	12:45:00	7.5	0.000	0	21,280	11.2	113
11/7/2024	13:00:00	7.5	0.000	0	21,280	11.8	113
11/7/2024	13:15:00	7.5	0.000	0	21,280	12.2	114
11/7/2024	13:30:00	7.5	0.000	0	21,280	12.5	111
11/7/2024	13:45:00	7.5	0.473	0	21,283	11.3	112
11/7/2024	14:00:00	7.5	0.469	0	21,290	11.3	111
11/7/2024	14:15:00	7.5	0.438	0	21,297	11.3	112
11/7/2024	14:30:00	7.5	0.461	0	21,304	11.3	113
11/7/2024	14:45:00	7.5	0.000	0	21,305	11.7	113
11/7/2024	15:00:00	7.5	0.000	0	21,305	12.2	113
11/7/2024	15:15:00	7.5	0.000	0	21,305	12.8	114
11/7/2024	15:30:00	7.5	0.450	10.4	21,306	12.9	114
11/7/2024	15:45:00	7.5	0.454	0	21,313	11.5	114
11/7/2024	16:00:00	7.5	0.465	0	21,320	11.5	114
11/7/2024	16:15:00	7.5	0.461	0	21,326	11.4	113
11/7/2024	16:30:00	7.5	0.000	0	21,330	11.6	112
11/7/2024	16:45:00	7.5	0.000	0	21,330	11.9	112
11/7/2024	17:00:00	7.5	0.000	0	21,330	12.3	112
11/7/2024	17:15:00	7.5	0.000	0	21,330	12.5	112

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/7/2024	17:30:00	7.5	0.457	0	21,335	11.3	111
11/7/2024	17:45:00	7.5	0.446	0	21,342	11.3	112
11/7/2024	18:00:00	7.5	0.000	0	21,347	11.6	112
11/7/2024	18:15:00	7.5	0.000	0	21,348	11.6	112
11/7/2024	18:30:00	7.5	0.000	0	21,348	12	111
11/7/2024	18:45:00	7.5	0.000	0	21,348	12.2	111
11/7/2024	19:00:00	7.5	0.457	0	21,354	11.2	112
11/7/2024	19:15:00	7.5	0.469	0	21,361	11.2	111
11/7/2024	19:30:00	7.5	0.473	0	21,368	11.2	112
11/7/2024	19:45:00	7.5	0.000	0	21,371	11.5	113
11/7/2024	20:00:00	7.5	0.000	0	21,371	12	113
11/7/2024	20:15:00	7.5	0.000	0	21,371	12.6	114
11/7/2024	20:30:00	7.5	0.000	0	21,371	13	113
11/7/2024	20:45:00	7.5	0.000	0	21,371	13.4	114
11/7/2024	21:00:00	7.5	0.401	21.5	21,371	13.8	114
11/7/2024	21:15:00	7.5	0.457	0	21,378	11.4	114
11/7/2024	21:30:00	7.5	0.457	0	21,385	11.4	114
11/7/2024	21:45:00	7.5	0.469	0	21,392	11.4	114
11/7/2024	22:00:00	7.5	0.454	0	21,399	11.4	114
11/7/2024	22:15:00	7.5	0.000	0	21,402	11.7	114
11/7/2024	22:30:00	7.5	0.000	0	21,402	12.3	114
11/7/2024	22:45:00	7.5	0.000	0	21,402	12.9	114
11/7/2024	23:00:00	7.5	0.457	0	21,405	12	114
11/7/2024	23:15:00	7.5	0.454	0	21,412	11.5	114
11/7/2024	23:30:00	7.5	0.450	0	21,419	11.5	114

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/7/2024	23:45:00	7.6	0.461	0	21,425	11.5	114
11/8/2024	0:00:00	7.5	0.000	0	21,426	12	114
11/8/2024	0:15:00	7.5	0.000	0	21,426	12.6	114
11/8/2024	0:30:00	7.5	0.000	0	21,426	13.2	114
11/8/2024	0:45:00	7.5	0.454	0	21,429	12.4	114
11/8/2024	1:00:00	7.5	0.454	0	21,435	11.5	114
11/8/2024	1:15:00	7.6	0.442	0	21,442	11.5	114
11/8/2024	1:30:00	7.6	0.446	0	21,449	11.5	114
11/8/2024	1:45:00	7.6	0.000	0	21,451	11.9	114
11/8/2024	2:00:00	7.5	0.000	0	21,451	12.5	114
11/8/2024	2:15:00	7.5	0.000	0	21,451	13.2	115
11/8/2024	2:30:00	7.5	0.000	0	21,451	13.7	114
11/8/2024	2:45:00	7.6	0.454	0	21,458	11.5	114
11/8/2024	3:00:00	7.6	0.446	0	21,464	11.5	114
11/8/2024	3:15:00	7.6	0.442	0	21,471	11.5	114
11/8/2024	3:30:00	7.6	0.000	0	21,476	11.7	114
11/8/2024	3:45:00	7.6	0.000	0	21,476	12.3	114
11/8/2024	4:00:00	7.6	0.000	0	21,476	12.9	114
11/8/2024	4:15:00	7.5	0.000	0	21,476	13.6	114
11/8/2024	4:30:00	7.6	0.446	0	21,480	11.6	114
11/8/2024	4:45:00	7.6	0.446	0	21,486	11.5	114
11/8/2024	5:00:00	7.5	0.200	0	21,492	11.9	114
11/8/2024	5:15:00	7.6	0.000	0	21,493	12.1	114
11/8/2024	5:30:00	7.5	0.000	0	21,493	12.6	114
11/8/2024	5:45:00	7.6	0.461	0	21,494	13.5	114

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/8/2024	6:00:00	7.6	0.457	0	21,500	11.5	114
11/8/2024	6:15:00	7.6	0.450	0	21,507	11.5	114
11/8/2024	6:30:00	7.6	0.457	0	21,514	11.5	114
11/8/2024	6:45:00	7.6	0.442	0	21,521	11.5	114
11/8/2024	7:00:00	7.6	0.442	0	21,527	11.6	114
11/8/2024	7:15:00	7.6	0.000	0	21,532	11.8	114
11/8/2024	7:30:00	7.6	0.000	0	21,532	12.4	114
11/8/2024	7:45:00	7.6	0.000	0	21,532	13.1	114
11/8/2024	8:00:00	7.6	0.000	0	21,532	13.7	115
11/8/2024	8:15:00	7.6	0.431	0	21,536	11.7	114
11/8/2024	8:30:00	7.6	0.454	0	21,543	11.6	114
11/8/2024	8:45:00	7.6	0.446	0	21,549	11.5	114
11/8/2024	9:00:00	7.6	0.431	0	21,556	11.5	114
11/8/2024	9:15:00	7.6	0.000	0	21,557	11.8	112
11/8/2024	9:30:00	7.6	0.000	0	21,557	12.1	111
11/8/2024	9:45:00	7.6	0.435	0	21,560	12.4	113
11/8/2024	10:00:00	7.6	0.431	0	21,567	11.4	113
11/8/2024	10:15:00	7.6	0.438	0	21,573	11.5	113
11/8/2024	10:30:00	7.6	0.427	0	21,580	11.5	114
11/8/2024	10:45:00	7.6	0.438	0	21,587	11.6	114
11/8/2024	11:00:00	7.6	0.000	0	21,587	12	114
11/8/2024	11:15:00	7.6	0.446	0	21,590	12.9	114
11/8/2024	11:30:00	7.6	0.435	0	21,597	11.7	114
11/8/2024	11:45:00	7.6	0.442	0	21,604	11.7	114
11/8/2024	12:00:00	7.6	0.450	0	21,611	12	114

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/8/2024	12:15:00	7.6	0.454	0	21,617	12.3	114
11/8/2024	12:30:00	7.6	0.000	0	21,620	12.9	114
11/8/2024	12:45:00	7.6	0.000	0	21,620	13.3	114
11/8/2024	13:00:00	7.6	0.000	0	21,620	13.8	114
11/8/2024	13:15:00	7.6	0.000	0	21,620	14.2	114
11/8/2024	13:30:00	7.6	0.000	0	21,620	14.7	114
11/8/2024	13:45:00	7.6	0.000	0	21,620	14.9	253
11/8/2024	14:00:00	7.5	0.000	0	21,620	15.2	252
11/8/2024	14:15:00	7.5	0.000	0	21,620	15.5	251
11/8/2024	14:30:00	7.5	0.000	0	21,620	15.7	251
11/8/2024	14:45:00	7.5	0.431	0	21,624	16	251
11/8/2024	15:00:00	7.6	0.435	0	21,631	12	114
11/8/2024	15:15:00	7.6	0.420	0	21,637	11.9	113
11/8/2024	15:30:00	7.6	0.416	0	21,644	11.9	113
11/8/2024	15:45:00	7.6	0.435	0	21,650	11.9	113
11/8/2024	16:00:00	7.6	0.408	0	21,656	11.9	113
11/8/2024	16:15:00	7.6	0.412	0	21,663	11.9	113
11/8/2024	16:30:00	7.6	0.000	0	21,663	12.2	112
11/8/2024	16:45:00	7.6	0.000	0	21,663	12.7	113
11/8/2024	17:00:00	7.6	0.000	0	21,663	13	113
11/8/2024	17:15:00	7.6	0.000	0	21,663	13.3	112
11/8/2024	17:30:00	7.6	0.000	0	21,663	13.6	113
11/8/2024	17:45:00	7.6	0.000	0	21,663	13.8	114
11/8/2024	18:00:00	7.5	0.446	0	21,667	14.6	113
11/8/2024	18:15:00	7.6	0.431	0	21,674	14.3	113

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/8/2024	18:30:00	7.6	0.450	0	21,681	14.4	113
11/8/2024	18:45:00	7.5	0.438	0	21,687	14.6	113
11/8/2024	19:00:00	7.5	0.431	0	21,694	14.9	113
11/8/2024	19:15:00	7.5	0.416	0	21,700	14.9	113
11/8/2024	19:30:00	7.5	0.476	0	21,707	13.1	114
11/8/2024	19:45:00	7.5	0.000	0	21,708	12.8	112
11/8/2024	20:00:00	7.5	0.000	0	21,708	13.1	113
11/8/2024	20:15:00	7.5	0.000	0	21,708	13.3	112
11/8/2024	20:30:00	7.5	0.000	0	21,708	13.6	113
11/8/2024	20:45:00	7.5	0.480	0	21,715	14.3	114
11/8/2024	21:00:00	7.5	0.488	0	21,722	14.7	114
11/8/2024	21:15:00	7.5	0.457	0	21,729	15.1	114
11/8/2024	21:30:00	7.5	0.000	0	21,734	15.5	114
11/8/2024	21:45:00	7.5	0.000	0	21,734	15.9	114
11/8/2024	22:00:00	7.5	0.000	0	21,734	16.2	114
11/8/2024	22:15:00	7.5	0.000	0	21,734	16.4	116
11/8/2024	22:30:00	7.5	0.484	0	21,735	16.6	114
11/8/2024	22:45:00	7.5	0.476	0	21,741	15.9	114
11/8/2024	23:00:00	7.5	0.495	0	21,748	13.5	114
11/8/2024	23:15:00	7.5	0.465	0	21,755	13.6	114
11/8/2024	23:30:00	7.5	0.473	0	21,762	13.8	114
11/8/2024	23:45:00	7.5	0.469	0	21,769	14.2	114
11/9/2024	0:00:00	7.5	0.469	0	21,776	14.8	114
11/9/2024	0:15:00	7.5	0.454	0	21,783	15.3	116
11/9/2024	0:30:00	7.5	0.442	0	21,790	15.8	116

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/9/2024	0:45:00	7.5	0.454	0	21,797	16.2	116
11/9/2024	1:00:00	7.5	0.000	0	21,798	16.5	116
11/9/2024	1:15:00	7.5	0.000	0	21,798	16.9	249
11/9/2024	1:30:00	7.5	0.454	0	21,802	17.2	247
11/9/2024	1:45:00	7.5	0.446	0	21,809	17.5	247
11/9/2024	2:00:00	7.5	0.450	0	21,815	17.7	247
11/9/2024	2:15:00	7.5	0.435	0	21,822	17.9	247
11/9/2024	2:30:00	7.5	0.000	0	21,824	18.1	247
11/9/2024	2:45:00	7.5	0.000	0	21,824	18.3	247
11/9/2024	3:00:00	7.5	0.450	0	21,829	18.4	248
11/9/2024	3:15:00	7.5	0.435	0	21,835	18.6	249
11/9/2024	3:30:00	7.4	0.450	0	21,842	18.7	247
11/9/2024	3:45:00	7.4	0.000	0	21,848	18.9	247
11/9/2024	4:00:00	7.4	0.000	0	21,848	19	247
11/9/2024	4:15:00	7.4	0.457	0	21,849	19	249
11/9/2024	4:30:00	7.4	0.427	0	21,855	19.1	250
11/9/2024	4:45:00	7.4	0.438	0	21,862	19.2	251
11/9/2024	5:00:00	7.4	0.000	0	21,865	19.3	247
11/9/2024	5:15:00	7.4	0.431	0	21,866	19.3	249
11/9/2024	5:30:00	7.4	0.435	0	21,872	19.4	248
11/9/2024	5:45:00	7.4	0.000	0	21,874	19.5	249
11/9/2024	6:00:00	7.3	0.000	0	21,874	19.5	247
11/9/2024	6:15:00	7.3	0.435	0	21,877	19.6	247
11/9/2024	6:30:00	7.3	0.000	0	21,882	19.6	247
11/9/2024	6:45:00	7.3	0.000	0	21,882	19.7	247

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/9/2024	7:00:00	7.3	0.000	0	21,882	19.7	248
11/9/2024	7:15:00	7.3	0.431	0	21,888	19.7	249
11/9/2024	7:30:00	7.3	0.427	0	21,895	19.7	249
11/9/2024	7:45:00	7.3	0.416	0	21,901	19.7	248
11/9/2024	8:00:00	7.3	0.000	0	21,904	19.7	249
11/9/2024	8:15:00	7.3	0.427	0	21,908	19.8	248
11/9/2024	8:30:00	7.3	0.000	0	21,908	19.8	247
11/9/2024	8:45:00	7.3	0.000	0	21,908	19.5	247
11/9/2024	9:00:00	7.3	0.000	0	21,908	19.2	248
11/9/2024	9:15:00	7.3	0.000	0	21,908	18.9	247
11/9/2024	9:30:00	7.3	0.000	0	21,908	18.7	250
11/9/2024	9:45:00	7.3	0.000	0	21,908	18.5	248
11/9/2024	10:00:00	7.3	0.000	0	21,908	18.4	250
11/9/2024	10:15:00	7.3	0.000	0	21,908	18.2	247
11/9/2024	10:30:00	7.4	0.423	0	21,910	18.4	250
11/9/2024	10:45:00	7.5	0.450	0	21,916	12.3	113
11/9/2024	11:00:00	7.5	0.431	0	21,923	12	113
11/9/2024	11:15:00	7.6	0.420	0	21,929	12	113
11/9/2024	11:30:00	7.6	0.423	0	21,935	11.9	113
11/9/2024	11:45:00	7.6	0.420	0	21,942	11.9	112
11/9/2024	12:00:00	7.6	0.420	0	21,948	11.9	113
11/9/2024	12:15:00	7.6	0.393	0	21,954	11.9	113
11/9/2024	12:30:00	7.6	0.416	0	21,960	12	113
11/9/2024	12:45:00	7.6	0.397	0	21,966	12.1	113
11/9/2024	13:00:00	7.5	0.412	0	21,972	12.1	114

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/9/2024	13:15:00	7.5	0.412	0	21,978	12.3	111
11/9/2024	13:30:00	7.5	0.000	0	21,979	12.4	111
11/9/2024	13:45:00	7.5	0.000	0	21,979	12.7	112
11/9/2024	14:00:00	7.5	0.000	0	21,979	12.9	111
11/9/2024	14:15:00	7.5	0.000	0	21,979	13.1	111
11/9/2024	14:30:00	7.5	0.000	0	21,979	13.2	111
11/9/2024	14:45:00	7.5	0.408	0	21,983	12.6	111
11/9/2024	15:00:00	7.5	0.219	0	21,989	12	112
11/9/2024	15:15:00	7.5	0.431	0	21,993	12.3	111
11/9/2024	15:30:00	7.5	0.427	0	21,999	12.6	112
11/9/2024	15:45:00	7.5	0.412	0	22,005	12.8	112
11/9/2024	16:00:00	7.5	0.404	0	22,011	13.1	112
11/9/2024	16:15:00	7.5	0.397	0	22,018	13.4	112
11/9/2024	16:30:00	7.5	0.000	0	22,019	13.7	111
11/9/2024	16:45:00	7.5	0.000	0	22,019	13.8	112
11/9/2024	17:00:00	7.5	0.000	0	22,019	13.9	112
11/9/2024	17:15:00	7.5	0.000	0	22,019	14	112
11/9/2024	17:30:00	7.5	0.000	0	22,019	14.1	111
11/9/2024	17:45:00	7.5	0.404	0	22,022	14.4	111
11/9/2024	18:00:00	7.5	0.401	0	22,028	12.5	112
11/9/2024	18:15:00	7.5	0.397	0	22,034	12.2	112
11/9/2024	18:30:00	7.5	0.386	0	22,040	12.3	111
11/9/2024	18:45:00	7.6	0.374	0	22,046	12.5	112
11/9/2024	19:00:00	7.6	0.000	0	22,046	12.6	112
11/9/2024	19:15:00	7.6	0.000	0	22,046	12.8	111

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/9/2024	19:30:00	7.6	0.397	0	22,048	13	111
11/9/2024	19:45:00	7.5	0.382	0	22,054	13.5	112
11/9/2024	20:00:00	7.6	0.370	0	22,060	13.9	113
11/9/2024	20:15:00	7.5	0.374	0	22,065	14.4	113
11/9/2024	20:30:00	7.5	0.000	0	22,071	14.7	114
11/9/2024	20:45:00	7.5	0.000	0	22,071	15	114
11/9/2024	21:00:00	7.5	0.000	0	22,071	15.3	253
11/9/2024	21:15:00	7.5	0.000	0	22,071	15.5	251
11/9/2024	21:30:00	7.5	0.000	0	22,071	15.7	250
11/9/2024	21:45:00	7.6	0.518	0	22,073	11.7	113
11/9/2024	22:00:00	7.6	0.000	0	22,074	12	113
11/9/2024	22:15:00	7.6	0.000	0	22,074	12.4	113
11/9/2024	22:30:00	7.6	0.484	0	22,077	11.5	112
11/9/2024	22:45:00	7.6	0.503	0	22,085	11.5	113
11/9/2024	23:00:00	7.6	0.484	0	22,092	11.6	113
11/9/2024	23:15:00	7.6	0.473	0	22,100	11.6	114
11/9/2024	23:30:00	7.6	0.000	0	22,103	11.9	114
11/9/2024	23:45:00	7.6	0.382	0	22,103	12.4	114
11/10/2024	0:00:00	7.6	0.480	0	22,110	11.6	114
11/10/2024	0:15:00	7.6	0.469	0	22,117	11.6	114
11/10/2024	0:30:00	7.6	0.476	0	22,124	11.6	114
11/10/2024	0:45:00	7.6	0.454	0	22,131	11.6	114
11/10/2024	1:00:00	7.6	0.000	0	22,138	11.6	114
11/10/2024	1:15:00	7.6	0.000	0	22,140	11.9	114
11/10/2024	1:30:00	7.6	0.000	0	22,140	12.5	114

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/10/2024	1:45:00	7.6	0.000	0	22,140	13.1	114
11/10/2024	2:00:00	7.6	0.000	0	22,140	13.6	114
11/10/2024	2:15:00	7.6	0.000	0	22,140	14.1	114
11/10/2024	2:30:00	7.6	0.469	0	22,142	11.9	114
11/10/2024	2:45:00	7.6	0.461	0	22,149	11.6	114
11/10/2024	3:00:00	7.6	0.000	0	22,150	12.1	114
11/10/2024	3:15:00	7.6	0.000	0	22,150	12.8	114
11/10/2024	3:30:00	7.6	0.000	0	22,150	13.4	114
11/10/2024	3:45:00	7.6	0.000	0	22,150	13.9	114
11/10/2024	4:00:00	7.6	0.476	0	22,152	12.5	114
11/10/2024	4:15:00	7.6	0.480	0	22,159	11.5	114
11/10/2024	4:30:00	7.6	0.473	0	22,166	11.5	114
11/10/2024	4:45:00	7.6	0.457	0	22,173	11.5	114
11/10/2024	5:00:00	7.6	0.000	0	22,177	11.8	114
11/10/2024	5:15:00	7.6	0.000	0	22,177	12.3	114
11/10/2024	5:30:00	7.6	0.465	1.5	22,180	11.7	114
11/10/2024	5:45:00	7.6	0.457	0	22,185	12.1	114
11/10/2024	6:00:00	7.6	0.446	0.5	22,192	11.5	114
11/10/2024	6:15:00	7.6	0.420	1.2	22,198	11.6	114
11/10/2024	6:30:00	7.6	0.435	1.4	22,205	11.6	114
11/10/2024	6:45:00	7.6	0.435	1.3	22,212	11.6	114
11/10/2024	7:00:00	7.6	0.000	1.1	22,213	12.1	114
11/10/2024	7:15:00	7.6	0.000	1	22,213	12.7	114
11/10/2024	7:30:00	7.6	0.454	0	22,214	13.6	114
11/10/2024	7:45:00	7.6	0.435	0	22,221	12.5	114

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/10/2024	8:00:00	7.6	0.454	0	22,228	12.5	114
11/10/2024	8:15:00	7.6	0.412	0	22,234	12.7	114
11/10/2024	8:30:00	7.6	0.000	0	22,236	12.9	113
11/10/2024	8:45:00	7.6	0.000	0.2	22,236	13.1	112
11/10/2024	9:00:00	7.6	0.000	0	22,236	13.3	111
11/10/2024	9:15:00	7.6	0.454	0	22,237	13.5	111
11/10/2024	9:30:00	7.6	0.435	0	22,244	12.8	112
11/10/2024	9:45:00	7.6	0.450	0	22,250	11.9	112
11/10/2024	10:00:00	7.6	0.431	0.2	22,257	11.8	112
11/10/2024	10:15:00	7.6	0.416	0.3	22,263	12	112
11/10/2024	10:30:00	7.6	0.431	0.2	22,269	12.3	113
11/10/2024	10:45:00	7.6	0.000	0.1	22,274	12.8	113
11/10/2024	11:00:00	7.6	0.000	0.2	22,274	13.1	113
11/10/2024	11:15:00	7.6	0.000	0.1	22,274	13.5	113
11/10/2024	11:30:00	7.6	0.000	0	22,274	13.9	114
11/10/2024	11:45:00	7.6	0.000	0.1	22,274	14.2	114
11/10/2024	12:00:00	7.6	0.000	0	22,274	14.4	113
11/10/2024	12:15:00	7.6	0.000	0	22,274	14.5	112
11/10/2024	12:30:00	7.6	0.000	0	22,274	14.7	113
11/10/2024	12:45:00	7.6	0.000	0	22,274	14.9	113
11/10/2024	13:00:00	7.6	0.000	0	22,274	14.9	113
11/10/2024	13:15:00	7.5	0.000	0	22,274	14.9	112
11/10/2024	13:30:00	7.5	0.000	0	22,274	14.9	111
11/10/2024	13:45:00	7.5	0.000	0	22,274	14.9	112
11/10/2024	14:00:00	7.5	0.000	0.2	22,274	14.9	111

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/10/2024	14:15:00	7.5	0.454	0.2	22,276	14.9	111
11/10/2024	14:30:00	7.6	0.435	0	22,283	11.4	111
11/10/2024	14:45:00	7.6	0.446	0	22,289	11.3	111
11/10/2024	15:00:00	7.6	0.446	0	22,296	11.3	111
11/10/2024	15:15:00	7.6	0.435	0	22,303	11.3	111
11/10/2024	15:30:00	7.6	0.431	0	22,309	11.3	111
11/10/2024	15:45:00	7.6	0.416	0	22,316	11.4	111
11/10/2024	16:00:00	7.6	0.000	0	22,322	11.5	112
11/10/2024	16:15:00	7.6	0.000	0	22,322	12	113
11/10/2024	16:30:00	7.6	0.000	0	22,322	12.5	113
11/10/2024	16:45:00	7.6	0.000	0	22,322	13	113
11/10/2024	17:00:00	7.6	0.000	0	22,322	13.4	114
11/10/2024	17:15:00	7.6	0.000	0	22,322	13.8	113
11/10/2024	17:45:00	7.6	0.000	0	22,322	14.2	113
11/10/2024	18:00:00	7.6	0.000	0	22,322	14.4	113
11/10/2024	18:15:00	7.6	0.144	0	22,326	15.2	252
11/10/2024	18:30:00	7.6	0.412	0	22,332	11.5	113
11/10/2024	18:45:00	7.6	0.420	0	22,338	11.4	112
11/10/2024	19:00:00	7.6	0.420	0	22,344	11.3	112
11/10/2024	19:15:00	7.6	0.427	0	22,351	11.3	111
11/10/2024	19:30:00	7.6	0.408	0	22,357	11.3	112
11/10/2024	19:45:00	7.6	0.416	0	22,363	11.3	111
11/10/2024	20:00:00	7.6	0.401	0	22,369	11.4	112
11/10/2024	20:15:00	7.6	0.404	0	22,375	11.4	113
11/10/2024	20:30:00	7.6	0.412	0	22,381	11.5	114

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/10/2024	20:45:00	7.6	0.000	0	22,382	11.9	114
11/10/2024	21:00:00	7.6	0.000	0	22,382	12.4	114
11/10/2024	21:15:00	7.6	0.000	0	22,382	13	114
11/10/2024	21:30:00	7.6	0.000	0	22,382	13.5	114
11/10/2024	21:45:00	7.6	0.000	0	22,382	13.9	114
11/10/2024	22:00:00	7.6	0.000	0	22,382	14.3	114
11/10/2024	22:15:00	7.6	0.000	0	22,382	14.6	114
11/10/2024	22:30:00	7.6	0.000	0	22,382	14.8	113
11/10/2024	22:45:00	7.6	0.431	0	22,384	15.2	114
11/10/2024	23:00:00	7.6	0.412	0	22,390	15.4	252
11/10/2024	23:15:00	7.6	0.416	0	22,396	15.6	251
11/10/2024	23:30:00	7.6	0.416	0	22,402	15.8	252
11/10/2024	23:45:00	7.6	0.420	0	22,408	16.1	250

Table 3. In-Situ Parameters

Date	Time	Temperature °C	DO mg/L	Conductivity SPC-uS/cm	SAL-ppt	pH	ORP (mV)	NTU
11/04/2024	09:17:09AM	11.3	11.03	119.5	0.06	7.2	109.5	1.63
11/05/2024	10:18:30AM	11.7	11.00	122.3	0.06	7.37	129.6	1.02
11/06/2024	01:32:20PM	11.5	11.7	118.8	0.06	7.04	110.3	0.92
11/07/2024	09:01:13PM	11.5	10.03	122.9	0.06	6.68	181.4	1.01
11/08/2024	11:50:12AM	13.6	10.09	122.3	0.06	7.66	127.1	0.89
11/09/2024	04:13:11AM	11.2	10.98	119.1	0.06	7.60	120.9	1.04
11/10/2024	06:12:37AM	11.4	11.38	121.2	0.06	7.79	118.9	2.12

3. Calibration Log:

Table 4. Calibration Log

Date	Unit	pH	Conductivity/Temp.	Salinity	NTU
11/03/2024	YSI	✓	✓	✓	✓
11/05/2024	WTP	✓	N/A	N/A	✓

APPENDIX A: WTP

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/4/2024	0:00:00	7.4	0.000	0	20,099	Open	05:07:26 PM Oct-24-2024	11.6	114
11/4/2024	0:15:00	7.4	0.000	0	20,099	Open	05:07:26 PM Oct-24-2024	12.2	114
11/4/2024	0:30:00	7.4	0.000	0	20,099	Open	05:07:26 PM Oct-24-2024	12.8	114
11/4/2024	0:45:00	7.4	0.435	0	20,101	Open	05:07:26 PM Oct-24-2024	11.8	114
11/4/2024	1:00:00	7.4	0.454	4.9	20,108	Open	05:07:26 PM Oct-24-2024	11.2	114
11/4/2024	1:15:00	7.4	0.427	0	20,114	Open	05:07:26 PM Oct-24-2024	11.1	113
11/4/2024	1:30:00	7.4	0.438	0	20,121	Open	05:07:26 PM Oct-24-2024	11.1	113
11/4/2024	1:45:00	7.4	0.420	0	20,127	Open	05:07:26 PM Oct-24-2024	11.1	114
11/4/2024	2:00:00	7.4	0.000	0	20,128	Open	05:07:26 PM Oct-24-2024	11.4	113
11/4/2024	2:15:00	7.4	0.000	0	20,128	Open	05:07:26 PM Oct-24-2024	11.9	113
11/4/2024	2:30:00	7.4	0.000	0	20,128	Open	05:07:26 PM Oct-24-2024	12.4	114
11/4/2024	2:45:00	7.4	0.416	0	20,130	Open	05:07:26 PM Oct-24-2024	12.7	114
11/4/2024	3:00:00	7.4	0.412	0.3	20,137	Open	05:07:26 PM Oct-24-2024	11.3	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/4/2024	3:15:00	7.4	0.412	1.4	20,143	Open	05:07:26 PM Oct-24-2024	11.3	114
11/4/2024	3:30:00	7.4	0.408	2.2	20,146	Open	05:07:26 PM Oct-24-2024	11.3	114
11/4/2024	3:45:00	7.4	0.408	2	20,152	Open	05:07:26 PM Oct-24-2024	11.2	114
11/4/2024	4:00:00	7.4	0.389	2	20,158	Open	05:07:26 PM Oct-24-2024	11.2	114
11/4/2024	4:15:00	7.4	0.389	1.8	20,164	Open	05:07:26 PM Oct-24-2024	11.2	114
11/4/2024	4:30:00	7.4	0.386	2.1	20,170	Open	05:07:26 PM Oct-24-2024	11.2	114
11/4/2024	4:45:00	7.4	0.000	1.7	20,172	Open	05:07:26 PM Oct-24-2024	11.5	114
11/4/2024	5:00:00	7.4	0.000	1.6	20,172	Open	05:07:26 PM Oct-24-2024	12	114
11/4/2024	5:15:00	7.4	0.374	1.7	20,175	Open	05:07:26 PM Oct-24-2024	12.2	114
11/4/2024	5:30:00	7.4	0.389	1.7	20,181	Open	05:07:26 PM Oct-24-2024	11.7	114
11/4/2024	5:45:00	7.4	0.000	1.8	20,184	Open	05:07:26 PM Oct-24-2024	11.8	114
11/4/2024	6:00:00	7.4	0.000	1.7	20,184	Open	05:07:26 PM Oct-24-2024	12.4	114
11/4/2024	6:15:00	7.4	0.000	1.7	20,184	Open	05:07:26 PM Oct-24-2024	13	114
11/4/2024	6:30:00	7.4	0.382	1.5	20,185	Open	05:07:26 PM Oct-24-2024	13.5	114
11/4/2024	6:45:00	7.4	0.378	1.6	20,191	Open	05:07:26 PM Oct-24-2024	12.1	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/4/2024	7:00:00	7.4	0.378	1.2	20,196	Open	05:07:26 PM Oct-24-2024	11.9	114
11/4/2024	7:15:00	7.4	0.370	0.9	20,202	Open	05:07:26 PM Oct-24-2024	12	114
11/4/2024	7:30:00	7.4	0.370	1	20,208	Open	05:07:26 PM Oct-24-2024	12.1	114
11/4/2024	7:45:00	7.4	0.000	0.8	20,209	Open	05:07:26 PM Oct-24-2024	12.3	114
11/4/2024	8:00:00	7.4	0.000	0.9	20,209	Open	05:07:26 PM Oct-24-2024	12.9	114
11/4/2024	8:15:00	7.4	0.000	0.8	20,209	Open	05:07:26 PM Oct-24-2024	13.5	114
11/4/2024	8:30:00	7.4	0.386	0.7	20,210	Open	05:07:26 PM Oct-24-2024	13.8	114
11/4/2024	8:45:00	7.4	0.367	0.6	20,216	Open	05:07:26 PM Oct-24-2024	10.7	113
11/4/2024	9:00:00	7.4	0.370	0.5	20,222	Open	05:07:26 PM Oct-24-2024	10.7	113
11/4/2024	9:15:00	7.4	0.370	0.5	20,227	Open	05:07:26 PM Oct-24-2024	10.7	113
11/4/2024	9:30:00	7.4	0.374	0.4	20,233	Open	05:07:26 PM Oct-24-2024	10.7	113
11/4/2024	9:45:00	7.4	0.355	0.2	20,238	Open	05:07:26 PM Oct-24-2024	10.6	113
11/4/2024	10:00:00	7.4	0.363	0	20,243	Open	05:07:26 PM Oct-24-2024	10.5	112
11/4/2024	10:15:00	7.4	0.352	0	20,249	Open	05:07:26 PM Oct-24-2024	10.4	112
11/4/2024	10:30:00	7.4	0.336	0	20,254	Open	05:07:26 PM Oct-24-2024	10.4	112

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/4/2024	10:45:00	7.4	0.336	0	20,260	Open	05:07:26 PM Oct-24-2024	10.3	113
11/4/2024	11:00:00	7.4	0.329	0	20,265	Open	05:07:26 PM Oct-24-2024	10.3	112
11/4/2024	11:15:00	7.4	0.336	0	20,270	Open	05:07:26 PM Oct-24-2024	10.3	111
11/4/2024	11:30:00	7.4	0.348	0	20,275	Open	05:07:26 PM Oct-24-2024	10.6	111
11/4/2024	11:45:00	7.4	0.000	0	20,279	Open	05:07:26 PM Oct-24-2024	11.1	112
11/4/2024	12:00:00	7.4	0.000	0	20,279	Open	05:07:26 PM Oct-24-2024	11.4	111
11/4/2024	12:15:00	7.4	0.000	0	20,279	Open	05:07:26 PM Oct-24-2024	11.8	112
11/4/2024	12:30:00	7.4	0.000	0	20,279	Open	05:07:26 PM Oct-24-2024	12.1	111
11/4/2024	12:45:00	7.4	0.355	0	20,284	Open	05:07:26 PM Oct-24-2024	12.2	111
11/4/2024	13:00:00	7.4	0.359	0	20,289	Open	05:07:26 PM Oct-24-2024	12.5	112
11/4/2024	13:15:00	7.4	0.355	0	20,295	Open	05:07:26 PM Oct-24-2024	12.8	112
11/4/2024	13:30:00	7.3	0.352	0	20,300	Open	05:07:26 PM Oct-24-2024	13	111
11/4/2024	13:45:00	7.3	0.359	0	20,305	Open	05:07:26 PM Oct-24-2024	13.2	111
11/4/2024	14:00:00	7.3	0.344	0	20,311	Open	05:07:26 PM Oct-24-2024	13.4	111
11/4/2024	14:15:00	7.3	0.348	0	20,316	Open	05:07:26 PM Oct-24-2024	13.6	112

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/4/2024	14:30:00	7.3	0.348	0	20,322	Open	05:07:26 PM Oct-24-2024	13.7	111
11/4/2024	14:45:00	7.3	0.340	0	20,327	Open	05:07:26 PM Oct-24-2024	13.9	112
11/4/2024	15:00:00	7.3	0.340	0	20,332	Open	05:07:26 PM Oct-24-2024	14	111
11/4/2024	15:15:00	7.4	0.340	0	20,337	Open	05:07:26 PM Oct-24-2024	14.7	111
11/4/2024	15:30:00	7.3	0.344	0	20,342	Open	05:07:26 PM Oct-24-2024	14.8	112
11/4/2024	15:45:00	7.3	0.321	0	20,347	Open	05:07:26 PM Oct-24-2024	14.8	113
11/4/2024	16:00:00	7.3	0.329	0	20,352	Open	05:07:26 PM Oct-24-2024	14.8	112
11/4/2024	16:15:00	7.3	0.386	0	20,357	Open	05:07:26 PM Oct-24-2024	14.9	112
11/4/2024	16:30:00	7.3	0.000	0	20,360	Open	05:07:26 PM Oct-24-2024	14.9	111
11/4/2024	16:45:00	7.3	0.000	0	20,361	Open	05:07:26 PM Oct-24-2024	14.9	112
11/4/2024	17:00:00	7.2	0.000	0	20,361	Open	05:07:26 PM Oct-24-2024	14.8	111
11/4/2024	17:15:00	7.3	0.000	0	20,361	Open	05:07:26 PM Oct-24-2024	14.8	111
11/4/2024	17:30:00	7.3	0.438	0	20,365	Open	05:07:26 PM Oct-24-2024	15.2	112
11/4/2024	17:45:00	7.4	0.499	0	20,372	Open	05:07:26 PM Oct-24-2024	10.9	112
11/4/2024	18:00:00	7.4	0.465	0	20,379	Open	05:07:26 PM Oct-24-2024	10.9	112

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/4/2024	18:15:00	7.4	0.473	0	20,386	Open	05:07:26 PM Oct-24-2024	10.8	111
11/4/2024	18:30:00	7.3	0.386	0	20,392	Open	05:07:26 PM Oct-24-2024	11.2	111
11/4/2024	18:45:00	7.4	0.000	0	20,392	Open	05:07:26 PM Oct-24-2024	11.2	111
11/4/2024	19:00:00	7.4	0.000	0	20,392	Open	05:07:26 PM Oct-24-2024	11.4	110
11/4/2024	19:15:00	7.4	0.461	0	20,397	Open	05:07:26 PM Oct-24-2024	11.8	111
11/4/2024	19:30:00	7.3	0.465	0	20,404	Open	05:07:26 PM Oct-24-2024	12.1	111
11/4/2024	19:45:00	7.3	0.457	0	20,411	Open	05:07:26 PM Oct-24-2024	12.5	113
11/4/2024	20:00:00	7.3	0.461	0	20,418	Open	05:07:26 PM Oct-24-2024	13	113
11/4/2024	20:15:00	7.3	0.000	0	20,419	Open	05:07:26 PM Oct-24-2024	13.4	113
11/4/2024	20:30:00	7.3	0.000	0	20,419	Open	05:07:26 PM Oct-24-2024	13.7	114
11/4/2024	20:45:00	7.3	0.000	0	20,419	Open	05:07:26 PM Oct-24-2024	14.1	113
11/4/2024	21:00:00	7.3	0.457	0	20,420	Open	05:07:26 PM Oct-24-2024	14.4	113
11/4/2024	21:15:00	7.3	0.450	0	20,427	Open	05:07:26 PM Oct-24-2024	14.7	114
11/4/2024	21:30:00	7.4	0.000	0	20,431	Open	05:07:26 PM Oct-24-2024	14.3	114
11/4/2024	21:45:00	7.4	0.000	0	20,431	Open	05:07:26 PM Oct-24-2024	14.4	113

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/4/2024	22:00:00	7.4	0.454	0.3	20,432	Open	05:07:26 PM Oct-24-2024	14.7	114
11/4/2024	22:15:00	7.4	0.469	0	20,439	Open	05:07:26 PM Oct-24-2024	10.8	114
11/4/2024	22:30:00	7.4	0.450	0	20,445	Open	05:07:26 PM Oct-24-2024	10.9	113
11/4/2024	22:45:00	7.4	0.454	0	20,452	Open	05:07:26 PM Oct-24-2024	10.8	113
11/4/2024	23:00:00	7.4	0.000	0	20,452	Open	05:07:26 PM Oct-24-2024	11.3	113
11/4/2024	23:15:00	7.4	0.000	0	20,452	Open	05:07:26 PM Oct-24-2024	11.9	114
11/4/2024	23:30:00	7.4	0.000	0	20,452	Open	05:07:26 PM Oct-24-2024	12.5	114
11/4/2024	23:45:00	7.4	0.461	0	20,455	Open	05:07:26 PM Oct-24-2024	11	114
11/5/2024	0:00:00	7.4	0.457	0	20,462	Open	05:07:26 PM Oct-24-2024	10.7	114
11/5/2024	0:15:00	7.4	0.438	0	20,469	Open	05:07:26 PM Oct-24-2024	10.8	113
11/5/2024	0:30:00	7.4	0.000	0	20,474	Open	05:07:26 PM Oct-24-2024	10.9	113
11/5/2024	0:45:00	7.4	0.000	0	20,474	Open	05:07:26 PM Oct-24-2024	11.4	114
11/5/2024	1:00:00	7.4	0.000	0	20,474	Open	05:07:26 PM Oct-24-2024	12	114
11/5/2024	1:15:00	7.4	0.000	0	20,474	Open	05:07:26 PM Oct-24-2024	12.5	113
11/5/2024	1:30:00	7.4	0.457	0	20,479	Open	05:07:26 PM Oct-24-2024	13	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/5/2024	1:45:00	7.4	0.438	0	20,485	Open	05:07:26 PM Oct-24-2024	13.5	114
11/5/2024	2:00:00	7.4	0.442	0	20,492	Open	05:07:26 PM Oct-24-2024	13.9	114
11/5/2024	2:15:00	7.4	0.000	0	20,496	Open	05:07:26 PM Oct-24-2024	14.3	114
11/5/2024	2:30:00	7.4	0.000	0	20,496	Open	05:07:26 PM Oct-24-2024	14.6	114
11/5/2024	2:45:00	7.4	0.000	0	20,496	Open	05:07:26 PM Oct-24-2024	15	114
11/5/2024	3:00:00	7.4	0.000	0	20,496	Open	05:07:26 PM Oct-24-2024	15.2	114
11/5/2024	3:15:00	7.4	0.442	0	20,502	Open	05:07:26 PM Oct-24-2024	15.5	114
11/5/2024	3:30:00	7.4	0.427	0	20,509	Open	05:07:26 PM Oct-24-2024	15.7	114
11/5/2024	3:45:00	7.4	0.438	0	20,516	Open	05:07:26 PM Oct-24-2024	16	114
11/5/2024	4:00:00	7.4	0.000	0	20,518	Open	05:07:26 PM Oct-24-2024	16.2	248
11/5/2024	4:15:00	7.4	0.000	0	20,518	Open	05:07:26 PM Oct-24-2024	16.4	248
11/5/2024	4:30:00	7.4	0.000	0	20,518	Open	05:07:26 PM Oct-24-2024	16.6	247
11/5/2024	4:45:00	7.4	0.438	0	20,520	Open	05:07:26 PM Oct-24-2024	16.7	247
11/5/2024	5:00:00	7.4	0.450	0	20,527	Open	05:07:26 PM Oct-24-2024	17	248
11/5/2024	5:15:00	7.3	0.442	0	20,534	Open	05:07:26 PM Oct-24-2024	17.1	248

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/5/2024	5:30:00	7.3	0.420	0	20,541	Open	05:07:26 PM Oct-24-2024	17.3	247
11/5/2024	5:45:00	7.3	0.427	0	20,547	Open	05:07:26 PM Oct-24-2024	17.4	248
11/5/2024	6:00:00	7.3	0.438	0	20,554	Open	05:07:26 PM Oct-24-2024	17.5	250
11/5/2024	6:15:00	7.3	0.420	0	20,560	Open	05:07:26 PM Oct-24-2024	17.6	248
11/5/2024	6:30:00	7.3	0.000	0	20,560	Open	05:07:26 PM Oct-24-2024	17.7	248
11/5/2024	6:45:00	7.3	0.000	0	20,560	Open	05:07:26 PM Oct-24-2024	17.8	250
11/5/2024	7:00:00	7.3	0.000	0	20,560	Open	05:07:26 PM Oct-24-2024	17.8	247
11/5/2024	7:15:00	7.3	0.416	0	20,562	Open	05:07:26 PM Oct-24-2024	17.9	247
11/5/2024	7:30:00	7.3	0.438	0	20,568	Open	05:07:26 PM Oct-24-2024	17.9	246
11/5/2024	7:45:00	7.3	0.427	0	20,575	Open	05:07:26 PM Oct-24-2024	18	248
11/5/2024	8:00:00	7.3	0.438	0	20,581	Open	05:07:26 PM Oct-24-2024	18	250
11/5/2024	8:15:00	7.3	0.000	0	20,583	Open	05:07:26 PM Oct-24-2024	18.1	250
11/5/2024	8:30:00	7.3	0.000	0	20,583	Open	05:07:26 PM Oct-24-2024	17.9	248
11/5/2024	8:45:00	7.3	0.000	0	20,583	Open	05:07:26 PM Oct-24-2024	17.6	250
11/5/2024	9:00:00	7.3	0.000	0	20,583	Open	05:07:26 PM Oct-24-2024	17.3	249

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/5/2024	9:15:00	7.4	0.423	0.1	20,589	Open	05:07:26 PM Oct-24-2024	10.6	113
11/5/2024	9:30:00	7.5	0.423	0.1	20,595	Open	05:07:26 PM Oct-24-2024	10.5	111
11/5/2024	9:45:00	7.5	0.423	0.2	20,601	Open	05:07:26 PM Oct-24-2024	10.4	111
11/5/2024	10:00:00	7.5	0.000	0.3	20,606	Open	05:07:26 PM Oct-24-2024	10.6	111
11/5/2024	10:15:00	7.5	0.000	0.3	20,606	Open	05:07:26 PM Oct-24-2024	10.9	111
11/5/2024	10:30:00	7.5	0.000	0.2	20,606	Open	05:07:26 PM Oct-24-2024	11.3	111
11/5/2024	10:45:00	7.5	0.000	0.2	20,606	Open	05:07:26 PM Oct-24-2024	11.6	111
11/5/2024	11:00:00	7.5	0.401	0.2	20,609	Open	05:07:26 PM Oct-24-2024	10.5	111
11/5/2024	11:15:00	7.5	0.412	0	20,616	Open	05:07:26 PM Oct-24-2024	10.5	112
11/5/2024	11:30:00	7.5	0.416	0	20,622	Open	05:07:26 PM Oct-24-2024	10.6	112
11/5/2024	11:45:00	7.5	0.397	0	20,628	Open	05:07:26 PM Oct-24-2024	10.5	113
11/5/2024	12:00:00	7.5	0.000	0	20,632	Open	05:07:26 PM Oct-24-2024	10.6	112
11/5/2024	12:15:00	7.5	0.000	0	20,632	Open	05:07:26 PM Oct-24-2024	11	111
11/5/2024	12:30:00	7.5	0.000	0	20,632	Open	05:07:26 PM Oct-24-2024	11.3	112
11/5/2024	12:45:00	7.5	0.420	0	20,636	Open	05:07:26 PM Oct-24-2024	12.1	111

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/5/2024	13:00:00	7.5	0.408	0	20,642	Open	05:07:26 PM Oct-24-2024	12.4	111
11/5/2024	13:15:00	7.5	0.408	0	20,648	Open	05:07:26 PM Oct-24-2024	12.7	112
11/5/2024	13:30:00	7.5	0.416	0	20,654	Open	05:07:26 PM Oct-24-2024	13.1	113
11/5/2024	13:45:00	7.5	0.404	0	20,661	Open	05:07:26 PM Oct-24-2024	13.3	113
11/5/2024	14:00:00	7.4	0.393	0	20,667	Open	05:07:26 PM Oct-24-2024	13.6	113
11/5/2024	14:15:00	7.4	0.404	0	20,673	Open	05:07:26 PM Oct-24-2024	13.9	113
11/5/2024	14:30:00	7.4	0.389	0	20,679	Open	05:07:26 PM Oct-24-2024	14.1	113
11/5/2024	14:45:00	7.4	0.000	0	20,681	Open	05:07:26 PM Oct-24-2024	12.5	114
11/5/2024	15:00:00	7.4	0.000	0	20,681	Open	05:07:26 PM Oct-24-2024	13	114
11/5/2024	15:15:00	7.4	0.000	0	20,681	Open	05:07:26 PM Oct-24-2024	13.3	113
11/5/2024	15:30:00	7.4	0.408	12.3	20,682	Open	05:07:26 PM Oct-24-2024	12.3	113
11/5/2024	15:45:00	7.4	0.389	0	20,688	Open	05:07:26 PM Oct-24-2024	11.4	113
11/5/2024	16:00:00	7.4	0.386	0	20,694	Open	05:07:26 PM Oct-24-2024	11.2	112
11/5/2024	16:15:00	7.4	0.367	0	20,700	Open	05:07:26 PM Oct-24-2024	11.2	111
11/5/2024	16:30:00	7.4	0.000	0	20,704	Open	05:07:26 PM Oct-24-2024	11.2	112

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/5/2024	16:45:00	7.4	0.000	0	20,704	Open	05:07:26 PM Oct-24-2024	11.6	113
11/5/2024	17:00:00	7.4	0.000	0	20,704	Open	05:07:26 PM Oct-24-2024	11.9	111
11/5/2024	17:15:00	7.4	0.000	0	20,704	Open	05:07:26 PM Oct-24-2024	12.2	111
11/5/2024	17:30:00	7.4	0.389	0	20,708	Open	05:07:26 PM Oct-24-2024	11	111
11/5/2024	17:45:00	7.4	0.408	0	20,714	Open	05:07:26 PM Oct-24-2024	11	111
11/5/2024	18:00:00	7.4	0.401	0	20,720	Open	05:07:26 PM Oct-24-2024	10.9	112
11/5/2024	18:15:00	7.5	0.397	0	20,726	Open	05:07:26 PM Oct-24-2024	11	111
11/5/2024	18:30:00	7.5	0.000	0	20,727	Open	05:07:26 PM Oct-24-2024	11.4	111
11/5/2024	18:45:00	7.4	0.000	0	20,727	Open	05:07:26 PM Oct-24-2024	11.7	112
11/5/2024	19:00:00	7.4	0.000	0	20,727	Open	05:07:26 PM Oct-24-2024	11.8	110
11/5/2024	19:15:00	7.4	0.386	0	20,729	Open	05:07:26 PM Oct-24-2024	11.9	111
11/5/2024	19:30:00	7.5	0.397	0	20,735	Open	05:07:26 PM Oct-24-2024	11.1	111
11/5/2024	19:45:00	7.5	0.370	0	20,741	Open	05:07:26 PM Oct-24-2024	10.9	112
11/5/2024	20:00:00	7.5	0.393	0	20,747	Open	05:07:26 PM Oct-24-2024	10.9	112
11/5/2024	20:15:00	7.5	0.000	0	20,750	Open	05:07:26 PM Oct-24-2024	11.3	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/5/2024	20:30:00	7.5	0.000	0	20,750	Open	05:07:26 PM Oct-24-2024	11.9	113
11/5/2024	20:45:00	7.5	0.000	0	20,750	Open	05:07:26 PM Oct-24-2024	12.5	113
11/5/2024	21:00:00	7.5	0.000	0	20,750	Open	05:07:26 PM Oct-24-2024	13	114
11/5/2024	21:15:00	7.5	0.000	0	20,755	Open	05:07:26 PM Oct-24-2024	13.3	113
11/5/2024	21:30:00	7.5	0.370	0	20,760	Open	05:07:26 PM Oct-24-2024	13.4	113
11/5/2024	21:45:00	7.4	0.382	0	20,765	Open	05:07:26 PM Oct-24-2024	12.5	113
11/5/2024	22:00:00	7.5	0.393	0	20,771	Open	05:07:26 PM Oct-24-2024	11.8	113
11/5/2024	22:15:00	7.5	0.363	0	20,777	Open	05:07:26 PM Oct-24-2024	11.6	111
11/5/2024	22:30:00	7.5	0.000	0	20,779	Open	05:07:26 PM Oct-24-2024	12	111
11/5/2024	22:45:00	7.5	0.000	0	20,779	Open	05:07:26 PM Oct-24-2024	12.3	112
11/5/2024	23:00:00	7.5	0.000	0	20,779	Open	05:07:26 PM Oct-24-2024	12.6	113
11/5/2024	23:15:00	7.5	0.000	0	20,779	Open	05:07:26 PM Oct-24-2024	12.8	111
11/5/2024	23:30:00	7.4	0.401	0	20,784	Open	05:07:26 PM Oct-24-2024	13.4	112
11/5/2024	23:45:00	7.4	0.386	0	20,790	Open	05:07:26 PM Oct-24-2024	13.2	113
11/6/2024	0:00:00	7.4	0.389	0	20,796	Open	05:07:26 PM Oct-24-2024	13.3	113

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/6/2024	0:15:00	7.4	0.000	0	20,801	Open	05:07:26 PM Oct-24-2024	13.6	114
11/6/2024	0:30:00	7.4	0.000	0	20,801	Open	05:07:26 PM Oct-24-2024	14	114
11/6/2024	0:45:00	7.4	0.000	0	20,801	Open	05:07:26 PM Oct-24-2024	14.2	113
11/6/2024	1:00:00	7.4	0.000	0	20,801	Open	05:07:26 PM Oct-24-2024	14.5	114
11/6/2024	1:15:00	7.4	0.374	0	20,804	Open	05:07:26 PM Oct-24-2024	14.8	114
11/6/2024	1:30:00	7.4	0.370	0	20,810	Open	05:07:26 PM Oct-24-2024	15.1	114
11/6/2024	1:45:00	7.4	0.370	0	20,816	Open	05:07:26 PM Oct-24-2024	15.4	114
11/6/2024	2:00:00	7.4	0.370	0	20,822	Open	05:07:26 PM Oct-24-2024	15.6	114
11/6/2024	2:15:00	7.4	0.000	0	20,824	Open	05:07:26 PM Oct-24-2024	15.9	114
11/6/2024	2:30:00	7.4	0.000	0	20,824	Open	05:07:26 PM Oct-24-2024	16.2	248
11/6/2024	2:45:00	7.4	0.000	0	20,824	Open	05:07:26 PM Oct-24-2024	16.3	247
11/6/2024	3:00:00	7.4	0.000	0	20,824	Open	05:07:26 PM Oct-24-2024	16.5	247
11/6/2024	3:15:00	7.4	0.393	0	20,829	Open	05:07:26 PM Oct-24-2024	16.7	246
11/6/2024	3:30:00	7.3	0.374	0	20,835	Open	05:07:26 PM Oct-24-2024	16.8	247
11/6/2024	3:45:00	7.3	0.386	0	20,840	Open	05:07:26 PM Oct-24-2024	17	248

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/6/2024	4:00:00	7.3	0.386	0	20,846	Open	05:07:26 PM Oct-24-2024	17.1	248
11/6/2024	4:15:00	7.3	0.000	0	20,847	Open	05:07:26 PM Oct-24-2024	17.3	248
11/6/2024	4:30:00	7.3	0.000	0	20,847	Open	05:07:26 PM Oct-24-2024	17.3	248
11/6/2024	4:45:00	7.3	0.000	0	20,847	Open	05:07:26 PM Oct-24-2024	17.5	248
11/6/2024	5:00:00	7.3	0.382	0	20,849	Open	05:07:26 PM Oct-24-2024	17.6	250
11/6/2024	5:15:00	7.3	0.386	0	20,855	Open	05:07:26 PM Oct-24-2024	17.6	250
11/6/2024	5:30:00	7.3	0.378	0	20,860	Open	05:07:26 PM Oct-24-2024	17.7	250
11/6/2024	5:45:00	7.3	0.363	0	20,866	Open	05:07:26 PM Oct-24-2024	17.8	248
11/6/2024	6:00:00	7.3	0.000	0	20,869	Open	05:07:26 PM Oct-24-2024	17.9	248
11/6/2024	6:15:00	7.3	0.000	0	20,869	Open	05:07:26 PM Oct-24-2024	17.9	248
11/6/2024	6:30:00	7.3	0.000	0	20,869	Open	05:07:26 PM Oct-24-2024	18	248
11/6/2024	6:45:00	7.3	0.302	0	20,869	Open	05:07:26 PM Oct-24-2024	18	250
11/6/2024	7:00:00	7.3	0.386	0	20,874	Open	05:07:26 PM Oct-24-2024	18	247
11/6/2024	7:15:00	7.3	0.370	0	20,880	Open	05:07:26 PM Oct-24-2024	18.1	248
11/6/2024	7:30:00	7.3	0.359	0	20,886	Open	05:07:26 PM Oct-24-2024	18.2	250

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/6/2024	7:45:00	7.3	0.000	0	20,891	Open	05:07:26 PM Oct-24-2024	18.2	250
11/6/2024	8:00:00	7.3	0.000	0	20,891	Open	05:07:26 PM Oct-24-2024	18.2	250
11/6/2024	8:15:00	7.3	0.000	0	20,891	Open	05:07:26 PM Oct-24-2024	18.3	250
11/6/2024	8:30:00	7.3	0.000	0	20,891	Open	05:07:26 PM Oct-24-2024	18.3	247
11/6/2024	8:45:00	7.3	0.378	0	20,894	Open	05:07:26 PM Oct-24-2024	18	246
11/6/2024	9:00:00	7.3	0.370	0	20,900	Open	05:07:26 PM Oct-24-2024	17.8	247
11/6/2024	9:15:00	7.3	0.374	0	20,905	Open	05:07:26 PM Oct-24-2024	17.5	248
11/6/2024	9:30:00	7.5	0.352	0	20,911	Open	05:07:26 PM Oct-24-2024	11	113
11/6/2024	9:45:00	7.5	0.000	0	20,914	Open	05:07:26 PM Oct-24-2024	11.3	112
11/6/2024	10:00:00	7.5	0.000	0	20,914	Open	05:07:26 PM Oct-24-2024	11.6	111
11/6/2024	10:15:00	7.5	0.000	0	20,914	Open	05:07:26 PM Oct-24-2024	11.9	112
11/6/2024	10:30:00	7.5	0.000	0	20,914	Open	05:07:26 PM Oct-24-2024	12.2	112
11/6/2024	10:45:00	7.5	0.404	0	20,918	Open	05:07:26 PM Oct-24-2024	12.8	111
11/6/2024	11:00:00	7.5	0.397	0	20,924	Open	05:07:26 PM Oct-24-2024	11.4	111
11/6/2024	11:15:00	7.5	0.389	0	20,930	Open	05:07:26 PM Oct-24-2024	11.4	111

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/6/2024	11:30:00	7.5	0.382	0	20,936	Open	05:07:26 PM Oct-24-2024	11.5	111
11/6/2024	11:45:00	7.5	0.000	0	20,938	Open	05:07:26 PM Oct-24-2024	11.7	112
11/6/2024	12:00:00	7.5	0.000	0	20,938	Open	05:07:26 PM Oct-24-2024	12	112
11/6/2024	12:15:00	7.5	0.000	0	20,938	Open	05:07:26 PM Oct-24-2024	12.3	112
11/6/2024	12:30:00	7.5	0.404	0	20,940	Open	05:07:26 PM Oct-24-2024	12.7	113
11/6/2024	12:45:00	7.5	0.386	0	20,946	Open	05:07:26 PM Oct-24-2024	11.2	113
11/6/2024	13:00:00	7.5	0.382	0	20,952	Open	05:07:26 PM Oct-24-2024	11.3	113
11/6/2024	13:15:00	7.5	0.374	0	20,958	Open	05:07:26 PM Oct-24-2024	11.3	114
11/6/2024	13:30:00	7.5	0.382	0	20,963	Open	05:07:26 PM Oct-24-2024	11.4	114
11/6/2024	13:45:00	7.5	0.367	0	20,969	Open	05:07:26 PM Oct-24-2024	11.4	113
11/6/2024	14:00:00	7.5	0.386	0	20,975	Open	05:07:26 PM Oct-24-2024	11.4	114
11/6/2024	14:15:00	7.5	0.382	0	20,980	Open	05:07:26 PM Oct-24-2024	11.5	114
11/6/2024	14:30:00	7.5	0.378	0	20,986	Open	05:07:26 PM Oct-24-2024	11.5	113
11/6/2024	14:45:00	7.5	0	0	20,990	Closed	05:07:26 PM Oct-24-2024	11.5	113
11/6/2024	15:00:00	7.5	0	0	20,990	Closed	05:07:26 PM Oct-24-2024	11.7	111

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/6/2024	15:15:00	7.4	0	0	20,990	Closed	05:07:26 PM Oct-24-2024	12	111
11/6/2024	15:30:00	7.4	0	0	20,990	Closed	05:07:26 PM Oct-24-2024	12.4	112
11/6/2024	15:45:00	7.4	0.389	0	20,993	Open	05:07:26 PM Oct-24-2024	11.3	113
11/6/2024	16:00:00	7.4	0.378	0	20,999	Open	05:07:26 PM Oct-24-2024	11.3	112
11/6/2024	16:15:00	7.4	0.370	0	21,004	Open	05:07:26 PM Oct-24-2024	11.3	112
11/6/2024	16:30:00	7.4	0.367	0	21,010	Open	05:07:26 PM Oct-24-2024	11.3	112
11/6/2024	16:45:00	7.5	0	0	21,015	Closed	05:07:26 PM Oct-24-2024	11.3	112
11/6/2024	17:00:00	7.4	0	0	21,015	Closed	05:07:26 PM Oct-24-2024	11.6	112
11/6/2024	17:15:00	7.4	0	0	21,015	Closed	05:07:26 PM Oct-24-2024	12	113
11/6/2024	17:30:00	7.4	0	0	21,015	Closed	05:07:26 PM Oct-24-2024	12.5	113
11/6/2024	17:45:00	7.4	0.378	0	21,017	Open	05:07:26 PM Oct-24-2024	11.5	113
11/6/2024	18:00:00	7.5	0.378	1.9	21,023	Open	05:07:26 PM Oct-24-2024	11.4	113
11/6/2024	18:15:00	7.5	0.370	0	21,028	Open	05:07:26 PM Oct-24-2024	11.3	113
11/6/2024	18:30:00	7.5	0.363	0	21,034	Open	05:07:26 PM Oct-24-2024	11.3	113
11/6/2024	18:45:00	7.5	0	0	21,039	Closed	05:07:26 PM Oct-24-2024	11.2	111

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/6/2024	19:00:00	7.5	0	0	21,039	Closed	05:07:26 PM Oct-24-2024	11.5	111
11/6/2024	19:15:00	7.5	0.000	0	21,039	Open	05:07:26 PM Oct-24-2024	11.8	111
11/6/2024	19:30:00	7.5	0.000	0	21,039	Open	05:07:26 PM Oct-24-2024	12	111
11/6/2024	19:45:00	7.5	0.367	0	21,042	Open	05:07:26 PM Oct-24-2024	12.2	111
11/6/2024	20:00:00	7.5	0.348	0	21,047	Open	05:07:26 PM Oct-24-2024	11.3	112
11/6/2024	20:15:00	7.5	0.352	0	21,052	Open	05:07:26 PM Oct-24-2024	11.3	111
11/6/2024	20:30:00	7.5	0.355	0	21,058	Open	05:07:26 PM Oct-24-2024	11.4	112
11/6/2024	20:45:00	7.5	0.000	0	21,063	Open	05:07:26 PM Oct-24-2024	11.5	113
11/6/2024	21:00:00	7.5	0.000	0	21,063	Open	05:07:26 PM Oct-24-2024	11.9	113
11/6/2024	21:15:00	7.5	0.000	0	21,063	Open	05:07:26 PM Oct-24-2024	12.3	113
11/6/2024	21:30:00	7.5	0.000	0	21,063	Open	05:07:26 PM Oct-24-2024	12.8	113
11/6/2024	21:45:00	7.5	0.000	0	21,063	Open	05:07:26 PM Oct-24-2024	13.7	113
11/6/2024	22:00:00	7.5	0.355	0	21,068	Open	05:07:26 PM Oct-24-2024	11.8	114
11/6/2024	22:15:00	7.5	0.340	0	21,074	Open	05:07:26 PM Oct-24-2024	11.7	113
11/6/2024	22:30:00	7.5	0.355	0	21,079	Open	05:07:26 PM Oct-24-2024	11.7	113

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/6/2024	22:45:00	7.5	0.359	0	21,080	Open	05:07:26 PM Oct-24-2024	12	113
11/6/2024	23:00:00	7.5	0.000	0	21,080	Open	05:07:26 PM Oct-24-2024	12.5	114
11/6/2024	23:15:00	7.5	0.000	0	21,083	Open	05:07:26 PM Oct-24-2024	11.4	114
11/6/2024	23:30:00	7.5	0.000	0	21,083	Open	05:07:26 PM Oct-24-2024	11.8	113
11/6/2024	23:45:00	7.5	0.525	0	21,089	Open	05:07:26 PM Oct-24-2024	11	113
11/7/2024	0:00:00	7.5	0.491	0	21,096	Open	05:07:26 PM Oct-24-2024	11.1	113
11/7/2024	0:15:00	7.5	0.000	0	21,102	Open	05:07:26 PM Oct-24-2024	11.3	113
11/7/2024	0:30:00	7.5	0	0	21,102	Closed	05:07:26 PM Oct-24-2024	11.3	112
11/7/2024	0:45:00	7.5	0	0	21,102	Closed	05:07:26 PM Oct-24-2024	11.7	112
11/7/2024	1:00:00	7.5	0.484	0	21,106	Open	05:07:26 PM Oct-24-2024	11.1	113
11/7/2024	1:15:00	7.5	0.491	0	21,113	Open	05:07:26 PM Oct-24-2024	11	113
11/7/2024	1:30:00	7.5	0.507	0	21,121	Open	05:07:26 PM Oct-24-2024	11.1	114
11/7/2024	1:45:00	7.5	0.000	0	21,123	Open	05:07:26 PM Oct-24-2024	11.4	114
11/7/2024	2:00:00	7.5	0.000	0	21,123	Open	05:07:26 PM Oct-24-2024	12	114
11/7/2024	2:15:00	7.5	0.000	0	21,123	Open	05:07:26 PM Oct-24-2024	12.6	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/7/2024	2:30:00	7.5	0.000	0	21,123	Open	05:07:26 PM Oct-24-2024	13.1	114
11/7/2024	2:45:00	7.5	0.000	0	21,123	Open	05:07:26 PM Oct-24-2024	13.6	114
11/7/2024	3:00:00	7.5	0.480	0	21,125	Open	05:07:26 PM Oct-24-2024	12.5	114
11/7/2024	3:15:00	7.5	0.480	0	21,132	Open	05:07:26 PM Oct-24-2024	11.1	114
11/7/2024	3:30:00	7.5	0.476	0	21,139	Open	05:07:26 PM Oct-24-2024	11.1	114
11/7/2024	3:45:00	7.5	0.000	0	21,142	Open	05:07:26 PM Oct-24-2024	11.4	114
11/7/2024	4:00:00	7.5	0.000	0	21,142	Open	05:07:26 PM Oct-24-2024	12	114
11/7/2024	4:15:00	7.5	0.000	0	21,142	Open	05:07:26 PM Oct-24-2024	12.7	114
11/7/2024	4:30:00	7.5	0.469	0	21,148	Open	05:07:26 PM Oct-24-2024	11.1	114
11/7/2024	4:45:00	7.5	0.476	0	21,155	Open	05:07:26 PM Oct-24-2024	11.1	114
11/7/2024	5:00:00	7.5	0.473	0	21,162	Open	05:07:26 PM Oct-24-2024	11.2	114
11/7/2024	5:15:00	7.5	0.457	0	21,169	Open	05:07:26 PM Oct-24-2024	11.2	114
11/7/2024	5:30:00	7.5	0.457	0	21,176	Open	05:07:26 PM Oct-24-2024	11.2	114
11/7/2024	5:45:00	7.5	0.457	0	21,183	Open	05:07:26 PM Oct-24-2024	11.2	114
11/7/2024	6:00:00	7.5	0.000	0	21,186	Open	05:07:26 PM Oct-24-2024	11.5	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/7/2024	6:15:00	7.5	0.000	0	21,186	Open	05:07:26 PM Oct-24-2024	12.2	114
11/7/2024	6:30:00	7.5	0.000	0	21,186	Open	05:07:26 PM Oct-24-2024	12.8	114
11/7/2024	6:45:00	7.5	0.457	0	21,191	Open	05:07:26 PM Oct-24-2024	11.2	114
11/7/2024	7:00:00	7.5	0.473	0	21,198	Open	05:07:26 PM Oct-24-2024	11.2	114
11/7/2024	7:15:00	7.5	0.461	0	21,204	Open	05:07:26 PM Oct-24-2024	11.2	114
11/7/2024	7:30:00	7.5	0.000	0	21,208	Open	05:07:26 PM Oct-24-2024	11.4	113
11/7/2024	7:45:00	7.5	0.000	0	21,208	Open	05:07:26 PM Oct-24-2024	11.9	114
11/7/2024	8:00:00	7.5	0.000	0	21,208	Open	05:07:26 PM Oct-24-2024	12.5	114
11/7/2024	8:15:00	7.5	0.000	0	21,208	Open	05:07:26 PM Oct-24-2024	13	114
11/7/2024	8:30:00	7.5	0.457	0	21,214	Open	05:07:26 PM Oct-24-2024	11	113
11/7/2024	8:45:00	7.5	0.442	0	21,221	Open	05:07:26 PM Oct-24-2024	11	113
11/7/2024	9:00:00	7.5	0.457	0	21,228	Open	05:07:26 PM Oct-24-2024	10.9	111
11/7/2024	9:15:00	7.5	0.000	0	21,232	Open	05:07:26 PM Oct-24-2024	11.1	111
11/7/2024	9:30:00	7.5	0.000	0	21,232	Open	05:07:26 PM Oct-24-2024	11.4	111
11/7/2024	9:45:00	7.5	0.000	0	21,232	Open	05:07:26 PM Oct-24-2024	11.7	111

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/7/2024	10:00:00	7.5	0.000	0	21,232	Open	05:07:26 PM Oct-24-2024	12	112
11/7/2024	10:15:00	7.5	0.469	0	21,237	Open	05:07:26 PM Oct-24-2024	11	112
11/7/2024	10:30:00	7.5	0.446	0	21,244	Open	05:07:26 PM Oct-24-2024	11	113
11/7/2024	10:45:00	7.5	0.457	0	21,251	Open	05:07:26 PM Oct-24-2024	11.1	113
11/7/2024	11:00:00	7.5	0.000	0	21,256	Open	05:07:26 PM Oct-24-2024	11.2	114
11/7/2024	11:15:00	7.5	0.000	0	21,256	Open	05:07:26 PM Oct-24-2024	11.6	111
11/7/2024	11:30:00	7.5	0.000	0	21,256	Open	05:07:26 PM Oct-24-2024	12	112
11/7/2024	11:45:00	7.5	0.000	0	21,256	Open	05:07:26 PM Oct-24-2024	12.3	111
11/7/2024	12:00:00	7.5	0.454	0	21,261	Open	05:07:26 PM Oct-24-2024	11.1	112
11/7/2024	12:15:00	7.5	0.465	0	21,267	Open	05:07:26 PM Oct-24-2024	11.1	112
11/7/2024	12:30:00	7.5	0.454	0	21,274	Open	05:07:26 PM Oct-24-2024	11.1	111
11/7/2024	12:45:00	7.5	0.000	0	21,280	Open	05:07:26 PM Oct-24-2024	11.2	113
11/7/2024	13:00:00	7.5	0.000	0	21,280	Open	05:07:26 PM Oct-24-2024	11.8	113
11/7/2024	13:15:00	7.5	0.000	0	21,280	Open	05:07:26 PM Oct-24-2024	12.2	114
11/7/2024	13:30:00	7.5	0.000	0	21,280	Open	05:07:26 PM Oct-24-2024	12.5	111

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/7/2024	13:45:00	7.5	0.473	0	21,283	Open	05:07:26 PM Oct-24-2024	11.3	112
11/7/2024	14:00:00	7.5	0.469	0	21,290	Open	05:07:26 PM Oct-24-2024	11.3	111
11/7/2024	14:15:00	7.5	0.438	0	21,297	Open	05:07:26 PM Oct-24-2024	11.3	112
11/7/2024	14:30:00	7.5	0.461	0	21,304	Open	05:07:26 PM Oct-24-2024	11.3	113
11/7/2024	14:45:00	7.5	0.000	0	21,305	Open	05:07:26 PM Oct-24-2024	11.7	113
11/7/2024	15:00:00	7.5	0.000	0	21,305	Open	05:07:26 PM Oct-24-2024	12.2	113
11/7/2024	15:15:00	7.5	0.000	0	21,305	Open	05:07:26 PM Oct-24-2024	12.8	114
11/7/2024	15:30:00	7.5	0.450	10.4	21,306	Open	05:07:26 PM Oct-24-2024	12.9	114
11/7/2024	15:45:00	7.5	0.454	0	21,313	Open	05:07:26 PM Oct-24-2024	11.5	114
11/7/2024	16:00:00	7.5	0.465	0	21,320	Open	05:07:26 PM Oct-24-2024	11.5	114
11/7/2024	16:15:00	7.5	0.461	0	21,326	Open	05:07:26 PM Oct-24-2024	11.4	113
11/7/2024	16:30:00	7.5	0.000	0	21,330	Open	05:07:26 PM Oct-24-2024	11.6	112
11/7/2024	16:45:00	7.5	0.000	0	21,330	Open	05:07:26 PM Oct-24-2024	11.9	112
11/7/2024	17:00:00	7.5	0.000	0	21,330	Open	05:07:26 PM Oct-24-2024	12.3	112
11/7/2024	17:15:00	7.5	0.000	0	21,330	Open	05:07:26 PM Oct-24-2024	12.5	112

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/7/2024	17:30:00	7.5	0.457	0	21,335	Open	05:07:26 PM Oct-24-2024	11.3	111
11/7/2024	17:45:00	7.5	0.446	0	21,342	Open	05:07:26 PM Oct-24-2024	11.3	112
11/7/2024	18:00:00	7.5	0.000	0	21,347	Open	05:07:26 PM Oct-24-2024	11.6	112
11/7/2024	18:15:00	7.5	0.000	0	21,348	Open	05:07:26 PM Oct-24-2024	11.6	112
11/7/2024	18:30:00	7.5	0.000	0	21,348	Open	05:07:26 PM Oct-24-2024	12	111
11/7/2024	18:45:00	7.5	0.000	0	21,348	Open	05:07:26 PM Oct-24-2024	12.2	111
11/7/2024	19:00:00	7.5	0.457	0	21,354	Open	05:07:26 PM Oct-24-2024	11.2	112
11/7/2024	19:15:00	7.5	0.469	0	21,361	Open	05:07:26 PM Oct-24-2024	11.2	111
11/7/2024	19:30:00	7.5	0.473	0	21,368	Open	05:07:26 PM Oct-24-2024	11.2	112
11/7/2024	19:45:00	7.5	0.000	0	21,371	Open	05:07:26 PM Oct-24-2024	11.5	113
11/7/2024	20:00:00	7.5	0.000	0	21,371	Open	05:07:26 PM Oct-24-2024	12	113
11/7/2024	20:15:00	7.5	0.000	0	21,371	Open	05:07:26 PM Oct-24-2024	12.6	114
11/7/2024	20:30:00	7.5	0.000	0	21,371	Open	05:07:26 PM Oct-24-2024	13	113
11/7/2024	20:45:00	7.5	0.000	0	21,371	Open	05:07:26 PM Oct-24-2024	13.4	114
11/7/2024	21:00:00	7.5	0.401	21.5	21,371	Open	05:07:26 PM Oct-24-2024	13.8	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/7/2024	21:15:00	7.5	0.457	0	21,378	Open	05:07:26 PM Oct-24-2024	11.4	114
11/7/2024	21:30:00	7.5	0.457	0	21,385	Open	05:07:26 PM Oct-24-2024	11.4	114
11/7/2024	21:45:00	7.5	0.469	0	21,392	Open	05:07:26 PM Oct-24-2024	11.4	114
11/7/2024	22:00:00	7.5	0.454	0	21,399	Open	05:07:26 PM Oct-24-2024	11.4	114
11/7/2024	22:15:00	7.5	0.000	0	21,402	Open	05:07:26 PM Oct-24-2024	11.7	114
11/7/2024	22:30:00	7.5	0.000	0	21,402	Open	05:07:26 PM Oct-24-2024	12.3	114
11/7/2024	22:45:00	7.5	0.000	0	21,402	Open	05:07:26 PM Oct-24-2024	12.9	114
11/7/2024	23:00:00	7.5	0.457	0	21,405	Open	05:07:26 PM Oct-24-2024	12	114
11/7/2024	23:15:00	7.5	0.454	0	21,412	Open	05:07:26 PM Oct-24-2024	11.5	114
11/7/2024	23:30:00	7.5	0.450	0	21,419	Open	05:07:26 PM Oct-24-2024	11.5	114
11/7/2024	23:45:00	7.6	0.461	0	21,425	Open	05:07:26 PM Oct-24-2024	11.5	114
11/8/2024	0:00:00	7.5	0.000	0	21,426	Open	05:07:26 PM Oct-24-2024	12	114
11/8/2024	0:15:00	7.5	0.000	0	21,426	Open	05:07:26 PM Oct-24-2024	12.6	114
11/8/2024	0:30:00	7.5	0.000	0	21,426	Open	05:07:26 PM Oct-24-2024	13.2	114
11/8/2024	0:45:00	7.5	0.454	0	21,429	Open	05:07:26 PM Oct-24-2024	12.4	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/8/2024	1:00:00	7.5	0.454	0	21,435	Open	05:07:26 PM Oct-24-2024	11.5	114
11/8/2024	1:15:00	7.6	0.442	0	21,442	Open	05:07:26 PM Oct-24-2024	11.5	114
11/8/2024	1:30:00	7.6	0.446	0	21,449	Open	05:07:26 PM Oct-24-2024	11.5	114
11/8/2024	1:45:00	7.6	0.000	0	21,451	Open	05:07:26 PM Oct-24-2024	11.9	114
11/8/2024	2:00:00	7.5	0.000	0	21,451	Open	05:07:26 PM Oct-24-2024	12.5	114
11/8/2024	2:15:00	7.5	0.000	0	21,451	Open	05:07:26 PM Oct-24-2024	13.2	115
11/8/2024	2:30:00	7.5	0.000	0	21,451	Open	05:07:26 PM Oct-24-2024	13.7	114
11/8/2024	2:45:00	7.6	0.454	0	21,458	Open	05:07:26 PM Oct-24-2024	11.5	114
11/8/2024	3:00:00	7.6	0.446	0	21,464	Open	05:07:26 PM Oct-24-2024	11.5	114
11/8/2024	3:15:00	7.6	0.442	0	21,471	Open	05:07:26 PM Oct-24-2024	11.5	114
11/8/2024	3:30:00	7.6	0.000	0	21,476	Open	05:07:26 PM Oct-24-2024	11.7	114
11/8/2024	3:45:00	7.6	0.000	0	21,476	Open	05:07:26 PM Oct-24-2024	12.3	114
11/8/2024	4:00:00	7.6	0.000	0	21,476	Open	05:07:26 PM Oct-24-2024	12.9	114
11/8/2024	4:15:00	7.5	0.000	0	21,476	Open	05:07:26 PM Oct-24-2024	13.6	114
11/8/2024	4:30:00	7.6	0.446	0	21,480	Open	05:07:26 PM Oct-24-2024	11.6	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/8/2024	4:45:00	7.6	0.446	0	21,486	Open	05:07:26 PM Oct-24-2024	11.5	114
11/8/2024	5:00:00	7.5	0.200	0	21,492	Open	05:07:26 PM Oct-24-2024	11.9	114
11/8/2024	5:15:00	7.6	0.000	0	21,493	Open	05:07:26 PM Oct-24-2024	12.1	114
11/8/2024	5:30:00	7.5	0.000	0	21,493	Open	05:07:26 PM Oct-24-2024	12.6	114
11/8/2024	5:45:00	7.6	0.461	0	21,494	Open	05:07:26 PM Oct-24-2024	13.5	114
11/8/2024	6:00:00	7.6	0.457	0	21,500	Open	05:07:26 PM Oct-24-2024	11.5	114
11/8/2024	6:15:00	7.6	0.450	0	21,507	Open	05:07:26 PM Oct-24-2024	11.5	114
11/8/2024	6:30:00	7.6	0.457	0	21,514	Open	05:07:26 PM Oct-24-2024	11.5	114
11/8/2024	6:45:00	7.6	0.442	0	21,521	Open	05:07:26 PM Oct-24-2024	11.5	114
11/8/2024	7:00:00	7.6	0.442	0	21,527	Open	05:07:26 PM Oct-24-2024	11.6	114
11/8/2024	7:15:00	7.6	0.000	0	21,532	Open	05:07:26 PM Oct-24-2024	11.8	114
11/8/2024	7:30:00	7.6	0.000	0	21,532	Open	05:07:26 PM Oct-24-2024	12.4	114
11/8/2024	7:45:00	7.6	0.000	0	21,532	Open	05:07:26 PM Oct-24-2024	13.1	114
11/8/2024	8:00:00	7.6	0.000	0	21,532	Open	05:07:26 PM Oct-24-2024	13.7	115
11/8/2024	8:15:00	7.6	0.431	0	21,536	Open	05:07:26 PM Oct-24-2024	11.7	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/8/2024	8:30:00	7.6	0.454	0	21,543	Open	05:07:26 PM Oct-24-2024	11.6	114
11/8/2024	8:45:00	7.6	0.446	0	21,549	Open	05:07:26 PM Oct-24-2024	11.5	114
11/8/2024	9:00:00	7.6	0.431	0	21,556	Open	05:07:26 PM Oct-24-2024	11.5	114
11/8/2024	9:15:00	7.6	0.000	0	21,557	Open	05:07:26 PM Oct-24-2024	11.8	112
11/8/2024	9:30:00	7.6	0.000	0	21,557	Open	05:07:26 PM Oct-24-2024	12.1	111
11/8/2024	9:45:00	7.6	0.435	0	21,560	Open	05:07:26 PM Oct-24-2024	12.4	113
11/8/2024	10:00:00	7.6	0.431	0	21,567	Open	05:07:26 PM Oct-24-2024	11.4	113
11/8/2024	10:15:00	7.6	0.438	0	21,573	Open	05:07:26 PM Oct-24-2024	11.5	113
11/8/2024	10:30:00	7.6	0.427	0	21,580	Open	05:07:26 PM Oct-24-2024	11.5	114
11/8/2024	10:45:00	7.6	0.438	0	21,587	Open	05:07:26 PM Oct-24-2024	11.6	114
11/8/2024	11:00:00	7.6	0.000	0	21,587	Open	05:07:26 PM Oct-24-2024	12	114
11/8/2024	11:15:00	7.6	0.446	0	21,590	Open	05:07:26 PM Oct-24-2024	12.9	114
11/8/2024	11:30:00	7.6	0.435	0	21,597	Open	05:07:26 PM Oct-24-2024	11.7	114
11/8/2024	11:45:00	7.6	0.442	0	21,604	Open	05:07:26 PM Oct-24-2024	11.7	114
11/8/2024	12:00:00	7.6	0.450	0	21,611	Open	05:07:26 PM Oct-24-2024	12	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/8/2024	12:15:00	7.6	0.454	0	21,617	Open	05:07:26 PM Oct-24-2024	12.3	114
11/8/2024	12:30:00	7.6	0.000	0	21,620	Open	05:07:26 PM Oct-24-2024	12.9	114
11/8/2024	12:45:00	7.6	0.000	0	21,620	Open	05:07:26 PM Oct-24-2024	13.3	114
11/8/2024	13:00:00	7.6	0.000	0	21,620	Open	05:07:26 PM Oct-24-2024	13.8	114
11/8/2024	13:15:00	7.6	0.000	0	21,620	Open	05:07:26 PM Oct-24-2024	14.2	114
11/8/2024	13:30:00	7.6	0.000	0	21,620	Open	05:07:26 PM Oct-24-2024	14.7	114
11/8/2024	13:45:00	7.6	0.000	0	21,620	Open	05:07:26 PM Oct-24-2024	14.9	253
11/8/2024	14:00:00	7.5	0.000	0	21,620	Open	05:07:26 PM Oct-24-2024	15.2	252
11/8/2024	14:15:00	7.5	0.000	0	21,620	Open	05:07:26 PM Oct-24-2024	15.5	251
11/8/2024	14:30:00	7.5	0.000	0	21,620	Open	05:07:26 PM Oct-24-2024	15.7	251
11/8/2024	14:45:00	7.5	0.431	0	21,624	Open	05:07:26 PM Oct-24-2024	16	251
11/8/2024	15:00:00	7.6	0.435	0	21,631	Open	05:07:26 PM Oct-24-2024	12	114
11/8/2024	15:15:00	7.6	0.420	0	21,637	Open	05:07:26 PM Oct-24-2024	11.9	113
11/8/2024	15:30:00	7.6	0.416	0	21,644	Open	05:07:26 PM Oct-24-2024	11.9	113
11/8/2024	15:45:00	7.6	0.435	0	21,650	Open	05:07:26 PM Oct-24-2024	11.9	113

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/8/2024	16:00:00	7.6	0.408	0	21,656	Open	05:07:26 PM Oct-24-2024	11.9	113
11/8/2024	16:15:00	7.6	0.412	0	21,663	Open	05:07:26 PM Oct-24-2024	11.9	113
11/8/2024	16:30:00	7.6	0.000	0	21,663	Open	05:07:26 PM Oct-24-2024	12.2	112
11/8/2024	16:45:00	7.6	0.000	0	21,663	Open	05:07:26 PM Oct-24-2024	12.7	113
11/8/2024	17:00:00	7.6	0.000	0	21,663	Open	05:07:26 PM Oct-24-2024	13	113
11/8/2024	17:15:00	7.6	0.000	0	21,663	Open	05:07:26 PM Oct-24-2024	13.3	112
11/8/2024	17:30:00	7.6	0.000	0	21,663	Open	05:07:26 PM Oct-24-2024	13.6	113
11/8/2024	17:45:00	7.6	0.000	0	21,663	Open	05:07:26 PM Oct-24-2024	13.8	114
11/8/2024	18:00:00	7.5	0.446	0	21,667	Open	05:07:26 PM Oct-24-2024	14.6	113
11/8/2024	18:15:00	7.6	0.431	0	21,674	Open	05:07:26 PM Oct-24-2024	14.3	113
11/8/2024	18:30:00	7.6	0.450	0	21,681	Open	05:07:26 PM Oct-24-2024	14.4	113
11/8/2024	18:45:00	7.5	0.438	0	21,687	Open	05:07:26 PM Oct-24-2024	14.6	113
11/8/2024	19:00:00	7.5	0.431	0	21,694	Open	05:07:26 PM Oct-24-2024	14.9	113
11/8/2024	19:15:00	7.5	0.416	0	21,700	Open	05:07:26 PM Oct-24-2024	14.9	113
11/8/2024	19:30:00	7.5	0.476	0	21,707	Open	05:07:26 PM Oct-24-2024	13.1	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/8/2024	19:45:00	7.5	0.000	0	21,708	Open	05:07:26 PM Oct-24-2024	12.8	112
11/8/2024	20:00:00	7.5	0.000	0	21,708	Open	05:07:26 PM Oct-24-2024	13.1	113
11/8/2024	20:15:00	7.5	0.000	0	21,708	Open	05:07:26 PM Oct-24-2024	13.3	112
11/8/2024	20:30:00	7.5	0.000	0	21,708	Open	05:07:26 PM Oct-24-2024	13.6	113
11/8/2024	20:45:00	7.5	0.480	0	21,715	Open	05:07:26 PM Oct-24-2024	14.3	114
11/8/2024	21:00:00	7.5	0.488	0	21,722	Open	05:07:26 PM Oct-24-2024	14.7	114
11/8/2024	21:15:00	7.5	0.457	0	21,729	Open	05:07:26 PM Oct-24-2024	15.1	114
11/8/2024	21:30:00	7.5	0.000	0	21,734	Open	05:07:26 PM Oct-24-2024	15.5	114
11/8/2024	21:45:00	7.5	0.000	0	21,734	Open	05:07:26 PM Oct-24-2024	15.9	114
11/8/2024	22:00:00	7.5	0.000	0	21,734	Open	05:07:26 PM Oct-24-2024	16.2	114
11/8/2024	22:15:00	7.5	0.000	0	21,734	Open	05:07:26 PM Oct-24-2024	16.4	116
11/8/2024	22:30:00	7.5	0.484	0	21,735	Open	05:07:26 PM Oct-24-2024	16.6	114
11/8/2024	22:45:00	7.5	0.476	0	21,741	Open	05:07:26 PM Oct-24-2024	15.9	114
11/8/2024	23:00:00	7.5	0.495	0	21,748	Open	05:07:26 PM Oct-24-2024	13.5	114
11/8/2024	23:15:00	7.5	0.465	0	21,755	Open	05:07:26 PM Oct-24-2024	13.6	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/8/2024	23:30:00	7.5	0.473	0	21,762	Open	05:07:26 PM Oct-24-2024	13.8	114
11/8/2024	23:45:00	7.5	0.469	0	21,769	Open	05:07:26 PM Oct-24-2024	14.2	114
11/9/2024	0:00:00	7.5	0.469	0	21,776	Open	05:07:26 PM Oct-24-2024	14.8	114
11/9/2024	0:15:00	7.5	0.454	0	21,783	Open	05:07:26 PM Oct-24-2024	15.3	116
11/9/2024	0:30:00	7.5	0.442	0	21,790	Open	05:07:26 PM Oct-24-2024	15.8	116
11/9/2024	0:45:00	7.5	0.454	0	21,797	Open	05:07:26 PM Oct-24-2024	16.2	116
11/9/2024	1:00:00	7.5	0.000	0	21,798	Open	05:07:26 PM Oct-24-2024	16.5	116
11/9/2024	1:15:00	7.5	0.000	0	21,798	Open	05:07:26 PM Oct-24-2024	16.9	249
11/9/2024	1:30:00	7.5	0.454	0	21,802	Open	05:07:26 PM Oct-24-2024	17.2	247
11/9/2024	1:45:00	7.5	0.446	0	21,809	Open	05:07:26 PM Oct-24-2024	17.5	247
11/9/2024	2:00:00	7.5	0.450	0	21,815	Open	05:07:26 PM Oct-24-2024	17.7	247
11/9/2024	2:15:00	7.5	0.435	0	21,822	Open	05:07:26 PM Oct-24-2024	17.9	247
11/9/2024	2:30:00	7.5	0.000	0	21,824	Open	05:07:26 PM Oct-24-2024	18.1	247
11/9/2024	2:45:00	7.5	0.000	0	21,824	Open	05:07:26 PM Oct-24-2024	18.3	247
11/9/2024	3:00:00	7.5	0.450	0	21,829	Open	05:07:26 PM Oct-24-2024	18.4	248

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/9/2024	3:15:00	7.5	0.435	0	21,835	Open	05:07:26 PM Oct-24-2024	18.6	249
11/9/2024	3:30:00	7.4	0.450	0	21,842	Open	05:07:26 PM Oct-24-2024	18.7	247
11/9/2024	3:45:00	7.4	0.000	0	21,848	Open	05:07:26 PM Oct-24-2024	18.9	247
11/9/2024	4:00:00	7.4	0.000	0	21,848	Open	05:07:26 PM Oct-24-2024	19	247
11/9/2024	4:15:00	7.4	0.457	0	21,849	Open	05:07:26 PM Oct-24-2024	19	249
11/9/2024	4:30:00	7.4	0.427	0	21,855	Open	05:07:26 PM Oct-24-2024	19.1	250
11/9/2024	4:45:00	7.4	0.438	0	21,862	Open	05:07:26 PM Oct-24-2024	19.2	251
11/9/2024	5:00:00	7.4	0.000	0	21,865	Open	05:07:26 PM Oct-24-2024	19.3	247
11/9/2024	5:15:00	7.4	0.431	0	21,866	Open	05:07:26 PM Oct-24-2024	19.3	249
11/9/2024	5:30:00	7.4	0.435	0	21,872	Open	05:07:26 PM Oct-24-2024	19.4	248
11/9/2024	5:45:00	7.4	0.000	0	21,874	Open	05:07:26 PM Oct-24-2024	19.5	249
11/9/2024	6:00:00	7.3	0.000	0	21,874	Open	05:07:26 PM Oct-24-2024	19.5	247
11/9/2024	6:15:00	7.3	0.435	0	21,877	Open	05:07:26 PM Oct-24-2024	19.6	247
11/9/2024	6:30:00	7.3	0.000	0	21,882	Open	05:07:26 PM Oct-24-2024	19.6	247
11/9/2024	6:45:00	7.3	0.000	0	21,882	Open	05:07:26 PM Oct-24-2024	19.7	247

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/9/2024	7:00:00	7.3	0.000	0	21,882	Open	05:07:26 PM Oct-24-2024	19.7	248
11/9/2024	7:15:00	7.3	0.431	0	21,888	Open	05:07:26 PM Oct-24-2024	19.7	249
11/9/2024	7:30:00	7.3	0.427	0	21,895	Open	05:07:26 PM Oct-24-2024	19.7	249
11/9/2024	7:45:00	7.3	0.416	0	21,901	Open	05:07:26 PM Oct-24-2024	19.7	248
11/9/2024	8:00:00	7.3	0.000	0	21,904	Open	05:07:26 PM Oct-24-2024	19.7	249
11/9/2024	8:15:00	7.3	0.427	0	21,908	Open	05:07:26 PM Oct-24-2024	19.8	248
11/9/2024	8:30:00	7.3	0.000	0	21,908	Open	05:07:26 PM Oct-24-2024	19.8	247
11/9/2024	8:45:00	7.3	0.000	0	21,908	Open	05:07:26 PM Oct-24-2024	19.5	247
11/9/2024	9:00:00	7.3	0.000	0	21,908	Open	05:07:26 PM Oct-24-2024	19.2	248
11/9/2024	9:15:00	7.3	0.000	0	21,908	Open	05:07:26 PM Oct-24-2024	18.9	247
11/9/2024	9:30:00	7.3	0.000	0	21,908	Open	05:07:26 PM Oct-24-2024	18.7	250
11/9/2024	9:45:00	7.3	0.000	0	21,908	Open	05:07:26 PM Oct-24-2024	18.5	248
11/9/2024	10:00:00	7.3	0.000	0	21,908	Open	05:07:26 PM Oct-24-2024	18.4	250
11/9/2024	10:15:00	7.3	0.000	0	21,908	Open	05:07:26 PM Oct-24-2024	18.2	247
11/9/2024	10:30:00	7.4	0.423	0	21,910	Open	05:07:26 PM Oct-24-2024	18.4	250

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/9/2024	10:45:00	7.5	0.450	0	21,916	Open	05:07:26 PM Oct-24-2024	12.3	113
11/9/2024	11:00:00	7.5	0.431	0	21,923	Open	05:07:26 PM Oct-24-2024	12	113
11/9/2024	11:15:00	7.6	0.420	0	21,929	Open	05:07:26 PM Oct-24-2024	12	113
11/9/2024	11:30:00	7.6	0.423	0	21,935	Open	05:07:26 PM Oct-24-2024	11.9	113
11/9/2024	11:45:00	7.6	0.420	0	21,942	Open	05:07:26 PM Oct-24-2024	11.9	112
11/9/2024	12:00:00	7.6	0.420	0	21,948	Open	05:07:26 PM Oct-24-2024	11.9	113
11/9/2024	12:15:00	7.6	0.393	0	21,954	Open	05:07:26 PM Oct-24-2024	11.9	113
11/9/2024	12:30:00	7.6	0.416	0	21,960	Open	05:07:26 PM Oct-24-2024	12	113
11/9/2024	12:45:00	7.6	0.397	0	21,966	Open	05:07:26 PM Oct-24-2024	12.1	113
11/9/2024	13:00:00	7.5	0.412	0	21,972	Open	05:07:26 PM Oct-24-2024	12.1	114
11/9/2024	13:15:00	7.5	0.412	0	21,978	Open	05:07:26 PM Oct-24-2024	12.3	111
11/9/2024	13:30:00	7.5	0.000	0	21,979	Open	05:07:26 PM Oct-24-2024	12.4	111
11/9/2024	13:45:00	7.5	0.000	0	21,979	Open	05:07:26 PM Oct-24-2024	12.7	112
11/9/2024	14:00:00	7.5	0.000	0	21,979	Open	05:07:26 PM Oct-24-2024	12.9	111
11/9/2024	14:15:00	7.5	0.000	0	21,979	Open	05:07:26 PM Oct-24-2024	13.1	111

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/9/2024	14:30:00	7.5	0.000	0	21,979	Open	05:07:26 PM Oct-24-2024	13.2	111
11/9/2024	14:45:00	7.5	0.408	0	21,983	Open	05:07:26 PM Oct-24-2024	12.6	111
11/9/2024	15:00:00	7.5	0.219	0	21,989	Open	05:07:26 PM Oct-24-2024	12	112
11/9/2024	15:15:00	7.5	0.431	0	21,993	Open	05:07:26 PM Oct-24-2024	12.3	111
11/9/2024	15:30:00	7.5	0.427	0	21,999	Open	05:07:26 PM Oct-24-2024	12.6	112
11/9/2024	15:45:00	7.5	0.412	0	22,005	Open	05:07:26 PM Oct-24-2024	12.8	112
11/9/2024	16:00:00	7.5	0.404	0	22,011	Open	05:07:26 PM Oct-24-2024	13.1	112
11/9/2024	16:15:00	7.5	0.397	0	22,018	Open	05:07:26 PM Oct-24-2024	13.4	112
11/9/2024	16:30:00	7.5	0.000	0	22,019	Open	05:07:26 PM Oct-24-2024	13.7	111
11/9/2024	16:45:00	7.5	0.000	0	22,019	Open	05:07:26 PM Oct-24-2024	13.8	112
11/9/2024	17:00:00	7.5	0.000	0	22,019	Open	05:07:26 PM Oct-24-2024	13.9	112
11/9/2024	17:15:00	7.5	0.000	0	22,019	Open	05:07:26 PM Oct-24-2024	14	112
11/9/2024	17:30:00	7.5	0.000	0	22,019	Open	05:07:26 PM Oct-24-2024	14.1	111
11/9/2024	17:45:00	7.5	0.404	0	22,022	Open	05:07:26 PM Oct-24-2024	14.4	111
11/9/2024	18:00:00	7.5	0.401	0	22,028	Open	05:07:26 PM Oct-24-2024	12.5	112

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/9/2024	18:15:00	7.5	0.397	0	22,034	Open	05:07:26 PM Oct-24-2024	12.2	112
11/9/2024	18:30:00	7.5	0.386	0	22,040	Open	05:07:26 PM Oct-24-2024	12.3	111
11/9/2024	18:45:00	7.6	0.374	0	22,046	Open	05:07:26 PM Oct-24-2024	12.5	112
11/9/2024	19:00:00	7.6	0.000	0	22,046	Open	05:07:26 PM Oct-24-2024	12.6	112
11/9/2024	19:15:00	7.6	0.000	0	22,046	Open	05:07:26 PM Oct-24-2024	12.8	111
11/9/2024	19:30:00	7.6	0.397	0	22,048	Open	05:07:26 PM Oct-24-2024	13	111
11/9/2024	19:45:00	7.5	0.382	0	22,054	Open	05:07:26 PM Oct-24-2024	13.5	112
11/9/2024	20:00:00	7.6	0.370	0	22,060	Open	05:07:26 PM Oct-24-2024	13.9	113
11/9/2024	20:15:00	7.5	0.374	0	22,065	Open	05:07:26 PM Oct-24-2024	14.4	113
11/9/2024	20:30:00	7.5	0.000	0	22,071	Open	05:07:26 PM Oct-24-2024	14.7	114
11/9/2024	20:45:00	7.5	0.000	0	22,071	Open	05:07:26 PM Oct-24-2024	15	114
11/9/2024	21:00:00	7.5	0.000	0	22,071	Open	05:07:26 PM Oct-24-2024	15.3	253
11/9/2024	21:15:00	7.5	0.000	0	22,071	Open	05:07:26 PM Oct-24-2024	15.5	251
11/9/2024	21:30:00	7.5	0.000	0	22,071	Open	05:07:26 PM Oct-24-2024	15.7	250
11/9/2024	21:45:00	7.6	0.518	0	22,073	Open	09:42:07 PM Nov-09-2024	11.7	113

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/9/2024	22:00:00	7.6	0.000	0	22,074	Open	09:42:07 PM Nov-09-2024	12	113
11/9/2024	22:15:00	7.6	0.000	0	22,074	Open	09:42:07 PM Nov-09-2024	12.4	113
11/9/2024	22:30:00	7.6	0.484	0	22,077	Open	09:42:07 PM Nov-09-2024	11.5	112
11/9/2024	22:45:00	7.6	0.503	0	22,085	Open	09:42:07 PM Nov-09-2024	11.5	113
11/9/2024	23:00:00	7.6	0.484	0	22,092	Open	09:42:07 PM Nov-09-2024	11.6	113
11/9/2024	23:15:00	7.6	0.473	0	22,100	Open	09:42:07 PM Nov-09-2024	11.6	114
11/9/2024	23:30:00	7.6	0.000	0	22,103	Open	09:42:07 PM Nov-09-2024	11.9	114
11/9/2024	23:45:00	7.6	0.382	0	22,103	Open	09:42:07 PM Nov-09-2024	12.4	114
11/10/2024	0:00:00	7.6	0.480	0	22,110	Open	09:42:07 PM Nov-09-2024	11.6	114
11/10/2024	0:15:00	7.6	0.469	0	22,117	Open	09:42:07 PM Nov-09-2024	11.6	114
11/10/2024	0:30:00	7.6	0.476	0	22,124	Open	09:42:07 PM Nov-09-2024	11.6	114
11/10/2024	0:45:00	7.6	0.454	0	22,131	Open	09:42:07 PM Nov-09-2024	11.6	114
11/10/2024	1:00:00	7.6	0.000	0	22,138	Open	09:42:07 PM Nov-09-2024	11.6	114
11/10/2024	1:15:00	7.6	0.000	0	22,140	Open	09:42:07 PM Nov-09-2024	11.9	114
11/10/2024	1:30:00	7.6	0.000	0	22,140	Open	09:42:07 PM Nov-09-2024	12.5	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/10/2024	1:45:00	7.6	0.000	0	22,140	Open	09:42:07 PM Nov-09-2024	13.1	114
11/10/2024	2:00:00	7.6	0.000	0	22,140	Open	09:42:07 PM Nov-09-2024	13.6	114
11/10/2024	2:15:00	7.6	0.000	0	22,140	Open	09:42:07 PM Nov-09-2024	14.1	114
11/10/2024	2:30:00	7.6	0.469	0	22,142	Open	09:42:07 PM Nov-09-2024	11.9	114
11/10/2024	2:45:00	7.6	0.461	0	22,149	Open	09:42:07 PM Nov-09-2024	11.6	114
11/10/2024	3:00:00	7.6	0.000	0	22,150	Open	09:42:07 PM Nov-09-2024	12.1	114
11/10/2024	3:15:00	7.6	0.000	0	22,150	Open	09:42:07 PM Nov-09-2024	12.8	114
11/10/2024	3:30:00	7.6	0.000	0	22,150	Open	09:42:07 PM Nov-09-2024	13.4	114
11/10/2024	3:45:00	7.6	0.000	0	22,150	Open	09:42:07 PM Nov-09-2024	13.9	114
11/10/2024	4:00:00	7.6	0.476	0	22,152	Open	09:42:07 PM Nov-09-2024	12.5	114
11/10/2024	4:15:00	7.6	0.480	0	22,159	Open	09:42:07 PM Nov-09-2024	11.5	114
11/10/2024	4:30:00	7.6	0.473	0	22,166	Open	09:42:07 PM Nov-09-2024	11.5	114
11/10/2024	4:45:00	7.6	0.457	0	22,173	Open	09:42:07 PM Nov-09-2024	11.5	114
11/10/2024	5:00:00	7.6	0.000	0	22,177	Open	09:42:07 PM Nov-09-2024	11.8	114
11/10/2024	5:15:00	7.6	0.000	0	22,177	Open	09:42:07 PM Nov-09-2024	12.3	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/10/2024	5:30:00	7.6	0.465	1.5	22,180	Open	09:42:07 PM Nov-09-2024	11.7	114
11/10/2024	5:45:00	7.6	0.457	0	22,185	Open	09:42:07 PM Nov-09-2024	12.1	114
11/10/2024	6:00:00	7.6	0.446	0.5	22,192	Open	09:42:07 PM Nov-09-2024	11.5	114
11/10/2024	6:15:00	7.6	0.420	1.2	22,198	Open	09:42:07 PM Nov-09-2024	11.6	114
11/10/2024	6:30:00	7.6	0.435	1.4	22,205	Open	09:42:07 PM Nov-09-2024	11.6	114
11/10/2024	6:45:00	7.6	0.435	1.3	22,212	Open	09:42:07 PM Nov-09-2024	11.6	114
11/10/2024	7:00:00	7.6	0.000	1.1	22,213	Open	09:42:07 PM Nov-09-2024	12.1	114
11/10/2024	7:15:00	7.6	0.000	1	22,213	Open	09:42:07 PM Nov-09-2024	12.7	114
11/10/2024	7:30:00	7.6	0.454	0	22,214	Open	09:42:07 PM Nov-09-2024	13.6	114
11/10/2024	7:45:00	7.6	0.435	0	22,221	Open	09:42:07 PM Nov-09-2024	12.5	114
11/10/2024	8:00:00	7.6	0.454	0	22,228	Open	09:42:07 PM Nov-09-2024	12.5	114
11/10/2024	8:15:00	7.6	0.412	0	22,234	Open	09:42:07 PM Nov-09-2024	12.7	114
11/10/2024	8:30:00	7.6	0.000	0	22,236	Open	09:42:07 PM Nov-09-2024	12.9	113
11/10/2024	8:45:00	7.6	0.000	0.2	22,236	Open	09:42:07 PM Nov-09-2024	13.1	112
11/10/2024	9:00:00	7.6	0.000	0	22,236	Open	09:42:07 PM Nov-09-2024	13.3	111

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/10/2024	9:15:00	7.6	0.454	0	22,237	Open	09:42:07 PM Nov-09-2024	13.5	111
11/10/2024	9:30:00	7.6	0.435	0	22,244	Open	09:42:07 PM Nov-09-2024	12.8	112
11/10/2024	9:45:00	7.6	0.450	0	22,250	Open	09:42:07 PM Nov-09-2024	11.9	112
11/10/2024	10:00:00	7.6	0.431	0.2	22,257	Open	09:42:07 PM Nov-09-2024	11.8	112
11/10/2024	10:15:00	7.6	0.416	0.3	22,263	Open	09:42:07 PM Nov-09-2024	12	112
11/10/2024	10:30:00	7.6	0.431	0.2	22,269	Open	09:42:07 PM Nov-09-2024	12.3	113
11/10/2024	10:45:00	7.6	0.000	0.1	22,274	Open	09:42:07 PM Nov-09-2024	12.8	113
11/10/2024	11:00:00	7.6	0.000	0.2	22,274	Open	09:42:07 PM Nov-09-2024	13.1	113
11/10/2024	11:15:00	7.6	0.000	0.1	22,274	Open	09:42:07 PM Nov-09-2024	13.5	113
11/10/2024	11:30:00	7.6	0.000	0	22,274	Open	09:42:07 PM Nov-09-2024	13.9	114
11/10/2024	11:45:00	7.6	0.000	0.1	22,274	Open	09:42:07 PM Nov-09-2024	14.2	114
11/10/2024	12:00:00	7.6	0.000	0	22,274	Open	09:42:07 PM Nov-09-2024	14.4	113
11/10/2024	12:15:00	7.6	0.000	0	22,274	Open	09:42:07 PM Nov-09-2024	14.5	112
11/10/2024	12:30:00	7.6	0.000	0	22,274	Open	09:42:07 PM Nov-09-2024	14.7	113
11/10/2024	12:45:00	7.6	0.000	0	22,274	Open	09:42:07 PM Nov-09-2024	14.9	113

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/10/2024	13:00:00	7.6	0.000	0	22,274	Open	09:42:07 PM Nov-09-2024	14.9	113
11/10/2024	13:15:00	7.5	0.000	0	22,274	Open	09:42:07 PM Nov-09-2024	14.9	112
11/10/2024	13:30:00	7.5	0.000	0	22,274	Open	09:42:07 PM Nov-09-2024	14.9	111
11/10/2024	13:45:00	7.5	0.000	0	22,274	Open	09:42:07 PM Nov-09-2024	14.9	112
11/10/2024	14:00:00	7.5	0.000	0.2	22,274	Open	09:42:07 PM Nov-09-2024	14.9	111
11/10/2024	14:15:00	7.5	0.454	0.2	22,276	Open	09:42:07 PM Nov-09-2024	14.9	111
11/10/2024	14:30:00	7.6	0.435	0	22,283	Open	09:42:07 PM Nov-09-2024	11.4	111
11/10/2024	14:45:00	7.6	0.446	0	22,289	Open	09:42:07 PM Nov-09-2024	11.3	111
11/10/2024	15:00:00	7.6	0.446	0	22,296	Open	09:42:07 PM Nov-09-2024	11.3	111
11/10/2024	15:15:00	7.6	0.435	0	22,303	Open	09:42:07 PM Nov-09-2024	11.3	111
11/10/2024	15:30:00	7.6	0.431	0	22,309	Open	09:42:07 PM Nov-09-2024	11.3	111
11/10/2024	15:45:00	7.6	0.416	0	22,316	Open	09:42:07 PM Nov-09-2024	11.4	111
11/10/2024	16:00:00	7.6	0.000	0	22,322	Open	09:42:07 PM Nov-09-2024	11.5	112
11/10/2024	16:15:00	7.6	0.000	0	22,322	Open	09:42:07 PM Nov-09-2024	12	113
11/10/2024	16:30:00	7.6	0.000	0	22,322	Open	09:42:07 PM Nov-09-2024	12.5	113

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
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Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/10/2024	16:45:00	7.6	0.000	0	22,322	Open	09:42:07 PM Nov-09-2024	13	113
11/10/2024	17:00:00	7.6	0.000	0	22,322	Open	09:42:07 PM Nov-09-2024	13.4	114
11/10/2024	17:15:00	7.6	0.000	0	22,322	Open	09:42:07 PM Nov-09-2024	13.8	113
11/10/2024	17:45:00	7.6	0.000	0	22,322	Open	09:42:07 PM Nov-09-2024	14.2	113
11/10/2024	18:00:00	7.6	0.000	0	22,322	Open	09:42:07 PM Nov-09-2024	14.4	113
11/10/2024	18:15:00	7.6	0.144	0	22,326	Open	09:42:07 PM Nov-09-2024	15.2	252
11/10/2024	18:30:00	7.6	0.412	0	22,332	Open	09:42:07 PM Nov-09-2024	11.5	113
11/10/2024	18:45:00	7.6	0.420	0	22,338	Open	09:42:07 PM Nov-09-2024	11.4	112
11/10/2024	19:00:00	7.6	0.420	0	22,344	Open	09:42:07 PM Nov-09-2024	11.3	112
11/10/2024	19:15:00	7.6	0.427	0	22,351	Open	09:42:07 PM Nov-09-2024	11.3	111
11/10/2024	19:30:00	7.6	0.408	0	22,357	Open	09:42:07 PM Nov-09-2024	11.3	112
11/10/2024	19:45:00	7.6	0.416	0	22,363	Open	09:42:07 PM Nov-09-2024	11.3	111
11/10/2024	20:00:00	7.6	0.401	0	22,369	Open	09:42:07 PM Nov-09-2024	11.4	112
11/10/2024	20:15:00	7.6	0.404	0	22,375	Open	09:42:07 PM Nov-09-2024	11.4	113
11/10/2024	20:30:00	7.6	0.412	0	22,381	Open	09:42:07 PM Nov-09-2024	11.5	114

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**November 4th to November 10th, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **November 18th**

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Last Discharge Start Time	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/10/2024	20:45:00	7.6	0.000	0	22,382	Open	09:42:07 PM Nov-09-2024	11.9	114
11/10/2024	21:00:00	7.6	0.000	0	22,382	Open	09:42:07 PM Nov-09-2024	12.4	114
11/10/2024	21:15:00	7.6	0.000	0	22,382	Open	09:42:07 PM Nov-09-2024	13	114
11/10/2024	21:30:00	7.6	0.000	0	22,382	Open	09:42:07 PM Nov-09-2024	13.5	114
11/10/2024	21:45:00	7.6	0.000	0	22,382	Open	09:42:07 PM Nov-09-2024	13.9	114
11/10/2024	22:00:00	7.6	0.000	0	22,382	Open	09:42:07 PM Nov-09-2024	14.3	114
11/10/2024	22:15:00	7.6	0.000	0	22,382	Open	09:42:07 PM Nov-09-2024	14.6	114
11/10/2024	22:30:00	7.6	0.000	0	22,382	Open	09:42:07 PM Nov-09-2024	14.8	113
11/10/2024	22:45:00	7.6	0.431	0	22,384	Open	09:42:07 PM Nov-09-2024	15.2	114
11/10/2024	23:00:00	7.6	0.412	0	22,390	Open	09:42:07 PM Nov-09-2024	15.4	252
11/10/2024	23:15:00	7.6	0.416	0	22,396	Open	09:42:07 PM Nov-09-2024	15.6	251
11/10/2024	23:30:00	7.6	0.416	0	22,402	Open	09:42:07 PM Nov-09-2024	15.8	252
11/10/2024	23:45:00	7.6	0.420	0	22,408	Open	09:42:07 PM Nov-09-2024	16.1	250

Photos:

Photo 1: No visible sheen observed in the WTP water, November 9th

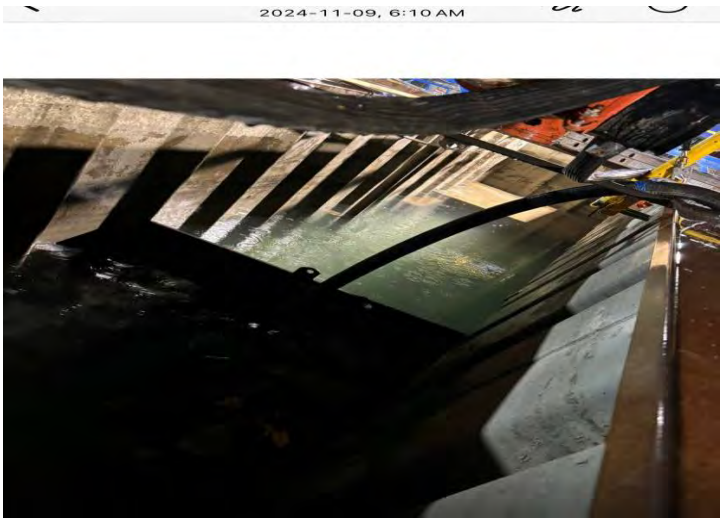
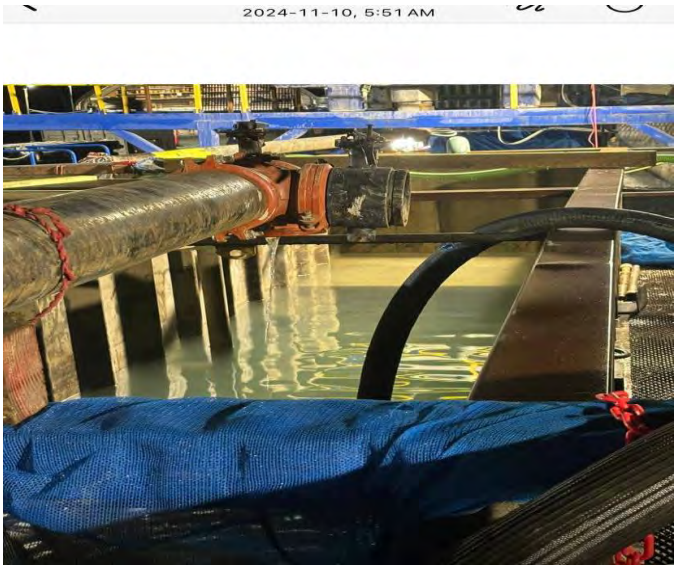



Photo 2: No visible sheen observed in the WTP water, November 10th


Appendix D: Woodfibre Site Receiving Environment Documentation

Woodfibre Site Receiving Environment Sample Analysis

TRITON	Sample ID					WLNG US1 (Upstream)	WLNG DS 1 (Downstream)	Sample or value notes	BCWQ FAL - Short Term	BCWQ FAL - Long Term	BCWQ MAL - Short Term	BCWQ MAL - Long Term
	LAB ID	Reviewed and signed off by:	Fershad Shafiei Ph.D., R.P.Bio.		Fershad Shafiei Ph.D., R.P.Bio.	VA24C9973-001	VA24C9973-002					
	Date Sampled					05-Nov-2024	05-Nov-2024					
	Time Sampled					09:55	12:08					
Analyte	Units	FAL-ST [1,2]	FAL-LT [1,2]	MAL-ST [1]	MAL-LT [1,2]	Water	Water		Guideline notes			
						n/a	n/a					
In Situ Parameters												
pH (field)	pH units	6.5-9.0	6.5-9.0	7.0-8.7	7.0-8.7	6.94	7.32		If natural pH < 6.5, no statistically 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]	-	8.1	8.8		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. Inserts 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	-	-			36	47					
Turbidity (field)	NTU	Varies with background, see note Guideline = 9.5	Varies with background, see note Guideline = 3.27 5-week discrete sampling average = 4.38 (DS)	Varies with background, see note Guideline = 9.5	Varies with background, see note Guideline = 3.27 5-week discrete sampling average = 4.38 (DS)	1.47	1.58		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	10.75	10.87		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	-	-	-	-	10	15.4					
Total Dissolved Solids	mg/L	-	-	-	-	NA	NA					
Total Suspended Solids	mg/L	Varies with background, see note Guideline = 28	Varies with background, see note Guideline = 8.00 5-week discrete sampling average = 4.9 (DS)	Varies with background, see note Guideline = 28	Varies with background, see note Guideline = 8.00 5-week discrete sampling average = 4.9 (DS)	< 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 5 mg/L @ one time for a duration 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 duration 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	-	-	-	-	3.04	2.52			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	6.8	13.2			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 = 22.2	Varies with pH and temperature. See note. Guideline = 1.83	Varies with pH and temperature. See note. Guideline = 131	Varies with pH, temperature and salinity. See note. Guideline = 20.0	0.0055	< 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 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	> 110% of background	< 90% of background	1.05	0.95				Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride entering 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 entering at that time and depth
Fluoride	mg/L	Varies with hardness Guideline =0.408	-	1.5	-	< 0.020	0.043		Guideline has interim status. Guideline is calculated with the following equation: Guideline = [- 0.173 + 0.82 (ln(D hardness))]^2			
Nitrate (as N)	mg/L	32.8	3	-	3.7	0.084	0.0368					
Nitrite (as N)	mg/L	Varies with chloride. Table 27B, see note. Guideline = 0.06	Varies with chloride. Table 27B, see note. Guideline = 0.02	-	-	< 0.0010	< 0.0010		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	-	-	-	-	0.238	0.16					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.0846	0.0393			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	-	-	4.5	3.53			Guidelines for hardness ranges below: Hardness 0 - 30: 128 Hardness 31 - 75: 218 Hardness 76 - 150: 309 Hardness 151 - 250: 429		
Total Metals												
Aluminum (Al)-Total	mg/L	-	Varies with pH, DOC, hardness Guideline = 0.123 5-week field average = 0.118 (US), 0.257 (DS)	-	-	0.178	0.179			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)) + (1.595 * pH) + (-6.284 * (LN(hardness)^ pH))-9.898))/1000) If hardness or DOC is below the hardness range, the minimum hardness or DOC will be applied in the calculation.		
Antimony (Sb)-Total	mg/L	0.26	0.074	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.00032	0.00045					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.00397	0.0042			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	-	-	-	0.000012	0.0000122	0.0000076					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	3.55	5.31					
Cesium (Cs)-Total	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Chromium (Cr) - Total	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Chromium (Cr(III))-Total	mg/L	-	0.0089	-	0.056	-	-			Working guideline status		Working guideline status
Chromium (Cr(VI))-Total	mg/L	-	0.0025	-	0.0015	-	-			Working guideline status		Working guideline status
Cobalt (Co)-Total	mg/L	0.11	0.004	-	-	< 0.0001	< 0.0001					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002 5-week field averages = 0.00178 (US), 0.00125 (DS)	0.00137	0.00091					
Iron (Fe)-Total	mg/L	1				0.079	0.078					
Lead (Pb)-Total	mg/L	-	-	0.14	0.002 5-week field averages = 0.000881 (US), 0.00012 (DS)	0.000098	0.000115		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*ln(hardness)-1.460) where hardness is 8-360 mg/L. Lowest value for guideline is 0.003 mg/L.	Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline equation EXP(1.273*ln(hardness)-4.704) applies to samples with hardness 8-360 mg/L.		
Lithium (Li)-Total	mg/L	-	-	-	-	< 0.0005	< 0.0005					
Magnesium (Mg)-Total	mg/L	-	-	-	-	0.579	0.909					
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 0.82	Varies with hardness Guideline = 0.77	-	-	0.00286	0.00288		Guideline varies with hardness. The guideline is calculated using the following equation: Guideline = (0.0044 * hardness + 0.055) 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 = (0.0102 * 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(bkrtgtotalHg); When MeHg ≥ 0.5% of total Hg, guideline is equal to 0.02 mg/L.		
Molybdenum (Mo)-Total	mg/L	46	7.6	-	-	0.00051	0.00252					
Nickel (Ni)-Total	mg/L	-	-	-	0.0083	0.00052	< 0.0005			Working guideline status. Guideline varies with hardness. Refer to BC Water Quality Guidelines for more information. Hardness 0 to 60: 0.025 Hardness > 60 ≤ 180: Guideline = (EXP((0.76 * (LN(hardness)) + 0.06)))/1000 Hardness ≥ 180: 0.15		Working guideline status
Phosphorus (P)-Total	mg/L	-	0.005 to 0.015	-	-	0.089	0.059			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	-	-	-	-	0.395	0.445					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00064	0.00077					
Selenium (Se)-Total	mg/L	-	0.002	-	0.002	< 0.000050	< 0.000050			Guideline for freshwater aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidelines and sampling guidance.		Guideline for marine aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidelines and sampling guidance.
Silicon (Si)-Total	mg/L	-	-	-	-	3.98	4.28					
Silver (Ag)-Total	mg/L	Varies with hardness, see note Guideline = 0.0001	Varies with hardness, see note Guideline = 0.00005	0.003	0.0015	< 0.000010	< 0.000010		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	-	-	-	-	1.83	1.86					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0139	0.0168					
Sulfur (S)-Total	mg/L	-	-	-	-	n.a.	n.a.					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.00003 5-week field average = =0.0000125 (US), =0.000012 (DS)	-	-	< 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 the 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	-	-	-	-	0.00202	0.00197					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Total	mg/L	0.0165	0.0075	-	-	0.000153	0.000497			Working guideline status		
Vanadium (V)-Total	mg/L	-	0.05	-	0.005	< 0.00050	< 0.00050					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	0.010 5-week field average = 0.003 (US), 0.0047 (DS)	< 0.0030	< 0.0030					
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0077	0.0857					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.0001	< 0.0001					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00027	0.00041					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00322	0.00356					
Beryllium (Be)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Bismuth (Bi)-Dissolved	mg/L	-	-	-	-	< 0.00005	< 0.00005					
Boron (B)-Dissolved	mg/L	-	-	-	-	< 0.010	< 0.010					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note Guideline = 0.00055	Varies with hardness, see note Guideline = 0.000075	-	-	0.0000063	0.0000069		Guideline is hardness dependent. Guideline is applicable to water hardness between 7.0 and 433 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(1.021 * (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 205 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(0.7768 * (LN(hardness)) - 4.942))/1000) Lowest value for guideline 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	-	-	2.8	4.88			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	-	-	-	-	< 0.00001	< 0.00001					
Chromium (Cr)-Dissolved	mg/L	-	-	-	-	< 0.0005	< 0.0005					
Chromium (Cr(III))-Dissolved	mg/L	-	-	-	-	-	-					
Chromium (Cr(VI))-Dissolved	mg/L	-	-	-	-	-	-					
Cobalt (Co)-Dissolved	mg/L	-	-	-	-	< 0.0001	< 0.0001					
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note Guideline = 0.002	Guideline varies with other parameters, see note Guideline = 0.0006 5-week field average = 0.00168 (US), 0.00107 (DS)	-	-	0.00124	0.00078		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	-	-	-	0.227	0.219					
Lead (Pb)-Dissolved	mg/L	-	Guideline varies with DOC and hardness Guideline: 0.0033 5-week field average = =0.00025 (US), =0.00055 (DS)	-	-	< 0.000050	< 0.000050			Guideline varies with DOC and hardness, refer to BC Water Quality Guidelines for more information. Guideline uses equation (EXP((0.514*LN(DOC))+(0.214*LN(hardness)))+0.4354))/2/1000 where DOC range is 0.5-31.5 mg/L and hardness range is 4.7-511 mg/L		
Lithium (Li)-Dissolved	mg/L	-	-	-	-	< 0.0010	< 0.0010					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.57	0.903					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.0016	0.00157					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.000923	0.00246					
Nickel (Ni)-Dissolved	mg/L	Guideline varies with pH, temperature, DOC, and hardness Guideline: 0.01145	Guideline varies with pH, temperature, DOC, and hardness Guideline: 0.00143 5-week field average = 0.00112 (US), 0.00087 (DS)	-	-	0.0005	< 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	-	-	-	-	0.053	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	0.395	0.43					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00039	0.00067					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.00005	< 0.00005					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	4	4.29					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	1.81	1.77					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0126	0.0157					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	1.34	1.12					
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	-	-	-	-	0.00056	0.0005					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.00013	0.000435					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness Guideline = 0.010	Varies with pH, DOC, hardness Guideline = 0.0062 5-week field average = 0.0017 (US), 0.0043 (DS)	-	-	0.0018	0.0022		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))/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((0.8774 * (LN(hardness)) - (0.815 * pH) + (0.398 * (LN(DOC)))) + 4.485))/1000) Guideline only applies to water with pH between 6.5 and 8.13, DOC between 0.3 and 22.9 mg/L, and hardness between 25-4 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 Quality Guidelines for the Protection of Aquatic Life. Wildlife & Agriculture. Accessed from: appl_summary_aquaticlife_wildlife_agri.pdf (gov.bc.ca)

[2]BC MOECCS. 2021. BC Working Water Quality Guidelines for the Protection of Aquatic Life. Wildlife & 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 presented 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 guideline.

Parameters Used to Calculate Guidelines

Analyte	Units	Method of Measurements	Values WLNG US1 (Upstream)	Values WLNG DS 1 (Downstream)
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations	6.94	7.32
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations	8.1	8.8
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations	1.47	1.58
Hardness (as $CaCO_3$) (total)	mg/L	Laboratory tested total hardness taken at each respective sample site on the day of sampling used in guideline calculations	10	15.4
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations	3.04	2.52
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations	6.8	13.2
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations	1.05	0.95

Woodfibre Site Receiving Environment Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order	: **VA24C9975**		
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 05-Nov-2024 17:30
PO	: 11964-Task 20-Phase 3c-4c	Date Analysis Commenced	: 06-Nov-2024
C-O-C number	: ----	Issue Date	: 13-Nov-2024 12:42
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
	Analyst	Metals, Burnaby, British Columbia
	Supervisor - Metals ICP Instrumentation	Inorganics, Burnaby, British Columbia
	Department Manager - Metals	Metals, Burnaby, British Columbia
	Lab Assistant	Inorganics, Burnaby, British Columbia
	Senior Analyst	Inorganics, Waterloo, Ontario
	Senior Analyst	Metals, Waterloo, Ontario
		Metals, Burnaby, British Columbia
	Account Manager Assistant	Administration, Burnaby, British Columbia
	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia

General Comments

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

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

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

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

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

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

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

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	WLNG US1	WLNG DS1	----	----	----
				Client sampling date / time	05-Nov-2024 09:55	05-Nov-2024 12:08	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9975-001	VA24C9975-002	----	----	----
					Result	Result	----	----	----
Field Tests									
Conductivity, field	----	EF001/VA	0.10	µS/cm	36.000	47.000	----	----	----
pH, field	----	EF001/VA	0.10	pH units	6.84	7.32	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	8.10	8.80	----	----	----
Physical Tests									
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	9.34	14.2	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	10.0	15.4	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	35	37	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	6.8	13.2	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0055	<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	1.05	0.95	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	<0.020	0.043	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.0840	0.0368	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	<0.0010	<0.0010	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.228	0.160	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0846	0.0393	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	4.50	3.53	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	3.04	2.52	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG US1	WLNG DS1	----	----	----
					Client sampling date / time	05-Nov-2024 09:55	05-Nov-2024 12:08	----	----	----
						VA24C9975-001	VA24C9975-002	----	----	----
						Result	Result	----	----	----
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		0.178	0.179	----	----	----
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		0.00032	0.00044	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00397	0.00420	----	----	----
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		0.0000112	0.0000076	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		3.05	5.31	----	----	----
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		0.00137	0.00091	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.079	0.078	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000098	0.000115	----	----	----
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		0.579	0.509	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	WLNG US1	WLNG DS1	----	----	----
				Client sampling date / time	05-Nov-2024 09:55	05-Nov-2024 12:08	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9975-001	VA24C9975-002	----	----	----
					Result	Result	----	----	----
Total Metals									
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.00286	0.00288	----	----	----
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	0.000510	0.00252	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L	0.00052	<0.00050	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	0.089	0.059	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	0.395	0.448	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.00044	0.00077	----	----	----
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	3.96	4.28	----	----	----
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	1.83	1.86	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	0.0139	0.0168	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	1.50	1.17	----	----	----
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	0.00340	0.00387	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.000153	0.000497	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG US1	WLNG DS1	----	----	----
					Client sampling date / time	05-Nov-2024 09:55	05-Nov-2024 12:08	----	----	----
						VA24C9975-001	VA24C9975-002	----	----	----
						Result	Result	----	----	----
Total Metals										
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		<0.0030	<0.0030	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0977	0.0857	----	----	----
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		0.00027	0.00041	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00322	0.00356	----	----	----
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		0.0000063	0.0000069	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		2.80	4.88	----	----	----
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		0.00124	0.00078	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.027	0.019	----	----	----
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		0.570	0.503	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00160	0.00157	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG US1	WLNG DS1	----	----	----
					Client sampling date / time	05-Nov-2024 09:55	05-Nov-2024 12:08	----	----	----
						VA24C9975-001	VA24C9975-002	----	----	----
						Result	Result	----	----	----
Dissolved Metals										
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		0.000503	0.00246	----	----	----
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		0.083	<0.050	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		0.393	0.430	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00039	0.00067	----	----	----
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		4.00	4.29	----	----	----
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		1.81	1.77	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0126	0.0157	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		1.34	1.12	----	----	----
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		0.00056	0.00050	----	----	----
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		0.000130	0.000433	----	----	----
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		0.0018	0.0022	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)			Client sample ID		WLNG US1	WLNG DS1	----	----	----
			Client sampling date / time		05-Nov-2024 09:55	05-Nov-2024 12:08	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9975-001	VA24C9975-002	----	----	----
					Result	Result	----	----	----
Dissolved Metals									
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-	Field	Field	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Field	Field	----	----	----
Speciated Metals									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/WT	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/WT	0.00050	mg/L	<0.00050	<0.00050	----	----	----

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

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

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24C9975**	Page	: 1 of 14
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 05-Nov-2024 17:30
PO	: 11964-Task 20-Phase 3c-4c	Issue Date	: 13-Nov-2024 12:40
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
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

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

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 DS1	E298	05-Nov-2024	08-Nov-2024	28 days	3 days	✓	10-Nov-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG US1	E298	05-Nov-2024	08-Nov-2024	28 days	3 days	✓	10-Nov-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG DS1	E235.Br-L	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG US1	E235.Br-L	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG DS1	E235.Cl	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG US1	E235.Cl	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG DS1	E235.F	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-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 : Fluoride in Water by IC										
HDPE WLNG US1	E235.F	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG DS1	E235.NO3-L	05-Nov-2024	06-Nov-2024	3 days	1 days	✓	06-Nov-2024	3 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG US1	E235.NO3-L	05-Nov-2024	06-Nov-2024	3 days	1 days	✓	06-Nov-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG DS1	E235.NO2-L	05-Nov-2024	06-Nov-2024	3 days	1 days	✓	06-Nov-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG US1	E235.NO2-L	05-Nov-2024	06-Nov-2024	3 days	1 days	✓	06-Nov-2024	3 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG DS1	E235.SO4	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG US1	E235.SO4	05-Nov-2024	06-Nov-2024	28 days	1 days	✓	06-Nov-2024	28 days	1 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG DS1	E366	05-Nov-2024	08-Nov-2024	28 days	3 days	✓	08-Nov-2024	28 days	3 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG US1	E366	05-Nov-2024	08-Nov-2024	28 days	3 days	✓	08-Nov-2024	28 days	3 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times 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 DS1	E372-U	05-Nov-2024	08-Nov-2024	28 days	3 days	✓	10-Nov-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG US1	E372-U	05-Nov-2024	08-Nov-2024	28 days	3 days	✓	10-Nov-2024	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
WLNG DS1	E509	05-Nov-2024	09-Nov-2024	28 days	4 days	✓	09-Nov-2024	28 days	4 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
WLNG US1	E509	05-Nov-2024	09-Nov-2024	28 days	4 days	✓	09-Nov-2024	28 days	4 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
WLNG DS1	E421	05-Nov-2024	08-Nov-2024	180 days	3 days	✓	12-Nov-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
WLNG US1	E421	05-Nov-2024	08-Nov-2024	180 days	4 days	✓	12-Nov-2024	180 days	7 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Amber glass dissolved (sulfuric acid)										
WLNG DS1	EF001	05-Nov-2024	----	----	----		06-Nov-2024	----	1 days	
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Amber glass dissolved (sulfuric acid)										
WLNG US1	EF001	05-Nov-2024	----	----	----		06-Nov-2024	----	1 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG DS1	E358-L	05-Nov-2024	08-Nov-2024	28 days	3 days	✓	08-Nov-2024	28 days	3 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times 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 US1	E358-L	05-Nov-2024	08-Nov-2024	28 days	3 days	✓	08-Nov-2024	28 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG DS1	E290	05-Nov-2024	06-Nov-2024	14 days	1 days	✓	06-Nov-2024	14 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG US1	E290	05-Nov-2024	06-Nov-2024	14 days	1 days	✓	06-Nov-2024	14 days	1 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG DS1	E162	05-Nov-2024	----	----	----		11-Nov-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG US1	E162	05-Nov-2024	----	----	----		11-Nov-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG DS1	E160	05-Nov-2024	----	----	----		11-Nov-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG US1	E160	05-Nov-2024	----	----	----		11-Nov-2024	7 days	6 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
WLNG DS1	E532	05-Nov-2024	----	----	----		08-Nov-2024	28 days	3 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
WLNG US1	E532	05-Nov-2024	----	----	----		08-Nov-2024	28 days	3 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times 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 DS1	E508	05-Nov-2024	08-Nov-2024	28 days	3 days	✓	08-Nov-2024	28 days	3 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
WLNG US1	E508	05-Nov-2024	08-Nov-2024	28 days	4 days	✓	08-Nov-2024	28 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
WLNG DS1	E420	05-Nov-2024	08-Nov-2024	180 days	3 days	✓	09-Nov-2024	180 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
WLNG US1	E420	05-Nov-2024	08-Nov-2024	180 days	3 days	✓	09-Nov-2024	180 days	4 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG DS1	E395	05-Nov-2024	----	----	----		06-Nov-2024	7 days	1 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG US1	E395	05-Nov-2024	----	----	----		06-Nov-2024	7 days	1 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	1752731	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	1757538	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1752737	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	1752732	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1759484	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1755576	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1757539	1	7	14.2	5.0	✓
Fluoride in Water by IC	E235.F	1752736	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1752734	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1752735	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	1752733	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1760569	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1757153	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1758783	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1755210	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1757533	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1757537	1	13	7.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1752751	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1760561	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1752731	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	1757538	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1752737	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	1752732	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1759484	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1755576	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1757539	1	7	14.2	5.0	✓
Fluoride in Water by IC	E235.F	1752736	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1752734	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1752735	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	1752733	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1760569	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1757153	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1758783	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1755210	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1757533	1	15	6.6	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	1757537	1	13	7.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1752751	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1760561	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1752731	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	1757538	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1752737	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	1752732	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1759484	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1755576	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1757539	1	7	14.2	5.0	✓
Fluoride in Water by IC	E235.F	1752736	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1752734	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1752735	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	1752733	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1760569	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1757153	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1758783	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1755210	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1757533	1	15	6.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1757537	1	13	7.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1752751	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1760561	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1757538	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1752737	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	1752732	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1759484	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1755576	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1757539	1	7	14.2	5.0	✓
Fluoride in Water by IC	E235.F	1752736	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1752734	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1752735	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	1752733	1	18	5.5	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1757153	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1758783	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1755210	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1757533	0	15	0.0	5.0	×
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1757537	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*
Matrix Spikes (MS) - Continued							
Total Sulfide by Colourimetry (Automated Flow)	E395	1752751	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 - Waterloo	Water	APHA 3500-Cr C (Ion Chromatography)	Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection. Results are based on an un-filtered, field-preserved sample.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as 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 - Waterloo	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
Field pH,EC,Salinity, TDS, 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	: **VA24C9975**	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	: 05-Nov-2024 17:30
PO	: 11964-Task 20-Phase 3c-4c	Date Analysis Commenced	: 06-Nov-2024
C-O-C number	: ----	Issue Date	: 13-Nov-2024 12:40
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*
	Analyst	Vancouver Metals, Burnaby, British Columbia
	Supervisor - Metals ICP Instrumentation	Vancouver Inorganics, Burnaby, British Columbia
	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
	Senior Analyst	Waterloo Inorganics, Waterloo, Ontario
	Senior Analyst	Waterloo Metals, Waterloo, Ontario
		Vancouver Metals, Burnaby, British Columbia
	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1752731)											
VA24C9958-006	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	31.8	31.8	0.00%	20%	----
Physical Tests (QC Lot: 1760561)											
FJ2403432-004	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	11.9	10.9	1.0	Diff <2x LOR	----
Physical Tests (QC Lot: 1760569)											
FJ2403432-004	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	233	227	2.60%	20%	----
Anions and Nutrients (QC Lot: 1752732)											
VA24C9958-004	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1752733)											
VA24C9958-004	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	54.8	54.8	0.0212%	20%	----
Anions and Nutrients (QC Lot: 1752734)											
VA24C9958-004	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.108	0.115	7.05%	20%	----
Anions and Nutrients (QC Lot: 1752735)											
VA24C9958-004	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: 1752736)											
VA24C9958-004	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.090	0.088	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1752737)											
VA24C9958-004	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: 1757533)											
VA24C9847-001	Anonymous	Nitrogen, total	7727-37-9	E366	30.0	mg/L	1130	1150	1.92%	20%	----
Anions and Nutrients (QC Lot: 1757537)											
VA24C9975-001	WLNG US1	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0846	0.0845	0.118%	20%	----
Anions and Nutrients (QC Lot: 1757538)											
VA24C9847-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	2.00	mg/L	70.0	71.4	1.99%	20%	----
Organic / Inorganic Carbon (QC Lot: 1757539)											
VA24C9975-001	WLNG US1	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.04	3.74	0.70	Diff <2x LOR	----
Total Sulfides (QC Lot: 1752751)											
VA24C9788-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	0.0015	0.00003	Diff <2x LOR	----
Total Metals (QC Lot: 1755210)											
VA24C9760-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0325	0.0318	2.18%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 1755210) - continued											
VA24C9760-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00010	0.00010	0.000003	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0149	0.0153	2.78%	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	0.0000069	0.0000062	0.0000007	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	4.44	4.42	0.663%	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	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.032	0.032	0.00001	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0020	0.0020	0.00002	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	0.873	0.893	2.32%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00103	0.00104	0.499%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000065	0.000063	0.000003	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	0.125	0.136	0.011	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00036	0.00034	0.00002	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	7.56	7.52	0.502%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	2.05	2.04	0.642%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0271	0.0274	0.838%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	0.64	0.59	0.05	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.00043	0.00046	0.00003	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	0.000102	0.000100	1.00%	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: 1755210) - continued											
VA24C9760-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1758783)											
VA24C9870-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1755576)											
VA24D0002-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0017	0.0016	0.0001	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.0226	0.0224	0.697%	20%	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00086	0.00084	0.00002	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0289	0.0288	0.0818%	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	0.358	0.333	7.32%	20%	----
		Cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	<0.0000100	<0.0000100	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	63.7	64.9	1.86%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.00688	0.00702	2.12%	20%	----
		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	0.00078	0.00079	0.00002	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00037	0.00033	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	0.350	0.345	1.46%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	7.73	7.85	1.57%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0566	0.0566	0.00560%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0394	0.0391	0.694%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00088	0.00090	0.00003	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	60.1	60.8	1.25%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.0815	0.0838	2.83%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.00290	0.00287	1.34%	20%	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.41	1.42	0.849%	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	171	174	2.02%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	1.14	1.18	3.55%	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*
Dissolved Metals (QC Lot: 1755576) - continued											
VA24D0002-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	156	152	2.79%	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	0.000174	0.000179	2.63%	20%	----
		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	0.00364	0.00361	0.889%	20%	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000623	0.000640	2.70%	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	<0.0010	<0.0010	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1759484)											
VA24C9870-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1757153)											
VA24C9972-001	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: 1752731)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1760561)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1760569)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1752732)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1752733)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1752734)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1752735)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1752736)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1752737)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1757533)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1757537)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1757538)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1757539)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1752751)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1755210)						
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: 1755210) - 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: 1758783)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1755576)						
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: 1755576) - 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: 1759484)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1757153)						
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: 1752731)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1760561)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	90.6	85.0	115	----
Physical Tests (QCLot: 1760569)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	98.3	85.0	115	----
Anions and Nutrients (QCLot: 1752732)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1752733)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1752734)									
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: 1752735)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.3	90.0	110	----
Anions and Nutrients (QCLot: 1752736)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	96.2	90.0	110	----
Anions and Nutrients (QCLot: 1752737)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 1757533)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1757537)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	96.3	80.0	120	----
Anions and Nutrients (QCLot: 1757538)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	96.7	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1757539)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	98.2	80.0	120	----
Total Sulfides (QCLot: 1752751)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	97.8	80.0	120	----
Total Metals (QCLot: 1755210)									

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: 1755210) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	103	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	105	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	107	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	99.9	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	102	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	106	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	105	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	101	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	99.4	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	107	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	99.6	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	112	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	104	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	100	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	101	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	111	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	97.1	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	110	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	106	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	100.0	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	104	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	106	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	107	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	108	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	108	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: 1755210) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	102	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Total Metals (QCLot: 1758783)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	93.4	80.0	120	----
Dissolved Metals (QCLot: 1755576)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	103	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	98.2	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	105	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	108	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	99.2	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	103	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	93.3	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.4	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	98.0	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	100	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	99.9	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	102	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	106	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	106	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.5	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	106	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	100	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	110	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	92.2	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	108	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	98.0	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	99.4	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: 1755576) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	108	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	104	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	97.8	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	103	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	101	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	99.3	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	101	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	102	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	98.0	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	98.1	80.0	120	----
Speciated Metals (QCLot: 1757153)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	99.3	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: 1752732)										
VA24C9958-005	Anonymous	Chloride	16887-00-6	E235.Cl	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1752733)										
VA24C9958-005	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	100.0 mg/L	100 mg/L	100.0	75.0	125	----
Anions and Nutrients (QCLot: 1752734)										
VA24C9958-005	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.55 mg/L	2.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1752735)										
VA24C9958-005	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.505 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1752736)										
VA24C9958-005	Anonymous	Fluoride	16984-48-8	E235.F	0.994 mg/L	1 mg/L	99.4	75.0	125	----
Anions and Nutrients (QCLot: 1752737)										
VA24C9958-005	Anonymous	Bromide	24959-67-9	E235.Br-L	0.532 mg/L	0.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1757537)										
VA24C9975-002	WLNG DS1	Phosphorus, total	7723-14-0	E372-U	0.0486 mg/L	0.05 mg/L	97.1	70.0	130	----
Anions and Nutrients (QCLot: 1757538)										
VA24C9847-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1757539)										
VA24C9975-002	WLNG DS1	Carbon, dissolved organic [DOC]	----	E358-L	4.51 mg/L	5 mg/L	90.2	70.0	130	----
Total Sulfides (QCLot: 1752751)										
VA24C9788-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.223 mg/L	0.2 mg/L	112	75.0	125	----
Total Metals (QCLot: 1755210)										
VA24C9760-002	Anonymous	Aluminum, total	7429-90-5	E420	0.184 mg/L	0.2 mg/L	91.9	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		Barium, total	7440-39-3	E420	0.0182 mg/L	0.02 mg/L	90.9	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0398 mg/L	0.04 mg/L	99.4	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0101 mg/L	0.01 mg/L	101	70.0	130	----
		Boron, total	7440-42-8	E420	0.098 mg/L	0.1 mg/L	97.6	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00409 mg/L	0.004 mg/L	102	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0106 mg/L	0.01 mg/L	106	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0406 mg/L	0.04 mg/L	102	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Copper, total	7440-50-8	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1755210) - continued										
VA24C9760-002	Anonymous	Iron, total	7439-89-6	E420	2.04 mg/L	2 mg/L	102	70.0	130	----
		Lead, total	7439-92-1	E420	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0981 mg/L	0.1 mg/L	98.1	70.0	130	----
		Magnesium, total	7439-95-4	E420	0.959 mg/L	1 mg/L	95.9	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0198 mg/L	0.02 mg/L	99.2	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		Phosphorus, total	7723-14-0	E420	10.4 mg/L	10 mg/L	104	70.0	130	----
		Potassium, total	7440-09-7	E420	3.88 mg/L	4 mg/L	97.1	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0399 mg/L	0.04 mg/L	99.8	70.0	130	----
		Silicon, total	7440-21-3	E420	9.77 mg/L	10 mg/L	97.7	70.0	130	----
		Silver, total	7440-22-4	E420	0.00408 mg/L	0.004 mg/L	102	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	19.6 mg/L	20 mg/L	97.8	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0396 mg/L	0.04 mg/L	98.9	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00382 mg/L	0.004 mg/L	95.6	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		Tin, total	7440-31-5	E420	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00398 mg/L	0.004 mg/L	99.5	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0994 mg/L	0.1 mg/L	99.4	70.0	130	----
		Zinc, total	7440-66-6	E420	0.402 mg/L	0.4 mg/L	100	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0407 mg/L	0.04 mg/L	102	70.0	130	----
Total Metals (QCLot: 1758783)										
VA24C9901-001	Anonymous	Mercury, total	7439-97-6	E508	0.00486 mg/L	0.005 mg/L	97.3	70.0	130	----
Dissolved Metals (QCLot: 1755576)										
VA24D0002-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.198 mg/L	0.2 mg/L	99.0	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0181 mg/L	0.02 mg/L	90.7	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0367 mg/L	0.04 mg/L	91.8	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00950 mg/L	0.01 mg/L	95.0	70.0	130	----
		Boron, dissolved	7440-42-8	E421	ND mg/L	----	ND	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00388 mg/L	0.004 mg/L	97.0	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00961 mg/L	0.01 mg/L	96.1	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0190 mg/L	0.02 mg/L	95.0	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0185 mg/L	0.02 mg/L	92.4	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.91 mg/L	2 mg/L	95.6	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1755576) - continued										
VA24D0002-002	Anonymous	Lead, dissolved	7439-92-1	E421	0.0197 mg/L	0.02 mg/L	98.3	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	ND mg/L	----	ND	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	0.0374 mg/L	0.04 mg/L	93.4	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.2 mg/L	10 mg/L	102	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	ND mg/L	----	ND	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0400 mg/L	0.04 mg/L	100	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	10.0 mg/L	10 mg/L	100	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	0.0432 mg/L	0.04 mg/L	108	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00370 mg/L	0.004 mg/L	92.6	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00388 mg/L	0.004 mg/L	96.9	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.402 mg/L	0.4 mg/L	100	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
Dissolved Metals (QCLot: 1759484)										
VA24C9901-001	Anonymous	Mercury, dissolved	7439-97-6	E509	ND mg/L	----	ND	70.0	130	----
Speciated Metals (QCLot: 1757153)										
VA24C9972-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0407 mg/L	0.04 mg/L	102	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
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:	

Report Format / Distribution

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): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E1 - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: 13-Nov-2024

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

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): C9975

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 (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 detail)	NUMBER OF CONTAINERS
	WLNG US 1	05-NOV-24	09:55	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 6.84 cond: 36 µS/cm temp: 8.1 °C																	
	WLNG DS 1	05-NOV-24	12:08	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 7.32 cond: 47 µS/cm temp: 8.8 °C																	

Environmental Division
Vancouver
Work Order Reference
VA24C9975

Telephone : + 1 604 253 4188

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

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

Are samples for human consumption/ use? ☐ ☑ NO

Special Instructions / Specify Criteria to (el

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)		
Released by:	Date: 05-NOV-24	Time: 17:09	Received by:	Date:	Time:	Received by:	Date: NOV 5	Time: 5:30pm

RE ONS 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.

Woodfibre Site Receiving Environment Field Notes and Logs

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-11-5-Chycoski-7AAEE

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	11/05/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.66919 -123.248257
Temperature(c):	Low 5 High 10	**Permit:**	PE 110136
Weather Conditions:	Overcast	**Ground Conditions:**	Damp

Observations

Time: 12:08:00 **Flow Volume (visual):** moderate

Notes:

Odour Detected?:	No	**Notes:**	
Unusual Colour?	No	**Notes:**	
Unusual Observations?	No	**Notes:**	
Sheen on Water?	No	**Notes:**	

Samples Collected - Parameters

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

Logger Maintenance

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

Describe Logger Maintenance

Photos

Photo: 1

Location: EAS DS 1

Description: US view

Photo: 2

Location: EAS DS 1

Description: Across view

2024-11-5-Chycoski-7AAEE

Photos

Photo: 3

Location: EAS DS 1

Description: DS vew

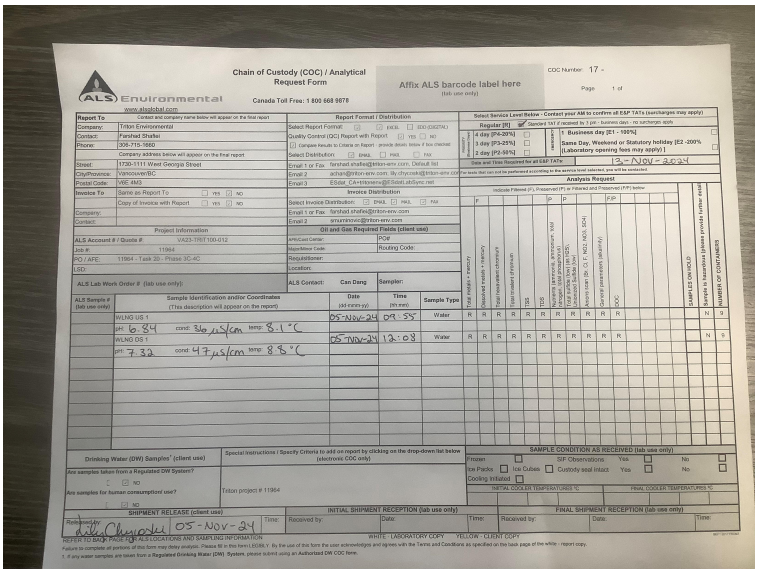


Photo: 4

Location: EAS DS 1

Description: Lab COC

Sign Off

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

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-11-5-Chycoski-056B5

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	11/05/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.669455 -123.25087
Temperature(c):	Low 5 High 10	**Permit:**	PE 110136
Weather Conditions:	Overcast	**Ground Conditions:**	Damp

Observations

Time: 09:55:00 **Flow Volume (visual):** moderate

Notes:

Odour Detected?:	No	**Notes:**	
Unusual Colour?	No	**Notes:**	
Unusual Observations?	No	**Notes:**	
Sheen on Water?	No	**Notes:**	

Samples Collected - Parameters

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

Logger Maintenance

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

Describe Logger Maintenance

2024-11-5-Chycoski-056B5

Photos

Photo: 1

Location: EAS US 1

Description: US view

Photo: 2

Location: EAS US 1

Description: Across view

2024-11-5-Chycoski-056B5

Photos

Photo: 3

Location: EAS US 1

Description: DS view

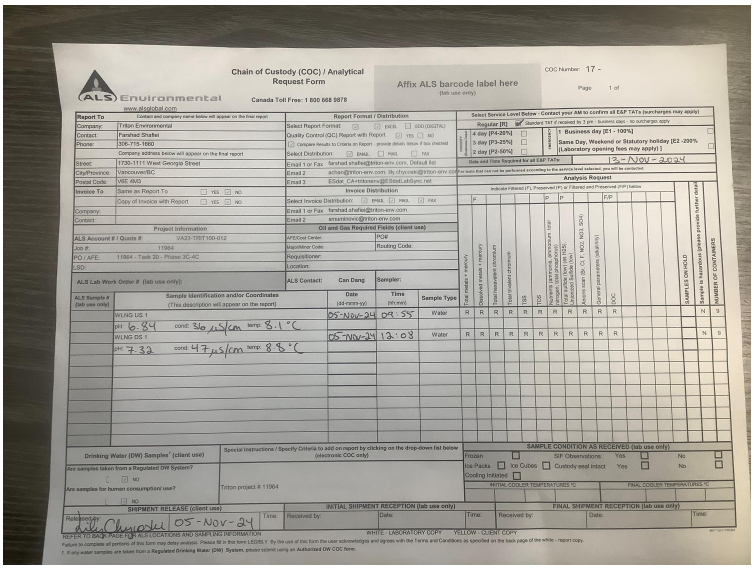


Photo: 4

Location: EAS US 1

Description: Lab COC

Sign Off

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

Woodfibre Plant site East Creek (WC 309-R2)	EAS DS1							EAS US1 (Background)					
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)
11/04/2024 0:00	9.1	42.7	0.0	7.5	10.6	3.8	11/04/2024 0:00	8.8	20.7	7.1	10.5	0.1
11/04/2024 0:15	8.9	29.4	0.0	7.1	10.6	3.9	11/04/2024 0:15	8.8	20.4	7.1	10.5	0.1
11/04/2024 0:30	8.8	28.0	0.0	6.9	10.7	3.8	11/04/2024 0:30	8.8	20.6	7.1	10.5	0.2
11/04/2024 0:45	8.9	31.4	0.0	7.1	10.7	4.0	11/04/2024 0:45	8.8	20.6	7.1	10.5	0.1
11/04/2024 1:00	9.1	54.1	0.0	7.3	10.6	3.9	11/04/2024 1:00	8.8	21.2	7.1	10.5	0.2
11/04/2024 1:15	9.2	54.7	0.0	7.4	10.6	3.9	11/04/2024 1:15	8.8	21.6	7.1	10.5	0.2
11/04/2024 1:30	9.2	55.0	0.0	7.4	10.6	4.1	11/04/2024 1:30	8.8	22.0	7.1	10.5	0.1
11/04/2024 1:45	9.2	55.2	0.0	7.5	10.6	4.0	11/04/2024 1:45	8.8	21.9	7.1	10.5	0.1
11/04/2024 2:00	8.9	34.9	0.0	7.2	10.6	3.9	11/04/2024 2:00	8.8	23.0	7.1	10.5	0.2
11/04/2024 2:15	8.8	29.8	0.0	7.0	10.7	4.1	11/04/2024 2:15	8.8	24.5	7.1	10.5	0.1
11/04/2024 2:30	8.8	29.8	0.0	6.9	10.7	3.9	11/04/2024 2:30	8.8	30.1	7.2	10.5	0.3
11/04/2024 2:45	8.8	42.8	0.0	7.1	10.7	4.2	11/04/2024 2:45	8.7	35.5	7.2	10.5	0.4
11/04/2024 3:00	9.0	57.8	0.0	7.5	10.6	4.6	11/04/2024 3:00	8.7	41.4	7.3	10.5	2.0
11/04/2024 3:15	9.0	60.9	0.0	7.5	10.6	5.5	11/04/2024 3:15	8.7	47.0	7.4	10.6	6.1
11/04/2024 3:30	9.0	62.4	0.0	7.3	10.7	8.0	11/04/2024 3:30	8.7	55.6	7.4	10.5	10.1
11/04/2024 3:45	9.0	68.4	0.0	7.4	10.6	10.5	11/04/2024 3:45	8.6	57.0	7.4	10.6	12.3
11/04/2024 4:00	8.9	71.8	0.0	7.4	10.6	13.1	11/04/2024 4:00	8.6	62.2	7.5	10.6	10.8
11/04/2024 4:15	8.9	73.9	0.0	7.4	10.7	16.8	11/04/2024 4:15	8.5	68.7	7.5	10.6	17.3
11/04/2024 4:30	8.9	78.7	0.0	7.4	10.6	14.9	11/04/2024 4:30	8.5	69.7	7.6	10.6	20.7
11/04/2024 4:45	8.7	72.4	0.0	7.3	10.7	22.7	11/04/2024 4:45	8.5	74.1	7.6	10.6	20.5
11/04/2024 5:00	8.6	74.4	0.0	7.2	10.7	21.3	11/04/2024 5:00	8.5	76.4	7.6	10.6	15.0
11/04/2024 5:15	8.7	85.2	0.0	7.4	10.7	18.5	11/04/2024 5:15	8.5	78.4	7.6	10.6	14.7
11/04/2024 5:30	8.7	87.3	0.0	7.4	10.7	20.9	11/04/2024 5:30	8.5	79.6	7.6	10.6	19.9
11/04/2024 5:45	8.7	83.3	0.0	7.4	10.6	18.5	11/04/2024 5:45	8.5	81.5	7.6	10.6	17.0
11/04/2024 6:00	8.5	82.8	0.0	7.2	10.7	21.9	11/04/2024 6:00	8.4	82.7	7.6	10.6	16.5
11/04/2024 6:15	8.5	84.0	0.0	7.3	10.7	21.8	11/04/2024 6:15	8.4	82.7	7.6	10.6	21.2
11/04/2024 6:30	8.5	84.2	0.0	7.3	10.7	24.3	11/04/2024 6:30	8.4	83.8	7.6	10.6	17.6
11/04/2024 6:45	8.6	90.4	0.0	7.4	10.7	26.5	11/04/2024 6:45	8.5	85.1	7.6	10.6	23.0
11/04/2024 7:00	8.6	91.8	0.0	7.4	10.7	23.7	11/04/2024 7:00	8.4	86.6	7.6	10.6	22.2
11/04/2024 7:15	8.6	92.4	0.0	7.4	10.7	26.6	11/04/2024 7:15	8.3	87.5	7.6	10.6	31.5
11/04/2024 7:30	8.5	93.5	0.0	7.4	10.7	26.6	11/04/2024 7:30	8.3	86.4	7.7	10.6	25.9
11/04/2024 7:45	8.3	86.8	0.0	7.3	10.8	29.0	11/04/2024 7:45	8.3	85.0	7.6	10.7	35.4
11/04/2024 8:00	8.3	86.0	0.0	7.3	10.8	46.3	11/04/2024 8:00	8.2	82.6	7.6	10.6	40.6
11/04/2024 8:15	8.2	82.4	0.0	7.3	10.8	43.9	11/04/2024 8:15	8.2	78.5	7.6	10.7	49.4
11/04/2024 8:30	8.2	82.9	0.0	7.3	10.8	54.1	11/04/2024 8:30	8.1	76.4	7.6	10.7	59.9
11/04/2024 8:45	8.3	78.3	0.0	7.3	10.8	84.3	11/04/2024 8:45	8.1	68.0	7.6	10.7	64.4
11/04/2024 9:00	8.3	70.1	0.0	7.2	10.9	80.7	11/04/2024 9:00	8.2	61.0	7.5	10.7	45.8
11/04/2024 9:15	8.3	61.6	0.0	7.2	10.8	56.6	11/04/2024 9:15	8.2	53.5	7.4	10.7	36.8
11/04/2024 9:30	8.4	56.6	0.0	7.1	10.8	44.2	11/04/2024 9:30	8.3	49.1	7.4	10.6	38.4
11/04/2024 9:45	8.4	50.7	0.0	7.1	10.9	40.5	11/04/2024 9:45	8.4	45.7	7.3	10.6	58.1
11/04/2024 10:00	8.5	46.3	0.0	7.0	10.8	101.6	11/04/2024 10:00	8.5	39.6	7.2	10.6	58.9
11/04/2024 10:15	8.6	43.4	0.0	7.1	10.8	52.2	11/04/2024 10:15	8.6	35.2	7.3	10.5	40.3
11/04/2024 10:30	8.6	39.8	0.0	6.9	10.8	40.5	11/04/2024 10:30	8.7	34.2	7.2	10.5	30.2
11/04/2024 10:45	8.7	38.6	0.0	7.0	10.7	26.0	11/04/2024 10:45	8.7	32.5	7.2	10.5	26.1
11/04/2024 11:00	8.7	37.3	0.0	6.9	10.7	27.3	11/04/2024 11:00	8.8	31.9	7.1	10.4	20.7
11/04/2024 11:15	8.8	36.7	0.0	7.0	10.7	25.5	11/04/2024 11:15	8.8	31.5	7.1	10.5	23.1
11/04/2024 11:30	8.8	36.5	0.0	6.9	10.7	21.1	11/04/2024 11:30	8.8	32.3	7.1	10.4	20.5
11/04/2024 11:45	8.7	33.6	0.0	6.9	10.7	29.2	11/04/2024 11:45	8.8	32.3	7.1	10.4	18.8
11/04/2024 12:00	8.7	33.9	0.0	6.9	10.7	20.0	11/04/2024 12:00	8.8	34.1	7.1	10.5	21.1
11/04/2024 12:15	8.7	35.1	0.0	6.9	10.7	17.0	11/04/2024 12:15	8.8	34.8	7.1	10.5	14.2
11/04/2024 12:30	8.8	35.4	0.0	6.9	10.7	20.9	11/04/2024 12:30	8.9	33.8	7.2	10.5	14.5
11/04/2024 12:45	8.8	37.3	0.0	7.0	10.7	19.0	11/04/2024 12:45	8.9	32.6	7.1	10.5	12.4
11/04/2024 13:00	8.9	36.5	0.0	6.9	10.7	15.5	11/04/2024 13:00	8.9	30.9	7.1	10.4	8.3
11/04/2024 13:15	8.9	35.0	0.0	7.0	10.7	15.1	11/04/2024 13:15	9.0	29.2	7.0	10.4	8.1
11/04/2024 13:30	9.0	33.6	0.0	6.9	10.7	10.0	11/04/2024 13:30	9.0	27.5	7.0	10.4	4.3
11/04/2024 13:45	9.0	32.4	0.0	7.0	10.7	9.2	11/04/2024 13:45	9.0	26.0	7.0	10.4	3.8
11/04/2024 14:00	9.0	31.5	0.0	6.9	10.7	8.3	11/04/2024 14:00	9.1	25.2	7.0	10.4	11.9
11/04/2024 14:15	9.1	30.8	0.0	7.0	10.6	9.2	11/04/2024 14:15	9.1	24.2	6.9	10.4	2.5
11/04/2024 14:30	9.1	30.3	0.0	6.9	10.6	7.1	11/04/2024 14:30	9.1	23.7	7.0	10.4	2.0
11/04/2024 14:45	9.1	29.8	0.0	7.0	10.6	6.8	11/04/2024 14:45	9.1	22.7	7.0	10.4	2.4
11/04/2024 15:00	9.1	29.5	0.0	7.0	10.6	6.6	11/04/2024 15:00	9.2	22.8	7.0	10.4	3.9
11/04/2024 15:15	9.1	29.3	0.0	7.0	10.6	6.9	11/04/2024 15:15	9.2	22.0	7.0	10.4	1.9
11/04/2024 15:30	9.2	29.0	0.0	6.9	10.6	6.1	11/04/2024 15:30	9.2	22.2	7.0	10.4	4.7
11/04/2024 15:45	9.2	28.9	0.0	7.0	10.6	6.8	11/04/2024 15:45	9.2	21.5	7.0	10.4	0.9
11/04/2024 16:00	9.2	28.7	0.0	6.9	10.6	4.6	11/04/2024 16:00	9.2	22.0	7.0	10.4	0.7
11/04/2024 16:15	9.2	27.4	0.0	7.0	10.6	11.1	11/04/2024 16:15	9.2	21.3	7.0	10.4	1.1
11/04/2024 16:30	9.1	24.7	0.0	6.8	10.6	5.1	11/04/2024 16:30	9.2	21.7	7.0	10.4	1.1
11/04/2024 16:45	9.2	27.9	0.0	6.9	10.6	4.6	11/04/2024 16:45	9.2	21.2	7.0	10.4	0.8
11/04/2024 17:00	9.1	23.8	0.0	6.8	10.6	8.5	11/04/2024 17:00	9.1	21.9	7.0	10.4	1.4
11/04/2024 17:15	9.1	23.3	0.0	6.8	10.6	5.4	11/04/2024 17:15	9.1	21.5	7.1	10.5	1.7
11/04/2024 17:30	9.1	28.3	0.0	6.9	10.6	5.0	11/04/2024 17:30	9.1	21.6	7.0	10.5	2.7
11/04/2024 17:45	9.1	30.4	0.0	7.0	10.6	9.3	11/04/2024 17:45	9.0	21.5	7.0	10.5	0.6
11/04/2024 18:00	9.1	30.5	0.0	7.0	10.6	4.8	11/04/2024 18:00	9.0	21.7	7.0	10.5	0.4
11/04/2024 18:15	9.1	30.5	0.0	7.0	10.6	7.0	11/04/2024 18:15	9.0	21.7	7.1	10.5	0.6
11/04/2024 18:30	9.0	28.0	0.0	7.0	10.6	8.3	11/04/2024 18:30	9.0	21.7	7.0	10.5	0.7
11/04/2024 18:45	9.0	24.6	0.0	6.8	10.7	4.2	11/04/2024 18:45	8.9	21.3	7.0	10.5	3.7
11/04/2024 19:00	8.9	24.6	0.0	6.9	10.7	4.1	11/04/2024 19:00	8.9	21.9	7.0	10.5	0.8
11/04/2024 19:15	9.0	30.7	0.0	7.0	10.6	4.6	11/04/2024 19:15	8.9	21.6	7.0	10.5	0.8
11/04/2024 19:30	9.0	31.0	0.0	7.0	10.7	4.2	11/04/2024 19:30	8.9	21.7	7.1	10.5	0.4
11/04/2024 19:45	9.0	30.9	0.0	7.0	10.7	5.0	11/04/2024 19:45	8.8	21.3	7.1	10.5	0.5
11/04/2024 20:00	9.0	31.2	0.0	7.0	10.7	4.7	11/04/2024 20:00	8.8	21.8	7.0	10.5	0.3
11/04/2024 20:15	8.9	24.4	0.0	6.9	10.7	3.5	11/04/2024 20:15	8.8	21.4	7.1	10.5	0.3
11/04/2024 20:30	8.9	24.4	0.0	6.9	10.7	3.8	11/04/2024 20:30	8.8	21.8	7.1	10.6	0.3
11/04/2024 20:45	8.8	24.3	0.0	6.9	10.7	3.6	11/04/2024 20:45	8.7	21.4	7.1	10.5	0.3
11/04/2024 21:00	8.8	26.6	0.0	6.9	10.7	3.7	11/04/2024 21:00	8.7	21.8	7.1	10.6	0.2
11/04/2024 21:15	8.9	31.8	0.0	7.1	10.7	3.9	11/04/2024 21:15	8.7	21.4	7.1	10.6	0.8
11/04/2024 21:30	8.8	27.2	0.0	7.0	10.7	3.6	11/04/2024 21:30	8.6	21.9	7.0	10.6	0.3
11/04/2024 21:45	8.7	24.3	0.0	6.9	10.7	3.5	11/04/2024 21:45	8.6	21.7	7.1	10.6	0.5
11/04/2024 22:00	8.7	24.7	0.0	6.9	10.8	3.7	11/04/2024 22:00	8.6	21.9	7.1	10.6	0.5
11/04/2024 22:15	8.8	32.8	0.0	7.1	10.7	3.5	11/04/2024 22:15	8.5	21.6	7.1	10.6	0.4
11/04/2024 22:30	8.8	33.2	0.0	7.1	10.7	3.7	11/04/2024 22:30	8.5	22.2	7.0	10.6	0.4
11/04/2024 22:45	8.8	33.5	0.0	7.1	10.8	3.5	11/04/2024 22:45	8.5	22.7	7.1	10.6	0.2
11/04/2024 23:00	8.6	24.9	0.0	6.9	10.8	3.5	11/04/2024 23:00	8.5	22.6	7.1	10.6	1.2
11/04/2024 23:15	8.6	24.7	0.0	6.9	10.8	3.5	11/04/2024 23:15	8.4	22.2	7.1	10.6	0.8
11/04/2024 23:30	8.6	24.6	0.0	6.9	10.8	3.6	11/04/2024 23:30	8.4	22.3	7.1	10.7	5.2
11/04/2024 23:45	8.6	33.9	0.0	7.1	10.8	3.4	11/04/2024 23:45	8.4	21.8	7.1	10.7	1.9
11/05/2024 0:00	8.6	34.4	0.0	7.1	10.8	3.4	11/05/2024 0:00	8.4	22.2	7.1	10.7	0.3
11/05/2024 0:15	8.7	34.6	0.0	7.1	10.8	3.3	11/05/2024 0:15	8.4	21.7	7.1	10.7	0.2
11/05/2024 0:30	8.6	32.4	0.0	7.1	10.8	3.4	11/05/2024 0:30	8.3	22.1	7.1	10.7	0.2

11/05/2024 0:45	8.5	24.7	0.0	6.9	10.8	3.8	11/05/2024 0:45	8.3	22.0	7.1	10.7	0.2
11/05/2024 1:00	8.5	24.6	0.0	6.9	10.8	4.4	11/05/2024 1:00	8.3	22.0	7.0	10.7	0.3
11/05/2024 1:15	8.5	24.6	0.0	6.9	10.8	3.5	11/05/2024 1:15	8.3	21.8	7.1	10.7	0.6
11/05/2024 1:30	8.6	35.2	0.0	7.2	10.8	3.4	11/05/2024 1:30	8.3	21.9	7.0	10.7	0.2
11/05/2024 1:45	8.6	35.5	0.0	7.2	10.8	3.3	11/05/2024 1:45	8.3	21.7	7.0	10.7	0.2
11/05/2024 2:00	8.6	35.8	0.0	7.2	10.8	3.3	11/05/2024 2:00	8.3	21.9	7.1	10.7	0.3
11/05/2024 2:15	8.5	25.2	0.0	6.9	10.9	3.3	11/05/2024 2:15	8.3	21.8	7.0	10.7	0.3
11/05/2024 2:30	8.5	24.7	0.0	6.9	10.9	3.4	11/05/2024 2:30	8.3	22.0	7.1	10.7	0.2
11/05/2024 2:45	8.4	24.6	0.0	6.9	10.9	3.4	11/05/2024 2:45	8.3	21.5	7.0	10.7	0.3
11/05/2024 3:00	8.4	24.7	0.0	6.9	10.9	3.4	11/05/2024 3:00	8.3	21.9	7.0	10.7	0.2
11/05/2024 3:15	8.5	36.0	0.0	7.2	10.9	3.5	11/05/2024 3:15	8.2	21.9	7.1	10.7	1.2
11/05/2024 3:30	8.5	36.7	0.0	7.2	10.8	3.4	11/05/2024 3:30	8.2	22.0	7.0	10.7	0.3
11/05/2024 3:45	8.5	36.8	0.0	7.2	10.9	3.3	11/05/2024 3:45	8.2	21.9	7.1	10.7	0.6
11/05/2024 4:00	8.4	25.2	0.0	6.9	10.9	3.4	11/05/2024 4:00	8.2	21.9	7.1	10.7	0.3
11/05/2024 4:15	8.3	24.9	0.0	6.9	10.9	3.5	11/05/2024 4:15	8.2	21.8	7.1	10.7	0.2
11/05/2024 4:30	8.3	24.9	0.0	6.9	10.9	3.6	11/05/2024 4:30	8.1	21.9	7.1	10.7	0.2
11/05/2024 4:45	8.4	37.3	0.0	7.1	10.9	3.4	11/05/2024 4:45	8.1	21.9	7.1	10.8	0.5
11/05/2024 5:00	8.5	37.6	0.0	7.2	10.9	3.6	11/05/2024 5:00	8.1	22.0	7.1	10.8	0.2
11/05/2024 5:15	8.4	37.6	0.0	7.2	10.9	3.5	11/05/2024 5:15	8.1	21.6	7.1	10.8	0.2
11/05/2024 5:30	8.4	37.5	0.0	7.2	10.9	3.6	11/05/2024 5:30	8.1	22.0	7.1	10.8	0.4
11/05/2024 5:45	8.4	37.3	0.0	7.2	10.9	3.5	11/05/2024 5:45	8.1	21.8	7.1	10.8	0.7
11/05/2024 6:00	8.4	37.3	0.0	7.2	10.9	4.3	11/05/2024 6:00	8.1	22.0	7.1	10.8	0.1
11/05/2024 6:15	8.4	37.4	0.0	7.2	10.9	3.4	11/05/2024 6:15	8.1	21.7	7.1	10.8	0.6
11/05/2024 6:30	8.2	25.4	0.0	6.9	10.9	3.7	11/05/2024 6:30	8.1	22.1	7.1	10.8	0.3
11/05/2024 6:45	8.2	25.3	0.0	6.9	10.9	3.6	11/05/2024 6:45	8.0	21.9	7.1	10.8	0.2
11/05/2024 7:00	8.2	25.2	0.0	6.9	10.9	3.5	11/05/2024 7:00	8.0	22.0	7.1	10.8	0.2
11/05/2024 7:15	8.3	35.6	0.0	7.0	10.9	3.8	11/05/2024 7:15	8.0	21.9	7.1	10.8	1.1
11/05/2024 7:30	8.3	38.4	0.0	7.2	10.9	3.4	11/05/2024 7:30	8.0	22.0	7.1	10.8	0.2
11/05/2024 7:45	8.4	38.7	0.0	7.2	10.9	3.5	11/05/2024 7:45	8.0	21.8	7.0	10.8	0.3
11/05/2024 8:00	8.4	38.9	0.0	7.2	10.9	5.7	11/05/2024 8:00	8.0	22.0	7.1	10.8	0.2
11/05/2024 8:15	8.2	25.8	0.0	6.9	11.0	3.4	11/05/2024 8:15	8.0	21.9	7.0	10.8	0.3
11/05/2024 8:30	8.1	25.5	0.0	6.9	11.0	3.5	11/05/2024 8:30	8.0	22.0	7.1	10.8	2.3
11/05/2024 8:45	8.1	25.4	0.0	6.9	11.0	3.4	11/05/2024 8:45	8.0	22.8	7.1	10.8	0.6
11/05/2024 9:00	8.1	25.8	0.0	6.9	11.0	3.6	11/05/2024 9:00	8.0	23.0	7.1	10.8	0.3
11/05/2024 9:15	8.3	40.0	0.0	7.2	10.9	3.4	11/05/2024 9:15	8.0	22.7	7.1	10.8	0.2
11/05/2024 9:30	8.3	40.1	0.0	7.3	10.9	3.5	11/05/2024 9:30	8.0	22.8	7.1	10.8	0.2
11/05/2024 9:45	8.4	40.2	0.0	7.3	10.9	3.4	11/05/2024 9:45	8.0	22.5	7.1	10.8	0.4
11/05/2024 10:00	8.3	34.1	0.0	7.2	10.9	3.5	11/05/2024 10:00	8.0	22.4	7.1	10.8	0.4
11/05/2024 10:15	8.2	26.0	0.0	6.9	11.0	3.5	11/05/2024 10:15	8.0	22.0	7.1	10.9	0.2
11/05/2024 10:30	8.2	25.8	0.0	6.9	11.0	3.5	11/05/2024 10:30	8.0	22.2	7.1	10.8	0.3
11/05/2024 10:45	8.2	25.7	0.0	6.9	11.0	3.4	11/05/2024 10:45	8.1	21.8	7.1	10.9	1.4
11/05/2024 11:00	8.4	40.2	0.0	7.2	10.9	3.7	11/05/2024 11:00	8.1	22.3	7.1	10.8	0.4
11/05/2024 11:15	8.5	40.7	0.0	7.3	10.9	3.7	11/05/2024 11:15	8.2	22.2	7.1	10.8	0.8
11/05/2024 11:30	8.6	40.8	0.0	7.3	10.9	3.9	11/05/2024 11:30	8.2	22.3	7.1	10.8	1.2
11/05/2024 11:45	8.6	40.0	0.0	7.3	10.9	4.0	11/05/2024 11:45	8.3	22.0	7.1	10.8	1.6
11/05/2024 12:00	8.6	29.3	0.0	7.2	10.9	4.3	11/05/2024 12:00	8.3	22.1	7.1	10.8	1.5
11/05/2024 12:15	8.5	26.0	0.0	7.0	10.9	6.4	11/05/2024 12:15	8.4	21.9	7.1	10.8	1.7
11/05/2024 12:30	8.6	25.9	0.0	6.9	10.9	4.5	11/05/2024 12:30	8.4	22.3	7.1	10.8	1.3
11/05/2024 12:45	8.8	40.4	0.0	7.2	10.8	4.4	11/05/2024 12:45	8.4	22.3	7.1	10.7	3.6
11/05/2024 13:00	8.8	40.8	0.0	7.3	10.8	4.3	11/05/2024 13:00	8.5	22.3	7.1	10.7	1.2
11/05/2024 13:15	8.9	40.5	0.0	7.3	10.8	4.2	11/05/2024 13:15	8.5	22.0	7.1	10.7	1.7
11/05/2024 13:30	8.9	40.2	0.0	7.3	10.8	4.6	11/05/2024 13:30	8.6	21.9	7.1	10.7	1.3
11/05/2024 13:45	8.9	39.9	0.0	7.3	10.8	4.2	11/05/2024 13:45	8.6	21.6	7.1	10.7	1.1
11/05/2024 14:00	9.0	39.7	0.0	7.3	10.7	4.5	11/05/2024 14:00	8.6	21.6	7.1	10.7	1.1
11/05/2024 14:15	9.0	39.5	0.0	7.3	10.8	4.2	11/05/2024 14:15	8.6	21.4	7.1	10.7	1.0
11/05/2024 14:30	9.0	39.5	0.0	7.3	10.7	4.7	11/05/2024 14:30	8.7	21.4	7.1	10.7	0.9
11/05/2024 14:45	8.8	26.5	0.0	7.0	10.8	4.0	11/05/2024 14:45	8.7	21.1	7.1	10.7	0.9
11/05/2024 15:00	8.8	25.8	0.0	7.0	10.8	5.3	11/05/2024 15:00	8.7	21.2	7.1	10.7	0.7
11/05/2024 15:15	8.8	25.5	0.0	7.0	10.8	3.9	11/05/2024 15:15	8.7	22.4	7.1	10.6	0.7
11/05/2024 15:30	8.8	26.0	0.0	7.0	10.8	4.2	11/05/2024 15:30	8.7	22.7	7.1	10.6	1.5
11/05/2024 15:45	9.0	40.6	0.0	7.3	10.7	4.2	11/05/2024 15:45	8.7	21.9	7.1	10.6	3.9
11/05/2024 16:00	9.0	41.0	0.0	7.3	10.7	4.6	11/05/2024 16:00	8.7	22.0	7.1	10.6	3.7
11/05/2024 16:15	9.0	41.3	0.0	7.3	10.7	4.9	11/05/2024 16:15	8.7	21.8	7.1	10.6	1.7
11/05/2024 16:30	9.0	39.8	0.0	7.3	10.7	4.5	11/05/2024 16:30	8.6	21.8	7.1	10.7	1.4
11/05/2024 16:45	8.7	26.4	0.0	7.0	10.8	4.2	11/05/2024 16:45	8.6	21.6	7.1	10.7	0.8
11/05/2024 17:00	8.7	26.1	0.0	7.0	10.8	4.1	11/05/2024 17:00	8.6	21.6	7.1	10.7	0.5
11/05/2024 17:15	8.6	26.0	0.0	7.0	10.8	3.7	11/05/2024 17:15	8.5	24.0	7.1	10.7	1.0
11/05/2024 17:30	8.8	42.5	0.0	7.3	10.8	3.9	11/05/2024 17:30	8.5	22.4	7.1	10.7	1.3
11/05/2024 17:45	8.8	43.3	0.0	7.3	10.8	4.1	11/05/2024 17:45	8.5	21.4	7.1	10.7	1.2
11/05/2024 18:00	8.8	43.0	0.0	7.3	10.8	6.0	11/05/2024 18:00	8.4	21.6	7.1	10.7	0.5
11/05/2024 18:15	8.8	43.0	0.0	7.3	10.8	3.9	11/05/2024 18:15	8.4	21.5	7.1	10.7	0.4
11/05/2024 18:30	8.5	26.7	0.0	7.0	10.9	3.8	11/05/2024 18:30	8.4	21.6	7.1	10.7	0.5
11/05/2024 18:45	8.5	26.3	0.0	7.0	10.9	3.8	11/05/2024 18:45	8.4	21.5	7.1	10.7	0.4
11/05/2024 19:00	8.4	26.2	0.0	7.0	10.9	3.8	11/05/2024 19:00	8.3	21.8	7.1	10.7	0.3
11/05/2024 19:15	8.6	41.5	0.0	7.1	10.9	3.6	11/05/2024 19:15	8.3	21.7	7.1	10.7	1.0
11/05/2024 19:30	8.6	43.6	0.0	7.3	10.8	3.7	11/05/2024 19:30	8.3	21.9	7.1	10.7	0.3
11/05/2024 19:45	8.7	43.8	0.0	7.3	10.8	3.6	11/05/2024 19:45	8.3	21.6	7.1	10.7	0.6
11/05/2024 20:00	8.6	43.9	0.0	7.3	10.9	3.7	11/05/2024 20:00	8.3	21.9	7.1	10.8	0.3
11/05/2024 20:15	8.4	28.2	0.0	7.2	10.9	3.6	11/05/2024 20:15	8.3	21.9	7.1	10.8	0.3
11/05/2024 20:30	8.4	26.8	0.0	7.0	10.9	3.9	11/05/2024 20:30	8.3	22.0	7.1	10.7	0.4
11/05/2024 20:45	8.3	26.5	0.0	7.0	10.9	3.6	11/05/2024 20:45	8.3	21.9	7.1	10.8	0.5
11/05/2024 21:00	8.3	26.6	0.0	7.0	10.9	3.8	11/05/2024 21:00	8.3	22.1	7.1	10.8	0.3
11/05/2024 21:15	8.6	44.4	0.0	7.3	10.9	3.6	11/05/2024 21:15	8.2	22.0	7.1	10.8	0.3
11/05/2024 21:30	8.6	44.5	0.0	7.3	10.9	3.7	11/05/2024 21:30	8.2	22.2	7.1	10.8	0.4
11/05/2024 21:45	8.6	44.8	0.0	7.3	10.9	3.5	11/05/2024 21:45	8.2	21.8	7.1	10.8	0.3
11/05/2024 22:00	8.6	44.9	0.0	7.3	10.9	4.1	11/05/2024 22:00	8.2	22.2	7.1	10.8	0.4
11/05/2024 22:15	8.6	44.6	0.0	7.3	10.9	4.1	11/05/2024 22:15	8.2	22.0	7.1	10.8	0.6
11/05/2024 22:30	8.4	33.6	0.0	7.3	10.9	3.8	11/05/2024 22:30	8.2	22.3	7.1	10.8	0.5
11/05/2024 22:45	8.3	27.2	0.0	7.0	10.9	3.6	11/05/2024 22:45	8.2	22.1	7.1	10.8	0.5
11/05/2024 23:00	8.3	26.9	0.0	7.0	11.0	3.7	11/05/2024 23:00	8.2	22.3	7.1	10.8	0.3
11/05/2024 23:15	8.3	26.9	0.0	7.0	10.9	3.5	11/05/2024 23:15	8.2	22.2	7.1	10.8	0.2
11/05/2024 23:30	8.5	44.6	0.0	7.3	10.9	4.0	11/05/2024 23:30	8.2	22.3	7.1	10.8	0.2
11/05/2024 23:45	8.5	45.0	0.0	7.3	10.9	3.7	11/05/2024 23:45	8.2	22.3	7.1	10.8	0.2
11/06/2024 0:00	8.6	45.3	0.0	7.3	10.9	3.5	11/06/2024 0:00	8.2	22.3	7.1	10.8	0.2
11/06/2024 0:15	8.6	45.5	0.0	7.3	10.9	3.4	11/06/2024 0:15	8.2	22.3	7.1	10.8	0.2
11/06/2024 0:30	8.3	27.6	0.0	7.0	11.0	3.8	11/06/2024 0:30	8.2	22.4	7.1	10.8	0.3
11/06/2024 0:45	8.3	27.2	0.0	7.0	11.0	3.6	11/06/2024 0:45	8.2	22.2	7.1	10.8	0.3
11/06/2024 1:00	8.2	27.1	0.0	7.0	11.0	4.0	11/06/2024 1:00	8.2	22.4	7.1	10.8	0.7
11/06/2024 1:15	8.4	44.9	0.0	7.2	10.9	3.6	11/06/2024 1:15	8.2	22.0	7.1	10.8	0.2
11/06/2024 1:30	8.5	45.8	0.0	7.3	10.9	3.6	11/06/2024 1:30	8.2	22.4	7.1	10.8	0.3
11/06/2024 1:45	8.5	46.1	0.0	7.4	10.9	3.7	11/06/2024 1:45	8.1	22.3	7.1	10.8	1.4
11/06/2024 2:00	8.5	46.2	0.0	7.4	10.9	3.7	11/06/2024 2:00	8.1	22.4	7.1	10.8	0.2
11/06/2024 2:15	8.3	30.4	0.0	7.3	10.9	3.6	11/06/2024 2:15	8.1	22.3	7.1	10.8	0.2
11/06/2024 2:30	8.2	27.6	0.0	7.0	11.0	3.6	11/06/2024 2:30	8.1	22.4	7.1	10.8	0.2
11/06/2024 2:45	8.2	27.3	0.0	7.0	11.0	3.6	11/06/2024 2:45	8.1	22.2	7.1	10.8	0.3

11/06/2024 3:00	8.2	27.2	0.0	7.0	11.0	4.0	11/06/2024 3:00	8.1	22.4	7.1	10.8	0.2
11/06/2024 3:15	8.4	46.1	0.0	7.3	10.9	4.0	11/06/2024 3:15	8.1	22.2	7.1	10.8	0.2
11/06/2024 3:30	8.5	46.7	0.0	7.4	10.9	5.0	11/06/2024 3:30	8.1	22.4	7.1	10.8	0.2
11/06/2024 3:45	8.5	46.8	0.0	7.4	10.9	3.7	11/06/2024 3:45	8.1	22.2	7.1	10.8	0.3
11/06/2024 4:00	8.5	46.9	0.0	7.4	10.9	3.7	11/06/2024 4:00	8.1	22.3	7.1	10.8	0.7
11/06/2024 4:15	8.2	28.2	0.0	7.1	11.0	3.6	11/06/2024 4:15	8.1	22.0	7.1	10.8	0.2
11/06/2024 4:30	8.2	27.5	0.0	7.0	11.0	4.4	11/06/2024 4:30	8.1	22.3	7.1	10.8	0.2
11/06/2024 4:45	8.1	27.3	0.0	7.0	11.0	3.6	11/06/2024 4:45	8.1	22.2	7.2	10.8	0.2
11/06/2024 5:00	8.3	43.0	0.0	7.1	11.0	3.8	11/06/2024 5:00	8.1	22.3	7.1	10.8	0.2
11/06/2024 5:15	8.4	47.0	0.0	7.3	10.9	3.4	11/06/2024 5:15	8.1	22.3	7.1	10.8	0.2
11/06/2024 5:30	8.4	47.1	0.0	7.4	10.9	3.8	11/06/2024 5:30	8.1	22.3	7.1	10.8	0.2
11/06/2024 5:45	8.4	47.2	0.0	7.4	10.9	3.4	11/06/2024 5:45	8.1	22.1	7.1	10.8	0.2
11/06/2024 6:00	8.3	31.4	0.0	7.3	10.9	3.8	11/06/2024 6:00	8.1	22.2	7.1	10.8	0.1
11/06/2024 6:15	8.1	27.7	0.0	7.0	11.0	3.5	11/06/2024 6:15	8.0	22.0	7.1	10.8	0.2
11/06/2024 6:30	8.1	27.4	0.0	7.0	11.0	3.7	11/06/2024 6:30	8.0	22.2	7.1	10.8	0.3
11/06/2024 6:45	8.1	27.4	0.0	7.0	11.0	3.4	11/06/2024 6:45	8.0	22.2	7.1	10.9	0.2
11/06/2024 7:00	8.4	47.2	0.0	7.3	10.9	3.5	11/06/2024 7:00	8.0	22.1	7.1	10.8	0.2
11/06/2024 7:15	8.4	47.5	0.0	7.4	10.9	3.3	11/06/2024 7:15	8.0	21.8	7.1	10.8	0.1
11/06/2024 7:30	8.4	47.6	0.0	7.4	10.9	3.5	11/06/2024 7:30	8.0	22.2	7.1	10.8	0.2
11/06/2024 7:45	8.4	47.6	0.0	7.4	10.9	3.4	11/06/2024 7:45	8.0	22.0	7.1	10.8	0.2
11/06/2024 8:00	8.1	28.1	0.0	7.0	11.0	3.6	11/06/2024 8:00	8.0	22.1	7.1	10.9	0.2
11/06/2024 8:15	8.1	27.6	0.0	7.0	11.0	3.5	11/06/2024 8:15	8.0	21.8	7.1	10.8	0.2
11/06/2024 8:30	8.0	27.4	0.0	7.0	11.0	3.9	11/06/2024 8:30	8.0	22.0	7.1	10.9	0.1
11/06/2024 8:45	8.3	46.8	0.0	7.3	10.9	3.7	11/06/2024 8:45	8.0	21.9	7.1	10.9	1.9
11/06/2024 9:00	8.4	47.6	0.0	7.4	10.9	3.9	11/06/2024 9:00	8.0	22.0	7.1	10.9	0.2
11/06/2024 9:15	8.4	47.7	0.0	7.4	10.9	3.5	11/06/2024 9:15	8.0	21.8	7.1	10.9	0.3
11/06/2024 9:30	8.4	47.4	0.0	7.4	10.9	3.8	11/06/2024 9:30	8.0	21.9	7.1	10.9	0.1
11/06/2024 9:45	8.4	38.6	0.0	7.4	10.9	3.5	11/06/2024 9:45	8.1	21.7	7.1	10.9	0.1
11/06/2024 10:00	8.1	27.7	0.0	7.0	11.0	3.7	11/06/2024 10:00	8.1	21.8	7.1	10.9	0.5
11/06/2024 10:15	8.1	27.3	0.0	7.0	11.0	3.4	11/06/2024 10:15	8.1	21.6	7.1	10.9	0.2
11/06/2024 10:30	8.1	27.1	0.0	7.0	11.0	3.7	11/06/2024 10:30	8.1	21.1	7.1	10.9	0.2
11/06/2024 10:45	8.4	47.1	0.0	7.3	10.9	3.3	11/06/2024 10:45	8.1	20.5	7.1	10.9	0.1
11/06/2024 11:00	8.5	47.8	0.0	7.4	10.9	3.6	11/06/2024 11:00	8.1	20.5	7.1	10.9	0.2
11/06/2024 11:15	8.6	47.6	0.0	7.4	10.9	3.3	11/06/2024 11:15	8.2	19.9	7.1	10.9	0.1
11/06/2024 11:30	8.6	47.6	0.0	7.4	10.9	3.4	11/06/2024 11:30	8.2	19.9	7.1	10.8	0.5
11/06/2024 11:45	8.4	27.4	0.0	7.1	10.9	3.3	11/06/2024 11:45	8.2	19.3	7.1	10.9	0.1
11/06/2024 12:00	8.3	26.0	0.0	7.0	10.9	3.4	11/06/2024 12:00	8.3	19.3	7.1	10.8	0.1
11/06/2024 12:01	8.3	26.0	0.0	7.0	10.9	3.4	11/06/2024 12:15	8.3	18.7	7.1	10.8	0.1
11/06/2024 12:15	8.3	25.5	0.0	7.0	10.9	3.3	11/06/2024 12:30	8.3	18.7	7.1	10.8	0.1
11/06/2024 12:30	8.6	45.1	0.0	7.2	10.9	3.5	11/06/2024 12:45	8.3	18.4	7.1	10.8	0.2
11/06/2024 12:45	8.7	46.5	0.0	7.4	10.8	3.3	11/06/2024 13:00	8.4	18.3	7.1	10.8	0.1
11/06/2024 13:00	8.8	46.1	0.0	7.4	10.8	3.5	11/06/2024 13:01	8.4	18.1	7.0	10.8	0.2
11/06/2024 13:15	8.8	45.7	0.0	7.4	10.8	3.4	11/06/2024 13:15	8.4	18.8	7.1	10.8	0.1
11/06/2024 13:30	8.8	45.3	0.0	7.4	10.8	3.4	11/06/2024 13:30	8.4	20.5	7.1	10.8	0.1
11/06/2024 13:45	8.8	46.1	0.0	7.4	10.8	3.2	11/06/2024 13:45	8.5	19.7	7.1	10.8	0.2
11/06/2024 14:00	8.9	46.1	0.0	7.4	10.8	3.5	11/06/2024 14:00	8.5	18.9	7.1	10.8	0.2
11/06/2024 14:15	8.9	45.6	0.0	7.4	10.8	3.3	11/06/2024 14:15	8.5	18.6	7.1	10.7	0.2
11/06/2024 14:30	8.9	45.2	0.0	7.4	10.8	3.6	11/06/2024 14:30	8.5	18.2	7.1	10.7	0.4
11/06/2024 14:45	8.9	45.0	0.0	7.4	10.8	3.3	11/06/2024 14:45	8.5	18.1	7.1	10.7	0.1
11/06/2024 15:00	8.6	25.1	0.0	7.0	10.8	3.4	11/06/2024 15:00	8.6	17.8	7.1	10.7	0.1
11/06/2024 15:15	8.6	24.4	0.0	7.0	10.9	3.2	11/06/2024 15:15	8.6	17.7	7.1	10.7	0.1
11/06/2024 15:30	8.6	24.0	0.0	7.0	10.9	3.3	11/06/2024 15:30	8.6	17.5	7.0	10.7	0.1
11/06/2024 15:45	8.9	43.7	0.0	7.2	10.8	3.2	11/06/2024 15:45	8.6	17.4	7.1	10.7	1.3
11/06/2024 16:00	9.0	44.8	0.0	7.4	10.8	3.2	11/06/2024 16:00	8.6	17.1	7.1	10.7	13.0
11/06/2024 16:15	9.0	45.2	0.0	7.4	10.7	3.2	11/06/2024 16:15	8.6	17.2	7.1	10.7	0.4
11/06/2024 16:30	9.0	45.3	0.0	7.4	10.7	3.2	11/06/2024 16:30	8.6	17.1	7.0	10.7	0.1
11/06/2024 16:45	9.0	45.3	0.0	7.4	10.7	3.2	11/06/2024 16:45	8.6	17.1	7.1	10.7	0.1
11/06/2024 17:00	8.7	24.4	0.0	7.1	10.8	3.2	11/06/2024 17:00	8.6	17.0	7.1	10.7	0.3
11/06/2024 17:15	8.6	23.7	0.0	7.0	10.8	3.2	11/06/2024 17:15	8.6	17.0	7.1	10.7	0.1
11/06/2024 17:30	8.6	23.4	0.0	7.0	10.8	3.2	11/06/2024 17:30	8.6	16.8	7.0	10.7	0.9
11/06/2024 17:45	8.8	43.5	0.0	7.2	10.8	3.2	11/06/2024 17:45	8.6	17.0	7.1	10.7	0.2
11/06/2024 18:00	8.9	45.4	0.0	7.4	10.8	3.2	11/06/2024 18:00	8.6	16.7	7.1	10.7	0.1
11/06/2024 18:15	8.9	45.5	0.0	7.4	10.7	3.2	11/06/2024 18:15	8.6	16.9	7.1	10.7	0.4
11/06/2024 18:30	8.9	45.6	0.0	7.4	10.7	3.2	11/06/2024 18:30	8.6	16.7	7.0	10.7	0.3
11/06/2024 18:45	8.9	45.6	0.0	7.4	10.8	3.3	11/06/2024 18:45	8.6	16.9	7.0	10.7	0.3
11/06/2024 19:00	8.6	24.5	0.0	7.1	10.8	3.2	11/06/2024 19:00	8.6	16.7	7.0	10.7	0.2
11/06/2024 19:15	8.6	23.9	0.0	7.0	10.8	3.2	11/06/2024 19:15	8.6	16.9	7.0	10.7	0.1
11/06/2024 19:30	8.6	23.6	0.0	7.0	10.8	3.3	11/06/2024 19:30	8.6	16.8	7.0	10.7	0.2
11/06/2024 19:45	8.8	44.0	0.0	7.2	10.8	3.2	11/06/2024 19:45	8.6	16.9	7.1	10.7	0.2
11/06/2024 20:00	8.9	45.5	0.0	7.4	10.8	3.2	11/06/2024 20:00	8.5	16.8	7.1	10.7	0.2
11/06/2024 20:15	8.9	45.7	0.0	7.4	10.8	3.2	11/06/2024 20:15	8.6	16.9	7.1	10.7	0.1
11/06/2024 20:30	8.9	45.7	0.0	7.4	10.8	3.2	11/06/2024 20:30	8.6	16.6	7.0	10.7	0.1
11/06/2024 20:45	8.9	45.8	0.0	7.4	10.8	3.2	11/06/2024 20:45	8.6	16.8	7.0	10.7	0.1
11/06/2024 21:00	8.6	24.8	0.0	7.1	10.8	3.2	11/06/2024 21:00	8.5	16.8	7.0	10.7	0.1
11/06/2024 21:15	8.6	23.8	0.0	7.0	10.8	3.2	11/06/2024 21:15	8.5	16.7	7.1	10.7	0.1
11/06/2024 21:30	8.5	23.5	0.0	7.0	10.8	3.2	11/06/2024 21:30	8.5	16.5	7.0	10.7	0.1
11/06/2024 21:45	8.6	34.0	0.0	7.1	10.8	3.2	11/06/2024 21:45	8.5	16.7	7.1	10.7	1.0
11/06/2024 22:00	8.8	45.3	0.0	7.4	10.8	3.2	11/06/2024 22:00	8.5	16.5	7.0	10.7	0.1
11/06/2024 22:15	8.9	45.5	0.0	7.4	10.8	3.2	11/06/2024 22:15	8.5	16.7	7.1	10.7	0.1
11/06/2024 22:30	8.9	45.6	0.0	7.4	10.8	3.1	11/06/2024 22:30	8.5	16.6	7.0	10.7	0.1
11/06/2024 22:45	8.6	25.5	0.0	7.1	10.8	3.2	11/06/2024 22:45	8.5	16.7	7.1	10.7	0.1
11/06/2024 23:00	8.6	23.8	0.0	7.0	10.8	3.1	11/06/2024 23:00	8.5	16.5	7.0	10.7	0.1
11/06/2024 23:15	8.8	40.1	0.0	7.4	10.8	3.2	11/06/2024 23:15	8.5	16.7	7.1	10.7	0.1
11/06/2024 23:30	8.5	23.9	0.0	7.0	10.9	3.2	11/06/2024 23:30	8.5	16.5	7.0	10.7	0.1
11/06/2024 23:45	8.8	48.7	0.0	7.4	10.8	3.2	11/06/2024 23:45	8.5	16.9	7.1	10.7	0.1
11/07/2024 0:00	8.9	49.0	0.0	7.5	10.8	3.2	11/07/2024 0:00	8.5	16.6	7.1	10.7	0.3
11/07/2024 0:15	8.9	47.9	0.0	7.5	10.8	3.1	11/07/2024 0:15	8.5	16.8	7.1	10.7	0.1
11/07/2024 0:30	8.6	25.1	0.0	7.1	10.8	3.2	11/07/2024 0:30	8.5	16.5	7.1	10.7	0.1
11/07/2024 0:45	8.5	23.4	0.0	7.0	10.8	3.1	11/07/2024 0:45	8.5	16.6	7.0	10.7	0.1
11/07/2024 1:00	8.7	45.0	0.0	7.2	10.8	3.2	11/07/2024 1:00	8.5	16.1	7.0	10.7	0.1
11/07/2024 1:15	8.9	47.9	0.0	7.4	10.8	3.2	11/07/2024 1:15	8.5	16.5	7.1	10.7	0.1
11/07/2024 1:30	8.9	48.2	0.0	7.5	10.8	3.1	11/07/2024 1:30	8.5	16.4	7.0	10.7	0.2
11/07/2024 1:45	8.7	31.0	0.0	7.3	10.7	3.1	11/07/2024 1:45	8.5	16.4	7.0	10.7	0.6
11/07/2024 2:00	8.5	24.1	0.0	7.0	10.8	3.2	11/07/2024 2:00	8.5	16.2	7.0	10.7	0.1
11/07/2024 2:15	8.5	23.4	0.0	7.0	10.8	3.2	11/07/2024 2:15	8.5	16.4	7.1	10.7	0.1
11/07/2024 2:30	8.5	23.1	0.0	7.0	10.8	3.2	11/07/2024 2:30	8.5	16.2	7.0	10.7	0.1
11/07/2024 2:45	8.5	22.9	0.0	7.0	10.8	3.2	11/07/2024 2:45	8.5	16.3	7.0	10.7	0.1
11/07/2024 3:00	8.5	24.2	0.0	7.0	10.9	3.2	11/07/2024 3:00	8.5	16.2	7.0	10.7	0.1
11/07/2024 3:15	8.8	48.1	0.0	7.4	10.8	3.2	11/07/2024 3:15	8.5	16.2	7.0	10.7	0.1
11/07/2024 3:30	8.9	48.3	0.0	7.4	10.8	3.1	11/07/2024 3:30	8.5	16.1	7.0	10.7	0.1
11/07/2024 3:45	8.8	31.5	0.0	7.4	10.7	3.2	11/07/2024 3:45	8.5	16.2	7.0	10.7	0.1
11/07/2024 4:00	8.5	23.9	0.0	7.0	10.8	3.2	11/07/2024 4:00	8.5	16.1	7.0	10.7	0.1
11/07/2024 4:15	8.5	23.2	0.0	7.0	10.8	3.2	11/07/2024 4:15	8.5	16.2	7.0	10.7	0.1
11/07/2024 4:30	8.8	47.7	0.0	7.4	10.8	3.2	11/07/2024 4:30	8.5	15.9	7.0	10.7	3.7
11/07/2024 4:45	8.9	48.4	0.0	7.4	10.7	3.1	11/07/2024 4:45	8.5	16.1	7.1	10.7	0.3

11/07/2024 5:00	8.9	48.4	0.0	7.5	10.7	3.2	11/07/2024 5:00	8.5	16.0	7.0	10.7	0.1
11/07/2024 5:15	8.9	48.4	0.0	7.5	10.7	3.2	11/07/2024 5:15	8.5	16.1	7.1	10.7	0.1
11/07/2024 5:30	8.9	48.3	0.0	7.5	10.7	3.2	11/07/2024 5:30	8.5	15.8	7.0	10.7	0.1
11/07/2024 5:45	8.9	48.3	0.0	7.5	10.7	3.1	11/07/2024 5:45	8.5	16.0	7.1	10.7	0.2
11/07/2024 6:00	8.8	33.7	0.0	7.4	10.7	3.1	11/07/2024 6:00	8.5	15.8	7.0	10.7	0.5
11/07/2024 6:15	8.6	24.2	0.0	7.1	10.8	3.2	11/07/2024 6:15	8.5	16.0	7.0	10.7	0.1
11/07/2024 6:30	8.5	23.3	0.0	7.0	10.8	3.2	11/07/2024 6:30	8.5	15.8	7.0	10.7	0.2
11/07/2024 6:45	8.8	46.9	0.0	7.4	10.8	3.2	11/07/2024 6:45	8.5	15.9	7.0	10.7	0.1
11/07/2024 7:00	8.9	48.0	0.0	7.4	10.7	3.1	11/07/2024 7:00	8.5	15.8	7.0	10.7	0.1
11/07/2024 7:15	8.9	48.3	0.0	7.5	10.7	3.2	11/07/2024 7:15	8.5	15.9	7.0	10.7	2.2
11/07/2024 7:30	8.8	40.8	0.0	7.5	10.7	3.1	11/07/2024 7:30	8.5	15.6	7.0	10.7	0.1
11/07/2024 7:45	8.5	24.2	0.0	7.1	10.8	3.2	11/07/2024 7:45	8.5	15.8	7.1	10.6	0.2
11/07/2024 8:00	8.5	23.2	0.0	7.0	10.8	3.2	11/07/2024 8:00	8.5	15.5	7.0	10.7	0.4
11/07/2024 8:15	8.5	22.8	0.0	7.0	10.8	3.2	11/07/2024 8:15	8.5	15.7	7.1	10.7	0.1
11/07/2024 8:30	8.8	47.8	0.0	7.4	10.8	3.2	11/07/2024 8:30	8.5	15.6	7.0	10.7	0.1
11/07/2024 8:45	8.8	48.5	0.0	7.5	10.8	3.2	11/07/2024 8:45	8.5	15.6	7.1	10.7	0.1
11/07/2024 9:00	8.9	48.7	0.0	7.5	10.7	3.1	11/07/2024 9:00	8.5	15.5	7.0	10.7	0.1
11/07/2024 9:15	8.9	46.8	0.0	7.5	10.7	3.1	11/07/2024 9:15	8.5	15.6	7.1	10.7	0.1
11/07/2024 9:30	8.6	24.2	0.0	7.1	10.8	3.2	11/07/2024 9:30	8.5	15.5	7.0	10.7	0.1
11/07/2024 9:45	8.6	23.0	0.0	7.0	10.8	3.2	11/07/2024 9:45	8.5	15.6	7.1	10.7	0.5
11/07/2024 10:00	8.6	22.6	0.0	7.0	10.8	3.2	11/07/2024 10:00	8.6	15.5	7.0	10.7	0.2
11/07/2024 10:15	8.9	47.6	0.0	7.4	10.8	3.1	11/07/2024 10:15	8.6	15.6	7.1	10.7	0.2
11/07/2024 10:30	8.9	48.7	0.0	7.5	10.7	3.1	11/07/2024 10:30	8.6	15.4	7.0	10.7	0.1
11/07/2024 10:45	9.0	48.8	0.0	7.5	10.7	3.2	11/07/2024 10:45	8.6	15.6	7.0	10.7	0.1
11/07/2024 11:00	9.0	48.8	0.0	7.5	10.7	3.2	11/07/2024 11:00	8.6	15.5	7.0	10.7	0.1
11/07/2024 11:15	8.7	24.3	0.0	7.0	10.8	7.1	11/07/2024 11:15	8.7	15.5	7.1	10.6	0.4
11/07/2024 11:30	8.7	22.9	0.0	7.0	10.8	3.3	11/07/2024 11:30	8.7	15.4	7.1	10.7	0.3
11/07/2024 11:45	8.7	22.6	0.0	6.9	10.8	3.2	11/07/2024 11:45	8.7	15.5	7.1	10.7	0.1
11/07/2024 12:00	9.0	46.4	0.0	7.3	10.7	3.3	11/07/2024 12:00	8.7	15.2	7.0	10.6	0.1
11/07/2024 12:15	9.1	49.3	0.0	7.4	10.7	3.1	11/07/2024 12:15	8.8	15.5	7.1	10.6	0.1
11/07/2024 12:30	9.2	49.6	0.0	7.4	10.7	3.1	11/07/2024 12:30	8.8	15.3	7.0	10.6	0.1
11/07/2024 12:45	9.2	49.7	0.0	7.5	10.6	3.1	11/07/2024 12:45	8.8	15.3	7.0	10.6	0.1
11/07/2024 13:00	8.9	26.6	0.0	7.2	10.7	3.1	11/07/2024 13:00	8.8	15.3	7.1	10.6	0.1
11/07/2024 13:15	8.9	23.3	0.0	7.0	10.7	3.2	11/07/2024 13:15	8.8	15.4	7.1	10.6	0.1
11/07/2024 13:30	8.9	22.6	0.0	7.0	10.7	3.1	11/07/2024 13:30	8.9	15.0	7.0	10.6	0.1
11/07/2024 13:45	9.0	38.0	0.0	7.0	10.7	3.2	11/07/2024 13:45	8.9	15.3	7.1	10.6	0.2
11/07/2024 14:00	9.3	49.3	0.0	7.4	10.6	3.1	11/07/2024 14:00	8.9	15.0	7.1	10.6	0.1
11/07/2024 14:15	9.3	49.6	0.0	7.5	10.6	3.1	11/07/2024 14:15	8.9	15.3	7.1	10.6	0.1
11/07/2024 14:30	9.3	49.8	0.0	7.4	10.6	3.2	11/07/2024 14:30	8.9	15.2	7.0	10.6	0.1
11/07/2024 14:45	9.1	28.8	0.0	7.3	10.6	3.2	11/07/2024 14:45	8.9	15.3	7.1	10.6	0.2
11/07/2024 15:00	9.0	23.5	0.0	7.0	10.7	3.2	11/07/2024 15:00	8.9	15.3	7.1	10.6	0.1
11/07/2024 15:15	9.0	22.7	0.0	7.0	10.7	3.2	11/07/2024 15:15	9.0	15.2	7.1	10.6	0.1
11/07/2024 15:30	9.0	22.6	0.0	6.9	10.7	3.2	11/07/2024 15:30	9.0	15.2	7.0	10.5	0.1
11/07/2024 15:45	9.3	48.8	0.0	7.4	10.6	3.2	11/07/2024 15:45	9.0	15.2	7.1	10.5	0.4
11/07/2024 16:00	9.4	49.8	0.0	7.4	10.6	3.1	11/07/2024 16:00	9.0	15.2	7.1	10.5	0.1
11/07/2024 16:15	9.4	49.8	0.0	7.5	10.6	3.1	11/07/2024 16:15	9.0	15.2	7.1	10.6	0.1
11/07/2024 16:30	9.3	41.0	0.0	7.5	10.6	3.1	11/07/2024 16:30	9.0	14.9	7.1	10.6	0.1
11/07/2024 16:45	9.0	24.2	0.0	7.1	10.7	3.5	11/07/2024 16:45	9.0	15.2	7.1	10.5	0.1
11/07/2024 17:00	9.0	22.9	0.0	7.0	10.7	3.2	11/07/2024 17:00	9.0	15.1	7.0	10.5	0.2
11/07/2024 17:15	9.0	22.5	0.0	6.9	10.7	3.2	11/07/2024 17:15	9.0	15.1	7.1	10.5	0.2
11/07/2024 17:30	9.3	47.5	0.0	7.3	10.6	3.2	11/07/2024 17:30	9.0	15.2	7.0	10.5	0.7
11/07/2024 17:45	9.3	49.7	0.0	7.4	10.6	3.1	11/07/2024 17:45	9.0	15.2	7.0	10.5	0.1
11/07/2024 18:00	9.3	49.5	0.0	7.4	10.6	3.2	11/07/2024 18:00	9.0	14.9	7.1	10.5	0.2
11/07/2024 18:15	9.1	28.3	0.0	7.3	10.6	3.4	11/07/2024 18:15	9.0	15.2	7.1	10.5	0.1
11/07/2024 18:30	9.0	23.5	0.0	7.0	10.7	3.2	11/07/2024 18:30	9.0	14.8	7.0	10.5	0.2
11/07/2024 18:45	9.0	22.8	0.0	7.0	10.7	3.2	11/07/2024 18:45	9.0	15.2	7.1	10.5	0.1
11/07/2024 19:00	9.2	47.6	0.0	7.3	10.6	3.2	11/07/2024 19:00	8.9	14.9	7.1	10.5	0.1
11/07/2024 19:15	9.3	50.4	0.0	7.4	10.6	3.2	11/07/2024 19:15	9.0	15.3	7.1	10.5	0.1
11/07/2024 19:30	9.3	50.7	0.0	7.4	10.6	3.2	11/07/2024 19:30	9.0	14.8	7.0	10.5	0.1
11/07/2024 19:45	9.3	39.5	0.0	7.4	10.6	3.2	11/07/2024 19:45	9.0	15.2	7.0	10.5	0.1
11/07/2024 20:00	9.0	24.2	0.0	7.1	10.7	3.4	11/07/2024 20:00	9.0	15.0	7.1	10.5	0.1
11/07/2024 20:15	9.0	23.1	0.0	7.0	10.7	3.9	11/07/2024 20:15	9.0	15.2	7.1	10.5	0.1
11/07/2024 20:30	9.0	22.5	0.0	6.9	10.7	3.2	11/07/2024 20:30	9.0	14.9	7.0	10.5	0.1
11/07/2024 20:45	8.9	22.3	0.0	6.9	10.7	3.2	11/07/2024 20:45	9.0	15.3	7.0	10.5	0.1
11/07/2024 21:00	8.9	22.3	0.0	6.9	10.7	3.2	11/07/2024 21:00	9.0	15.0	7.0	10.5	0.1
11/07/2024 21:15	9.3	49.1	0.0	7.4	10.6	3.3	11/07/2024 21:15	9.0	15.2	7.0	10.5	0.2
11/07/2024 21:30	9.3	50.6	0.0	7.4	10.6	3.1	11/07/2024 21:30	8.9	15.1	7.0	10.5	0.1
11/07/2024 21:45	9.3	50.8	0.0	7.4	10.6	3.3	11/07/2024 21:45	8.9	15.2	7.1	10.5	0.1
11/07/2024 22:00	9.3	50.9	0.0	7.4	10.6	3.1	11/07/2024 22:00	8.9	14.8	7.0	10.5	0.1
11/07/2024 22:15	9.2	38.5	0.0	7.4	10.6	3.1	11/07/2024 22:15	8.9	15.2	7.1	10.5	0.1
11/07/2024 22:30	9.0	24.6	0.0	7.1	10.6	3.2	11/07/2024 22:30	8.9	15.0	7.0	10.5	0.2
11/07/2024 22:45	8.9	23.1	0.0	7.0	10.7	3.2	11/07/2024 22:45	8.9	15.1	7.0	10.5	0.1
11/07/2024 23:00	9.1	42.7	0.0	7.1	10.7	3.6	11/07/2024 23:00	8.9	15.1	7.0	10.5	0.1
11/07/2024 23:15	9.3	50.5	0.0	7.4	10.6	3.1	11/07/2024 23:15	8.9	15.2	7.0	10.6	0.1
11/07/2024 23:30	9.3	50.9	0.0	7.4	10.6	3.1	11/07/2024 23:30	8.9	15.1	7.0	10.5	0.1
11/07/2024 23:45	9.3	51.1	0.0	7.4	10.6	3.2	11/07/2024 23:45	8.9	15.2	7.0	10.5	0.1
11/08/2024 0:00	9.1	30.1	0.0	7.3	10.6	3.2	11/08/2024 0:00	8.9	15.1	7.0	10.5	0.1
11/08/2024 0:15	9.0	23.8	0.0	7.0	10.7	3.2	11/08/2024 0:15	8.9	15.1	7.0	10.5	0.1
11/08/2024 0:30	8.9	22.9	0.0	7.0	10.7	3.1	11/08/2024 0:30	8.9	14.8	7.0	10.5	0.1
11/08/2024 0:45	9.0	31.2	0.0	7.0	10.7	3.3	11/08/2024 0:45	8.9	15.1	7.1	10.5	0.1
11/08/2024 1:00	9.3	50.2	0.0	7.4	10.6	3.1	11/08/2024 1:00	8.9	15.0	7.0	10.5	0.1
11/08/2024 1:15	9.3	51.0	0.0	7.4	10.6	3.1	11/08/2024 1:15	8.9	15.0	7.1	10.5	0.1
11/08/2024 1:30	9.3	51.1	0.0	7.4	10.6	3.2	11/08/2024 1:30	8.9	15.0	7.0	10.5	0.1
11/08/2024 1:45	9.1	33.2	0.0	7.4	10.6	3.1	11/08/2024 1:45	8.9	15.0	7.0	10.5	0.3
11/08/2024 2:00	8.9	24.1	0.0	7.0	10.7	3.2	11/08/2024 2:00	8.9	14.7	7.0	10.5	0.3
11/08/2024 2:15	8.9	22.8	0.0	7.0	10.7	3.2	11/08/2024 2:15	8.9	15.1	7.0	10.5	0.1
11/08/2024 2:30	8.9	22.5	0.0	6.9	10.7	3.3	11/08/2024 2:30	8.9	14.9	7.0	10.5	0.1
11/08/2024 2:45	9.2	49.0	0.0	7.4	10.6	3.2	11/08/2024 2:45	8.9	15.0	7.0	10.5	0.2
11/08/2024 3:00	9.3	50.8	0.0	7.4	10.6	3.1	11/08/2024 3:00	8.9	14.9	7.0	10.5	0.1
11/08/2024 3:15	9.3	51.1	0.0	7.4	10.6	3.1	11/08/2024 3:15	8.9	14.9	7.0	10.5	0.3
11/08/2024 3:30	9.3	50.6	0.0	7.4	10.6	3.1	11/08/2024 3:30	8.9	14.9	7.0	10.5	0.1
11/08/2024 3:45	9.0	26.2	0.0	7.1	10.6	3.2	11/08/2024 3:45	8.9	14.9	7.0	10.5	0.1
11/08/2024 4:00	8.9	23.2	0.0	7.0	10.7	3.2	11/08/2024 4:00	8.9	14.9	7.0	10.5	0.5
11/08/2024 4:15	8.9	22.6	0.0	6.9	10.7	3.3	11/08/2024 4:15	9.0	14.9	7.0	10.5	0.1
11/08/2024 4:30	9.1	45.4	0.0	7.2	10.6	3.3	11/08/2024 4:30	9.0	14.7	7.0	10.5	0.2
11/08/2024 4:45	9.3	50.8	0.0	7.4	10.6	3.2	11/08/2024 4:45	9.0	14.9	7.0	10.5	0.2
11/08/2024 5:00	9.3	50.9	0.0	7.4	10.6	3.1	11/08/2024 5:00	9.0	14.8	7.0	10.5	0.1
11/08/2024 5:15	9.1	31.0	0.0	7.3	10.6	3.2	11/08/2024 5:15	9.0	14.9	7.0	10.5	0.1
11/08/2024 5:30	9.0	23.9	0.0	7.0	10.7	3.2	11/08/2024 5:30	9.0	14.8	7.0	10.5	0.1
11/08/2024 5:45	9.0	22.7	0.0	7.0	10.6	3.2	11/08/2024 5:45	9.0	14.9	7.0	10.5	0.1
11/08/2024 6:00	9.3	49.9	0.0	7.4	10.6	3.2	11/08/2024 6:00	9.0	14.8	7.0	10.5	0.2
11/08/2024 6:15	9.4	51.3	0.0	7.4	10.6	3.2	11/08/2024 6:15	9.0	14.9	7.0	10.5	0.1
11/08/2024 6:30	9.4	51.6	0.0	7.4	10.5	3.2	11/08/2024 6:30	9.0	14.8	7.0	10.5	0.1
11/08/2024 6:45	9.4	51.7	0.0	7.4	10.5	3.2	11/08/2024 6:45	9.1	14.9	7.0	10.5	0.1
11/08/2024 7:00	9.4	51.8	0.0	7.4	10.5	3.2	11/08/2024 7:00	9.1	14.8	7.0	10.5	0.1

11/08/2024 7:15	9.4	51.7	0.0	7.5	10.5	3.1	11/08/2024 7:15	9.1	14.9	7.0	10.5	0.2
11/08/2024 7:30	9.2	27.4	0.0	7.2	10.6	3.2	11/08/2024 7:30	9.1	14.6	7.0	10.5	0.3
11/08/2024 7:45	9.1	23.7	0.0	7.0	10.6	3.2	11/08/2024 7:45	9.1	14.9	7.0	10.4	0.1
11/08/2024 8:00	9.1	22.7	0.0	7.0	10.6	3.2	11/08/2024 8:00	9.1	14.8	7.0	10.4	0.1
11/08/2024 8:15	9.3	43.4	0.0	7.1	10.6	3.2	11/08/2024 8:15	9.1	14.8	7.0	10.4	0.1
11/08/2024 8:30	9.5	51.3	0.0	7.4	10.5	3.1	11/08/2024 8:30	9.1	14.8	7.0	10.4	0.1
11/08/2024 8:45	9.5	51.7	0.0	7.5	10.5	3.2	11/08/2024 8:45	9.2	14.8	7.0	10.5	0.2
11/08/2024 9:00	9.5	51.9	0.0	7.5	10.5	3.2	11/08/2024 9:00	9.2	14.7	7.0	10.4	4.5
11/08/2024 9:15	9.3	31.9	0.0	7.4	10.5	3.3	11/08/2024 9:15	9.2	14.8	7.0	10.4	0.2
11/08/2024 9:30	9.2	24.2	0.0	7.0	10.6	10.8	11/08/2024 9:30	9.2	14.5	7.0	10.5	0.1
11/08/2024 9:45	9.3	39.8	0.0	7.0	10.6	3.2	11/08/2024 9:45	9.2	14.9	7.0	10.4	0.3
11/08/2024 10:00	9.5	51.1	0.0	7.4	10.5	3.2	11/08/2024 10:00	9.2	14.6	7.0	10.4	0.1
11/08/2024 10:15	9.6	51.9	0.0	7.5	10.5	3.1	11/08/2024 10:15	9.2	14.9	7.0	10.4	0.1
11/08/2024 10:30	9.6	52.0	0.0	7.5	10.5	3.2	11/08/2024 10:30	9.3	14.8	7.0	10.4	0.2
11/08/2024 10:45	9.6	52.1	0.0	7.5	10.5	3.2	11/08/2024 10:45	9.3	14.8	7.1	10.5	0.1
11/08/2024 11:00	9.4	31.0	0.0	7.3	10.5	3.2	11/08/2024 11:00	9.3	14.7	7.0	10.4	0.1
11/08/2024 11:15	9.5	44.9	0.0	7.2	10.5	3.3	11/08/2024 11:15	9.3	14.8	7.0	10.4	0.5
11/08/2024 11:30	9.7	51.7	0.0	7.5	10.5	3.1	11/08/2024 11:30	9.3	14.6	7.0	10.4	0.2
11/08/2024 11:45	9.7	52.4	0.0	7.5	10.5	3.2	11/08/2024 11:45	9.3	14.8	7.1	10.4	0.9
11/08/2024 12:00	9.7	52.8	0.0	7.5	10.5	3.2	11/08/2024 12:00	9.3	14.7	7.0	10.4	0.1
11/08/2024 12:15	9.8	53.2	0.0	7.5	10.5	3.2	11/08/2024 12:15	9.4	14.9	7.0	10.4	0.2
11/08/2024 12:30	9.7	41.3	0.0	7.5	10.5	3.2	11/08/2024 12:30	9.4	14.8	7.0	10.4	0.1
11/08/2024 12:45	9.5	25.6	0.0	7.2	10.5	3.2	11/08/2024 12:45	9.4	14.8	7.0	10.4	0.1
11/08/2024 13:00	9.4	23.5	0.0	7.0	10.5	3.3	11/08/2024 13:00	9.4	14.6	7.0	10.4	0.9
11/08/2024 13:15	9.4	22.6	0.0	7.0	10.5	3.2	11/08/2024 13:15	9.4	14.8	7.0	10.4	0.3
11/08/2024 13:30	9.4	22.3	0.0	7.0	10.5	3.2	11/08/2024 13:30	9.4	14.5	7.0	10.4	0.1
11/08/2024 13:45	9.5	22.1	0.0	7.0	10.5	3.2	11/08/2024 13:45	9.5	14.8	7.0	10.4	0.1
11/08/2024 14:00	9.5	21.9	0.0	7.0	10.5	3.2	11/08/2024 14:00	9.5	14.5	7.0	10.4	0.1
11/08/2024 14:15	9.5	21.8	0.0	6.9	10.5	3.2	11/08/2024 14:15	9.5	14.8	7.1	10.4	0.1
11/08/2024 14:30	9.5	21.7	0.0	6.9	10.5	3.2	11/08/2024 14:30	9.5	14.7	7.1	10.4	0.2
11/08/2024 14:45	9.7	38.9	0.0	7.2	10.5	3.3	11/08/2024 14:45	9.5	14.8	7.1	10.4	0.1
11/08/2024 15:00	9.8	49.9	0.0	7.5	10.4	3.1	11/08/2024 15:00	9.5	14.5	7.0	10.4	0.1
11/08/2024 15:15	9.9	51.7	0.0	7.5	10.4	3.2	11/08/2024 15:15	9.5	14.9	7.0	10.3	0.1
11/08/2024 15:30	9.9	52.3	0.0	7.5	10.4	3.2	11/08/2024 15:30	9.5	14.7	7.0	10.3	0.1
11/08/2024 15:45	9.9	52.6	0.0	7.5	10.4	3.2	11/08/2024 15:45	9.5	14.9	7.1	10.3	0.1
11/08/2024 16:00	9.9	52.7	0.0	7.5	10.4	3.3	11/08/2024 16:00	9.5	14.8	7.0	10.3	0.2
11/08/2024 16:15	9.9	52.6	0.0	7.5	10.4	3.2	11/08/2024 16:15	9.5	14.9	7.0	10.3	0.1
11/08/2024 16:30	9.7	32.2	0.0	7.4	10.4	3.2	11/08/2024 16:30	9.5	14.5	7.0	10.3	0.1
11/08/2024 16:45	9.5	25.4	0.0	7.2	10.4	3.2	11/08/2024 16:45	9.5	14.9	7.0	10.3	0.1
11/08/2024 17:00	9.5	23.4	0.0	7.0	10.5	3.2	11/08/2024 17:00	9.5	14.5	7.1	10.3	0.1
11/08/2024 17:15	9.5	22.6	0.0	7.0	10.5	3.2	11/08/2024 17:15	9.5	14.9	7.1	10.3	0.1
11/08/2024 17:30	9.5	22.3	0.0	7.0	10.5	3.2	11/08/2024 17:30	9.5	14.8	7.0	10.3	0.2
11/08/2024 17:45	9.5	22.1	0.0	7.0	10.5	3.3	11/08/2024 17:45	9.5	14.8	7.0	10.4	0.2
11/08/2024 18:00	9.7	46.4	0.0	7.2	10.5	3.4	11/08/2024 18:00	9.5	14.7	7.0	10.3	0.2
11/08/2024 18:15	9.8	51.0	0.0	7.4	10.4	3.2	11/08/2024 18:15	9.5	22.0	7.1	10.4	0.8
11/08/2024 18:30	9.9	50.5	0.0	7.4	10.4	3.2	11/08/2024 18:30	9.5	29.9	7.1	10.3	0.5
11/08/2024 18:45	9.9	55.1	0.0	7.4	10.4	3.4	11/08/2024 18:45	9.5	30.3	7.2	10.4	0.5
11/08/2024 19:00	9.9	58.5	0.0	7.5	10.4	3.4	11/08/2024 19:00	9.5	31.6	7.2	10.3	0.7
11/08/2024 19:15	9.9	59.8	0.0	7.5	10.4	3.6	11/08/2024 19:15	9.4	30.0	7.2	10.4	0.9
11/08/2024 19:30	9.9	60.6	0.0	7.5	10.4	3.6	11/08/2024 19:30	9.4	29.8	7.1	10.3	0.4
11/08/2024 19:45	9.6	41.3	0.0	7.4	10.4	3.7	11/08/2024 19:45	9.4	32.4	7.2	10.3	0.6
11/08/2024 20:00	9.5	37.3	0.0	7.1	10.5	3.8	11/08/2024 20:00	9.4	38.2	7.2	10.3	2.4
11/08/2024 20:15	9.5	39.1	0.0	7.0	10.5	4.0	11/08/2024 20:15	9.5	44.0	7.3	10.3	4.4
11/08/2024 20:30	9.5	44.1	0.0	7.1	10.5	4.9	11/08/2024 20:30	9.5	49.5	7.3	10.4	9.1
11/08/2024 20:45	9.8	65.9	0.0	7.4	10.4	10.6	11/08/2024 20:45	9.5	53.6	7.4	10.4	17.2
11/08/2024 21:00	9.8	69.2	0.0	7.4	10.4	17.3	11/08/2024 21:00	9.5	54.6	7.4	10.3	23.8
11/08/2024 21:15	9.7	70.0	0.0	7.4	10.4	16.9	11/08/2024 21:15	9.5	59.2	7.4	10.4	22.7
11/08/2024 21:30	9.7	71.9	0.0	7.4	10.4	19.6	11/08/2024 21:30	9.5	68.3	7.5	10.3	21.8
11/08/2024 21:45	9.5	70.0	0.0	7.2	10.5	18.5	11/08/2024 21:45	9.4	73.2	7.5	10.4	13.1
11/08/2024 22:00	9.5	75.9	0.0	7.2	10.5	25.4	11/08/2024 22:00	9.4	74.2	7.5	10.4	9.7
11/08/2024 22:15	9.4	78.2	0.0	7.2	10.5	14.2	11/08/2024 22:15	9.4	74.0	7.5	10.4	8.4
11/08/2024 22:30	9.4	79.7	0.0	7.3	10.5	22.5	11/08/2024 22:30	9.4	70.4	7.5	10.4	8.4
11/08/2024 22:45	9.6	86.2	0.0	7.4	10.5	10.7	11/08/2024 22:45	9.4	68.4	7.5	10.4	6.6
11/08/2024 23:00	9.7	83.8	0.0	7.5	10.5	9.7	11/08/2024 23:00	9.4	64.3	7.5	10.4	9.4
11/08/2024 23:15	9.7	81.5	0.0	7.5	10.4	8.9	11/08/2024 23:15	9.4	63.2	7.5	10.4	4.0
11/08/2024 23:30	9.7	79.5	0.0	7.5	10.4	8.4	11/08/2024 23:30	9.4	58.9	7.4	10.4	3.9
11/08/2024 23:45	9.7	77.5	0.0	7.4	10.4	6.5	11/08/2024 23:45	9.4	57.9	7.4	10.4	2.3
11/09/2024 0:00	9.7	75.4	0.0	7.4	10.4	5.3	11/09/2024 0:00	9.4	54.5	7.4	10.4	1.7
11/09/2024 0:15	9.7	73.7	0.0	7.4	10.4	5.0	11/09/2024 0:15	9.4	53.7	7.4	10.4	1.2
11/09/2024 0:30	9.7	72.1	0.0	7.4	10.4	4.4	11/09/2024 0:30	9.4	51.6	7.4	10.4	0.5
11/09/2024 0:45	9.7	70.6	0.0	7.4	10.4	4.1	11/09/2024 0:45	9.4	51.5	7.4	10.4	1.2
11/09/2024 1:00	9.5	57.0	0.0	7.2	10.5	4.3	11/09/2024 1:00	9.4	48.8	7.4	10.4	0.4
11/09/2024 1:15	9.4	55.3	0.0	7.1	10.5	4.0	11/09/2024 1:15	9.4	48.5	7.4	10.4	0.4
11/09/2024 1:30	9.6	67.1	0.0	7.4	10.5	5.1	11/09/2024 1:30	9.4	47.0	7.4	10.4	0.3
11/09/2024 1:45	9.7	67.0	0.0	7.4	10.4	4.0	11/09/2024 1:45	9.4	46.4	7.3	10.3	0.5
11/09/2024 2:00	9.7	65.9	0.0	7.4	10.4	3.6	11/09/2024 2:00	9.4	44.5	7.3	10.3	0.3
11/09/2024 2:15	9.7	64.7	0.0	7.4	10.4	3.6	11/09/2024 2:15	9.4	45.5	7.3	10.4	0.3
11/09/2024 2:30	9.5	51.3	0.0	7.2	10.5	4.2	11/09/2024 2:30	9.4	47.5	7.3	10.4	0.8
11/09/2024 2:45	9.4	51.8	0.0	7.1	10.5	3.7	11/09/2024 2:45	9.4	47.4	7.3	10.4	0.3
11/09/2024 3:00	9.6	65.2	0.0	7.4	10.4	3.6	11/09/2024 3:00	9.4	46.3	7.3	10.4	0.2
11/09/2024 3:15	9.6	65.3	0.0	7.4	10.4	4.0	11/09/2024 3:15	9.4	47.3	7.4	10.4	0.3
11/09/2024 3:30	9.6	65.0	0.0	7.4	10.5	4.1	11/09/2024 3:30	9.4	47.5	7.4	10.4	0.4
11/09/2024 3:45	9.6	65.7	0.0	7.4	10.4	3.7	11/09/2024 3:45	9.4	50.0	7.3	10.4	0.4
11/09/2024 4:00	9.4	53.8	0.0	7.1	10.5	7.3	11/09/2024 4:00	9.4	49.5	7.4	10.4	0.3
11/09/2024 4:15	9.4	54.5	0.0	7.1	10.5	3.7	11/09/2024 4:15	9.4	50.4	7.4	10.4	0.3
11/09/2024 4:30	9.6	67.1	0.0	7.4	10.4	3.8	11/09/2024 4:30	9.3	49.0	7.3	10.4	0.4
11/09/2024 4:45	9.6	66.8	0.0	7.4	10.4	4.8	11/09/2024 4:45	9.3	49.2	7.4	10.3	0.7
11/09/2024 5:00	9.4	54.6	0.0	7.2	10.5	3.7	11/09/2024 5:00	9.3	48.0	7.4	10.4	0.2
11/09/2024 5:15	9.4	52.7	0.0	7.1	10.5	4.1	11/09/2024 5:15	9.3	47.5	7.4	10.4	0.2
11/09/2024 5:30	9.6	65.0	0.0	7.4	10.5	3.9	11/09/2024 5:30	9.3	46.6	7.4	10.4	0.5
11/09/2024 5:45	9.4	51.8	0.0	7.1	10.5	3.6	11/09/2024 5:45	9.3	45.8	7.3	10.4	0.2
11/09/2024 6:00	9.4	50.5	0.0	7.1	10.5	3.7	11/09/2024 6:00	9.3	43.9	7.3	10.4	1.3
11/09/2024 6:15	9.5	62.7	0.0	7.3	10.5	3.7	11/09/2024 6:15	9.3	44.3	7.3	10.4	0.7
11/09/2024 6:30	9.6	61.4	0.0	7.4	10.5	3.6	11/09/2024 6:30	9.3	43.8	7.3	10.4	0.2
11/09/2024 6:45	9.4	48.9	0.0	7.1	10.5	3.7	11/09/2024 6:45	9.3	44.1	7.3	10.4	1.6
11/09/2024 7:00	9.4	48.5	0.0	7.1	10.5	3.8	11/09/2024 7:00	9.3	43.2	7.3	10.4	0.2
11/09/2024 7:15	9.5	62.0	0.0	7.4	10.5	3.5	11/09/2024 7:15	9.3	43.5	7.3	10.4	1.0
11/09/2024 7:30	9.6	62.4	0.0	7.4	10.5	3.7	11/09/2024 7:30	9.3	42.4	7.3	10.4	0.2
11/09/2024 7:45	9.6	62.1	0.0	7.4	10.5	3.6	11/09/2024 7:45	9.3	43.3	7.3	10.4	0.2
11/09/2024 8:00	9.4	52.7	0.0	7.3	10.5	3.7	11/09/2024 8:00	9.3	42.4	7.3	10.4	0.6
11/09/2024 8:15	9.5	59.9	0.0	7.4	10.5	3.5	11/09/2024 8:15	9.3	42.2	7.3	10.4	0.2
11/09/2024 8:30	9.4	48.0	0.0	7.1	10.5	3.5	11/09/2024 8:30	9.3	41.1	7.3	10.4	0.2
11/09/2024 8:45	9.3	46.3	0.0	7.1	10.5	3.6	11/09/2024 8:45	9.3	41.4	7.3	10.4	0.2
11/09/2024 9:00	9.3	45.8	0.0	7.0	10.5	3.6	11/09/2024 9:00	9.3	40.0	7.3	10.3	0.2
11/09/2024 9:15	9.3	45.2	0.0	7.0	10.5	3.6	11/09/2024 9:15	9.3	40.7	7.3	10.4	0.2

11/09/2024 9:30	9.3	44.6	0.0	7.0	10.5	3.9	11/09/2024 9:30	9.3	40.6	7.3	10.3	0.2
11/09/2024 9:45	9.3	44.6	0.0	7.0	10.5	3.6	11/09/2024 9:45	9.3	45.0	7.3	10.4	0.2
11/09/2024 10:00	9.3	47.1	0.0	7.1	10.5	3.7	11/09/2024 10:00	9.3	45.9	7.3	10.4	0.7
11/09/2024 10:15	9.3	49.0	0.0	7.1	10.5	4.1	11/09/2024 10:15	9.3	47.9	7.3	10.4	0.2
11/09/2024 10:30	9.4	55.6	0.0	7.1	10.5	3.9	11/09/2024 10:30	9.4	46.8	7.3	10.4	0.3
11/09/2024 10:45	9.5	64.2	0.0	7.4	10.5	3.6	11/09/2024 10:45	9.4	47.2	7.3	10.4	3.5
11/09/2024 11:00	9.6	63.7	0.0	7.4	10.5	3.8	11/09/2024 11:00	9.4	48.2	7.4	10.4	5.3
11/09/2024 11:15	9.6	64.7	0.0	7.4	10.5	3.8	11/09/2024 11:15	9.4	49.0	7.4	10.4	0.5
11/09/2024 11:30	9.6	64.9	0.0	7.4	10.5	4.3	11/09/2024 11:30	9.4	46.9	7.3	10.4	0.4
11/09/2024 11:45	9.6	64.2	0.0	7.4	10.5	5.1	11/09/2024 11:45	9.4	47.4	7.3	10.4	1.1
11/09/2024 12:00	9.6	63.6	0.0	7.4	10.4	4.0	11/09/2024 12:00	9.4	45.8	7.3	10.4	0.3
11/09/2024 12:15	9.6	63.0	0.0	7.4	10.4	4.0	11/09/2024 12:15	9.4	45.2	7.3	10.3	0.3
11/09/2024 12:30	9.7	62.2	0.0	7.4	10.4	4.6	11/09/2024 12:30	9.4	43.0	7.3	10.4	4.9
11/09/2024 12:45	9.7	61.2	0.0	7.4	10.4	7.8	11/09/2024 12:45	9.4	42.8	7.3	10.3	0.3
11/09/2024 13:00	9.7	60.3	0.0	7.4	10.4	4.3	11/09/2024 13:00	9.4	41.4	7.3	10.3	0.5
11/09/2024 13:15	9.7	59.4	0.0	7.4	10.4	3.7	11/09/2024 13:15	9.5	40.7	7.3	10.3	0.3
11/09/2024 13:30	9.5	45.5	0.0	7.1	10.5	3.7	11/09/2024 13:30	9.5	39.6	7.3	10.3	0.2
11/09/2024 13:45	9.5	44.1	0.0	7.1	10.5	5.0	11/09/2024 13:45	9.5	38.9	7.2	10.3	0.3
11/09/2024 14:00	9.5	43.3	0.0	7.1	10.5	4.2	11/09/2024 14:00	9.5	38.0	7.3	10.3	2.2
11/09/2024 14:15	9.5	42.5	0.0	7.1	10.5	3.5	11/09/2024 14:15	9.5	38.4	7.3	10.3	0.2
11/09/2024 14:30	9.5	42.3	0.0	7.1	10.5	3.6	11/09/2024 14:30	9.5	36.7	7.3	10.4	0.3
11/09/2024 14:45	9.7	55.9	0.0	7.3	10.4	3.4	11/09/2024 14:45	9.5	37.1	7.3	10.3	0.3
11/09/2024 15:00	9.7	54.7	0.0	7.3	10.4	3.4	11/09/2024 15:00	9.5	36.0	7.2	10.3	0.3
11/09/2024 15:15	9.6	51.2	0.0	7.3	10.4	3.8	11/09/2024 15:15	9.5	35.9	7.2	10.3	0.6
11/09/2024 15:30	9.7	55.3	0.0	7.3	10.4	3.4	11/09/2024 15:30	9.5	35.1	7.2	10.3	0.3
11/09/2024 15:45	9.7	54.9	0.0	7.3	10.4	3.4	11/09/2024 15:45	9.5	34.9	7.2	10.3	0.2
11/09/2024 16:00	9.7	54.5	0.0	7.3	10.4	3.4	11/09/2024 16:00	9.5	33.9	7.2	10.3	0.2
11/09/2024 16:15	9.7	54.3	0.0	7.3	10.4	3.3	11/09/2024 16:15	9.5	34.6	7.2	10.3	0.4
11/09/2024 16:30	9.6	39.9	0.0	7.1	10.4	3.3	11/09/2024 16:30	9.5	33.9	7.2	10.3	0.2
11/09/2024 16:45	9.5	38.8	0.0	7.0	10.5	3.4	11/09/2024 16:45	9.5	33.6	7.2	10.3	0.7
11/09/2024 17:00	9.5	38.2	0.0	7.0	10.5	3.4	11/09/2024 17:00	9.5	32.9	7.2	10.3	0.2
11/09/2024 17:15	9.5	37.7	0.0	7.0	10.5	3.3	11/09/2024 17:15	9.5	32.7	7.2	10.3	0.2
11/09/2024 17:30	9.5	37.1	0.0	7.0	10.5	3.3	11/09/2024 17:30	9.5	31.7	7.2	10.3	0.4
11/09/2024 17:45	9.6	50.6	0.0	7.2	10.5	3.5	11/09/2024 17:45	9.5	32.0	7.2	10.3	0.1
11/09/2024 18:00	9.7	52.7	0.0	7.3	10.4	3.4	11/09/2024 18:00	9.5	31.0	7.2	10.3	0.3
11/09/2024 18:15	9.7	52.5	0.0	7.3	10.4	3.3	11/09/2024 18:15	9.5	31.5	7.2	10.3	0.2
11/09/2024 18:30	9.7	52.3	0.0	7.3	10.4	3.4	11/09/2024 18:30	9.5	30.8	7.2	10.3	0.1
11/09/2024 18:45	9.7	52.2	0.0	7.3	10.4	3.3	11/09/2024 18:45	9.5	30.9	7.1	10.3	0.3
11/09/2024 19:00	9.5	36.5	0.0	7.1	10.4	3.4	11/09/2024 19:00	9.5	30.4	7.2	10.3	0.2
11/09/2024 19:15	9.5	35.6	0.0	7.0	10.5	3.4	11/09/2024 19:15	9.5	30.3	7.2	10.3	0.4
11/09/2024 19:30	9.6	47.8	0.0	7.1	10.5	4.3	11/09/2024 19:30	9.5	29.4	7.1	10.3	0.8
11/09/2024 19:45	9.7	51.6	0.0	7.3	10.4	3.4	11/09/2024 19:45	9.4	29.9	7.1	10.3	0.1
11/09/2024 20:00	9.7	51.5	0.0	7.3	10.4	3.3	11/09/2024 20:00	9.4	29.2	7.2	10.3	0.2
11/09/2024 20:15	9.7	51.4	0.0	7.3	10.4	3.8	11/09/2024 20:15	9.4	29.4	7.1	10.3	0.2
11/09/2024 20:30	9.7	51.2	0.0	7.3	10.4	3.3	11/09/2024 20:30	9.4	28.9	7.1	10.3	0.3
11/09/2024 20:45	9.5	34.9	0.0	7.1	10.5	3.4	11/09/2024 20:45	9.4	28.9	7.1	10.3	0.2
11/09/2024 21:00	9.5	34.0	0.0	7.0	10.5	3.4	11/09/2024 21:00	9.4	28.2	7.1	10.3	0.4
11/09/2024 21:15	9.4	33.5	0.0	7.0	10.5	3.3	11/09/2024 21:15	9.4	28.4	7.2	10.3	0.1
11/09/2024 21:30	9.4	33.1	0.0	7.0	10.5	3.4	11/09/2024 21:30	9.4	27.9	7.1	10.3	1.2
11/09/2024 21:45	9.4	33.3	0.0	7.0	10.5	3.3	11/09/2024 21:45	9.4	28.0	7.1	10.4	0.2
11/09/2024 22:00	9.4	34.1	0.0	7.1	10.5	3.3	11/09/2024 22:00	9.4	27.5	7.1	10.3	0.2
11/09/2024 22:15	9.4	32.9	0.0	7.0	10.5	3.4	11/09/2024 22:15	9.3	27.5	7.1	10.3	0.2
11/09/2024 22:30	9.6	50.3	0.0	7.2	10.5	3.8	11/09/2024 22:30	9.4	27.1	7.1	10.3	0.2
11/09/2024 22:45	9.6	52.4	0.0	7.4	10.4	3.9	11/09/2024 22:45	9.4	27.1	7.1	10.3	0.2
11/09/2024 23:00	9.6	52.4	0.0	7.4	10.5	3.3	11/09/2024 23:00	9.4	26.4	7.1	10.4	0.2
11/09/2024 23:15	9.6	52.3	0.0	7.4	10.4	3.3	11/09/2024 23:15	9.3	26.7	7.1	10.4	0.2
11/09/2024 23:30	9.5	36.3	0.0	7.3	10.5	3.3	11/09/2024 23:30	9.3	25.8	7.1	10.4	0.3
11/09/2024 23:45	9.4	32.4	0.0	7.0	10.5	3.3	11/09/2024 23:45	9.3	26.3	7.1	10.4	0.1
11/10/2024 0:00	9.6	51.5	0.0	7.3	10.5	3.3	11/10/2024 0:00	9.3	25.7	7.1	10.3	0.2
11/10/2024 0:15	9.6	52.0	0.0	7.4	10.5	3.3	11/10/2024 0:15	9.3	26.0	7.1	10.4	0.3
11/10/2024 0:30	9.6	52.0	0.0	7.4	10.5	3.3	11/10/2024 0:30	9.3	25.5	7.1	10.4	1.6
11/10/2024 0:45	9.6	51.9	0.0	7.4	10.5	3.3	11/10/2024 0:45	9.3	25.5	7.1	10.4	0.7
11/10/2024 1:00	9.6	51.8	0.0	7.4	10.5	3.3	11/10/2024 1:00	9.3	25.2	7.1	10.4	0.7
11/10/2024 1:15	9.5	42.0	0.0	7.3	10.5	3.3	11/10/2024 1:15	9.2	25.3	7.1	10.4	0.1
11/10/2024 1:30	9.3	31.7	0.0	7.0	10.5	3.3	11/10/2024 1:30	9.2	24.9	7.1	10.4	0.3
11/10/2024 1:45	9.3	30.9	0.0	7.0	10.5	3.4	11/10/2024 1:45	9.2	25.0	7.1	10.4	0.1
11/10/2024 2:00	9.3	30.7	0.0	7.0	10.6	3.3	11/10/2024 2:00	9.2	24.3	7.1	10.4	1.4
11/10/2024 2:15	9.3	30.4	0.0	7.0	10.5	3.4	11/10/2024 2:15	9.2	24.7	7.1	10.4	0.3
11/10/2024 2:30	9.3	44.5	0.0	7.1	10.5	3.7	11/10/2024 2:30	9.2	24.1	7.1	10.4	0.2
11/10/2024 2:45	9.5	51.3	0.0	7.4	10.5	3.3	11/10/2024 2:45	9.2	24.5	7.1	10.4	0.1
11/10/2024 3:00	9.3	32.3	0.0	7.1	10.5	3.3	11/10/2024 3:00	9.2	23.9	7.1	10.4	0.2
11/10/2024 3:15	9.2	30.3	0.0	7.0	10.5	3.4	11/10/2024 3:15	9.1	24.2	7.1	10.4	0.9
11/10/2024 3:30	9.2	29.9	0.0	7.0	10.6	3.3	11/10/2024 3:30	9.1	23.7	7.1	10.4	0.3
11/10/2024 3:45	9.2	29.7	0.0	6.9	10.6	3.4	11/10/2024 3:45	9.1	23.9	7.1	10.4	0.7
11/10/2024 4:00	9.2	35.5	0.0	7.0	10.6	5.9	11/10/2024 4:00	9.1	23.7	7.1	10.4	0.3
11/10/2024 4:15	9.4	51.3	0.0	7.3	10.5	3.3	11/10/2024 4:15	9.1	23.6	7.1	10.4	0.2
11/10/2024 4:30	9.4	51.4	0.0	7.4	10.5	3.3	11/10/2024 4:30	9.1	23.4	7.1	10.4	0.2
11/10/2024 4:45	9.4	51.4	0.0	7.4	10.5	3.3	11/10/2024 4:45	9.1	23.5	7.1	10.4	0.2
11/10/2024 5:00	9.4	45.5	0.0	7.4	10.5	3.4	11/10/2024 5:00	9.1	22.9	7.1	10.4	2.8
11/10/2024 5:15	9.2	30.7	0.0	7.0	10.6	3.4	11/10/2024 5:15	9.1	23.3	7.1	10.4	0.1
11/10/2024 5:30	9.3	45.2	0.0	7.1	10.6	3.3	11/10/2024 5:30	9.1	22.6	7.1	10.4	0.3
11/10/2024 5:45	9.3	45.2	0.0	7.3	10.5	3.3	11/10/2024 5:45	9.1	23.2	7.1	10.4	0.8
11/10/2024 6:00	9.4	50.8	0.0	7.4	10.5	3.3	11/10/2024 6:00	9.0	22.5	7.0	10.4	0.1
11/10/2024 6:15	9.4	50.5	0.0	7.4	10.5	3.3	11/10/2024 6:15	9.0	22.8	7.1	10.4	0.1
11/10/2024 6:30	9.4	50.2	0.0	7.4	10.5	3.4	11/10/2024 6:30	9.0	22.5	7.1	10.4	0.2
11/10/2024 6:45	9.4	50.2	0.0	7.4	10.5	3.4	11/10/2024 6:45	9.0	22.8	7.1	10.4	0.1
11/10/2024 7:00	9.2	32.5	0.0	7.1	10.5	3.5	11/10/2024 7:00	9.0	22.2	7.1	10.4	0.1
11/10/2024 7:15	9.1	29.4	0.0	7.0	10.6	3.4	11/10/2024 7:15	9.0	22.5	7.1	10.4	0.2
11/10/2024 7:30	9.0	28.8	0.0	7.0	10.6	3.4	11/10/2024 7:30	9.0	21.9	7.0	10.4	0.2
11/10/2024 7:45	9.3	50.1	0.0	7.3	10.5	3.4	11/10/2024 7:45	9.0	22.4	7.1	10.4	0.2
11/10/2024 8:00	9.3	50.4	0.0	7.4	10.5	3.4	11/10/2024 8:00	9.0	21.8	7.1	10.4	0.1
11/10/2024 8:15	9.3	50.3	0.0	7.4	10.5	3.3	11/10/2024 8:15	9.0	22.1	7.1	10.4	0.1
11/10/2024 8:30	9.1	33.2	0.0	7.2	10.5	3.6	11/10/2024 8:30	9.0	21.6	7.0	10.5	0.7
11/10/2024 8:45	9.0	29.1	0.0	7.0	10.6	3.3	11/10/2024 8:45	9.0	22.0	7.1	10.5	0.4
11/10/2024 9:00	9.0	28.4	0.0	7.0	10.6	3.3	11/10/2024 9:00	9.0	21.7	7.1	10.5	0.2
11/10/2024 9:15	9.0	28.1	0.0	6.9	10.6	3.2	11/10/2024 9:15	9.0	21.8	7.0	10.5	4.2
11/10/2024 9:30	9.3	49.7	0.0	7.3	10.5	3.3	11/10/2024 9:30	9.0	21.6	7.1	10.4	0.1
11/10/2024 9:45	9.3	50.5	0.0	7.4	10.5	3.4	11/10/2024 9:45	9.0	21.6	7.1	10.4	0.4
11/10/2024 10:00	9.3	50.4	0.0	7.4	10.5	3.6	11/10/2024 10:00	9.0	21.5	7.0	10.4	0.2
11/10/2024 10:15	9.4	50.2	0.0	7.4	10.5	3.5	11/10/2024 10:15	9.0	21.5	7.1	10.5	0.1
11/10/2024 10:30	9.4	50.1	0.0	7.4	10.5	3.6	11/10/2024 10:30	9.0	20.9	7.0	10.5	0.2
11/10/2024 10:45	9.4	47.8	0.0	7.4	10.5	3.4	11/10/2024 10:45	9.0	21.4	7.1	10.4	0.1
11/10/2024 11:00	9.2	29.7	0.0	7.0	10.5	3.4	11/10/2024 11:00	9.1	20.9	7.1	10.5	0.1
11/10/2024 11:15	9.1	28.0	0.0	7.0	10.6	3.5	11/10/2024 11:15	9.1	21.7	7.1	10.4	0.4
11/10/2024 11:30	9.1	27.8	0.0	7.0	10.5	3.3	11/10/2024 11:30	9.1	21.2	7.1	10.4	0.2

11/10/2024 11:45	9.1	27.7	0.0	7.0	10.6	4.4	11/10/2024 11:45	9.1	21.6	7.1	10.4	0.1
11/10/2024 12:00	9.1	27.6	0.0	6.9	10.5	3.3	11/10/2024 12:00	9.1	20.8	7.1	10.4	0.2
11/10/2024 12:15	9.1	27.4	0.0	6.9	10.6	3.4	11/10/2024 12:15	9.1	21.6	7.1	10.4	0.8
11/10/2024 12:30	9.1	27.2	0.0	6.9	10.5	3.3	11/10/2024 12:30	9.1	22.0	7.1	10.4	0.2
11/10/2024 12:45	9.1	27.4	0.0	6.9	10.6	3.4	11/10/2024 12:45	9.1	23.2	7.1	10.4	0.6
11/10/2024 13:00	9.2	27.8	0.0	6.9	10.5	3.4	11/10/2024 13:00	9.1	24.4	7.1	10.4	0.1
11/10/2024 13:15	9.2	28.5	0.0	6.9	10.5	3.3	11/10/2024 13:15	9.1	24.8	7.1	10.4	0.2
11/10/2024 13:30	9.2	29.5	0.0	6.9	10.5	3.3	11/10/2024 13:30	9.2	23.9	7.1	10.4	0.2
11/10/2024 13:45	9.2	29.5	0.0	6.9	10.5	3.3	11/10/2024 13:45	9.2	23.9	7.1	10.4	0.1
11/10/2024 14:00	9.2	29.2	0.0	6.9	10.5	3.3	11/10/2024 14:00	9.2	23.2	7.1	10.4	0.1
11/10/2024 14:15	9.3	42.7	0.0	7.0	10.5	3.4	11/10/2024 14:15	9.2	22.9	7.1	10.4	0.1
11/10/2024 14:30	9.5	52.2	0.0	7.4	10.4	3.4	11/10/2024 14:30	9.2	22.4	7.1	10.4	1.1
11/10/2024 14:45	9.5	52.9	0.0	7.4	10.4	3.7	11/10/2024 14:45	9.2	22.5	7.1	10.4	0.1
11/10/2024 15:00	9.5	53.0	0.0	7.4	10.4	3.3	11/10/2024 15:00	9.2	22.0	7.0	10.4	0.3
11/10/2024 15:15	9.5	53.0	0.0	7.4	10.4	3.3	11/10/2024 15:15	9.2	22.2	7.1	10.4	0.1
11/10/2024 15:30	9.5	53.0	0.0	7.4	10.4	3.4	11/10/2024 15:30	9.2	22.0	7.1	10.4	0.2
11/10/2024 15:45	9.5	53.0	0.0	7.4	10.4	3.3	11/10/2024 15:45	9.2	22.1	7.1	10.4	0.2
11/10/2024 16:00	9.5	53.0	0.0	7.4	10.4	3.3	11/10/2024 16:00	9.2	21.8	7.1	10.3	0.1
11/10/2024 16:15	9.3	32.2	0.0	7.2	10.4	3.3	11/10/2024 16:15	9.2	22.2	7.1	10.3	0.3
11/10/2024 16:30	9.2	29.1	0.0	7.0	10.5	3.4	11/10/2024 16:30	9.2	21.6	7.1	10.3	0.2
11/10/2024 16:45	9.2	28.5	0.0	7.0	10.5	3.5	11/10/2024 16:45	9.2	22.2	7.1	10.3	0.1
11/10/2024 17:00	9.2	28.3	0.0	7.0	10.5	3.4	11/10/2024 17:00	9.2	21.8	7.1	10.3	0.2
11/10/2024 17:15	9.2	28.2	0.0	6.9	10.5	3.3	11/10/2024 17:15	9.2	22.2	7.1	10.3	0.2
11/10/2024 17:30	9.2	28.1	0.0	6.9	10.5	3.3	11/10/2024 17:30	9.2	21.8	7.1	10.3	0.1
11/10/2024 17:45	9.2	28.0	0.0	6.9	10.5	3.3	11/10/2024 17:45	9.2	22.6	7.1	10.3	0.2
11/10/2024 18:00	9.2	28.0	0.0	6.9	10.5	3.3	11/10/2024 18:00	9.2	23.0	7.1	10.3	0.1
11/10/2024 18:15	9.4	46.7	0.0	7.3	10.5	3.5	11/10/2024 18:15	9.2	23.4	7.1	10.3	0.2
11/10/2024 18:30	9.4	53.0	0.0	7.4	10.4	3.4	11/10/2024 18:30	9.2	22.8	7.0	10.3	0.3
11/10/2024 18:45	9.5	53.7	0.0	7.4	10.4	4.4	11/10/2024 18:45	9.2	23.5	7.1	10.3	0.2
11/10/2024 19:00	9.5	53.8	0.0	7.4	10.4	3.3	11/10/2024 19:00	9.2	23.2	7.1	10.3	0.3
11/10/2024 19:15	9.5	53.9	0.0	7.4	10.4	3.3	11/10/2024 19:15	9.2	23.6	7.1	10.3	0.2
11/10/2024 19:30	9.5	53.8	0.0	7.4	10.4	3.3	11/10/2024 19:30	9.2	24.3	7.1	10.3	0.2
11/10/2024 19:45	9.5	53.8	0.0	7.4	10.4	3.3	11/10/2024 19:45	9.2	26.3	7.1	10.3	0.2
11/10/2024 20:00	9.5	54.2	0.0	7.4	10.4	3.4	11/10/2024 20:00	9.1	27.8	7.2	10.3	0.2
11/10/2024 20:15	9.5	54.5	0.0	7.4	10.4	3.4	11/10/2024 20:15	9.1	33.0	7.2	10.3	0.2
11/10/2024 20:30	9.5	56.0	0.0	7.4	10.4	3.4	11/10/2024 20:30	9.2	35.2	7.2	10.3	0.2
11/10/2024 20:45	9.3	40.2	0.0	7.2	10.4	3.5	11/10/2024 20:45	9.2	38.6	7.3	10.3	0.2
11/10/2024 21:00	9.2	39.5	0.0	7.1	10.4	3.6	11/10/2024 21:00	9.2	39.5	7.3	10.3	0.3
11/10/2024 21:15	9.2	40.6	0.0	7.0	10.5	3.6	11/10/2024 21:15	9.2	44.2	7.3	10.3	0.5
11/10/2024 21:30	9.2	42.2	0.0	7.1	10.5	3.5	11/10/2024 21:30	9.2	48.9	7.3	10.3	0.6
11/10/2024 21:45	9.2	46.6	0.0	7.1	10.5	3.6	11/10/2024 21:45	9.2	51.0	7.4	10.3	0.8
11/10/2024 22:00	9.1	49.6	0.0	7.1	10.5	3.9	11/10/2024 22:00	9.1	52.0	7.4	10.3	1.6
11/10/2024 22:15	9.1	50.7	0.0	7.1	10.4	4.9	11/10/2024 22:15	9.1	59.7	7.4	10.3	2.9
11/10/2024 22:30	9.1	55.3	0.0	7.1	10.5	4.5	11/10/2024 22:30	9.1	63.7	7.5	10.3	3.6
11/10/2024 22:45	9.1	64.6	0.0	7.2	10.5	5.5	11/10/2024 22:45	9.1	70.6	7.5	10.3	3.9
11/10/2024 23:00	9.3	77.3	0.0	7.4	10.4	6.4	11/10/2024 23:00	9.1	73.4	7.5	10.3	4.1
11/10/2024 23:15	9.3	80.4	0.0	7.4	10.4	8.2	11/10/2024 23:15	9.1	78.8	7.6	10.3	4.7
11/10/2024 23:30	9.3	83.8	0.0	7.4	10.4	7.5	11/10/2024 23:30	9.1	77.7	7.6	10.3	4.6
11/10/2024 23:45	9.3	84.1	0.0	7.4	10.4	7.0	11/10/2024 23:45	9.1	77.8	7.6	10.3	5.4