Eagle Mountain - Woodfibre Gas Pipeline Project

BCER Waste Discharge Permit Weekly Report

Contents

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

- No discharges during this reporting period
- 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	Discharge Rate (batch)	Discharge Volume (batch)	Results
BC Rail- No discharges						

*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	2024-09-09	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	2023-09-09	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

- The downstream sonde/data logger was removed July 16th as there was not enough water in the watercourse to log data. BCER was notified.
- The downstream sonde/data logger was reinstalled on August 23rd further downstream (not the permitted location), and removed on September 6th due to construction unrelated to EGP that was causing turbidity spikes. It was reinstalled September 19th. So there is no downstream data to include.
- Included in Appendix C is data from the Water Treatment Plant and data from using a YSI downstream while discharging to document receiving environment when there was no downstream sonde in place due to the dry conditions.

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	2024-09-09	Yes-Appendix C	284 m^3
Woodfibre	2024-09-10	Yes-Appendix C	135 m^3
Woodfibre	2024-09-11	Yes-Appendix C	210 m^3
Woodfibre	2024-09-12	Yes-Appendix C	227 m^3
Woodfibre	2024-09-13	Yes-Appendix C	166 m^3
Woodfibre	2024-09-14	Yes-Appendix C	246 m^3
Woodfibre	2024-09-15	Yes-Appendix C	265 m^3

*Max discharge is 1500m^3/day

Exceedances

None to report.

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

Woodfibre Upstream	2024-09-10	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	2024-09-10	No-Sonde Removed	Full set of lab sample results, photo and documentation are provided in Appendix D. Note that Sonde was removed on July 16th, 2024 due to dry conditions. Sonde was reinstalled at a lower location with water on August 22nd and removed on Sept 6th as WLNG was working in area. Reinstalled Sept 19th .Contractor used a YSI to do in situ readings during discharges.

* 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

No Discharges

BCR Site Batch Sample Lab Documentation

No Discharges

BCR Site WTP Discharge Field Notes and Logs
No Discharges

Appendix B: BCR Site Receiving Environment Documentation

BCR Site Receiving Environment Sample Analysis

TRITON Environmental Consultants	Sample ID	Reviewed and signed off by:	College of Applied Biologists Farshad Shafiei RPBio 3781 CAB		Farshad Shafiei Ph.D., R.P.Bio.	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					VA24C3452-001	VA24C3452-002					
	Date Sampled					09-Sep-2024	09-Sep-2024					
	Time Sampled					10:08	10:32					
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	6.9	7.01		If natural pH < 6.5, no statisticaly significant decrease from background. No restriction in increase except in areas with unique flora or fauna. Unrestricted change permitted within range of 6.5 to 9.0. If natural pH > 9.0, no statistically significant increase from background. Refer to BC Water Quality Guidelines for more information.		Unrestricted change within this range (for protection of mollusc embryo development).	
Temperature (field)	°C	Max +/- from BKG 1°C [4]	-	Max +/- from BKG 1°C [4]	-	12.2	12.1		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. treams 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	-	-	-	-	32	26					
Turbidity (field)	NTU	Varies with background, see note Guideline = 125.4	Varies with background, see note Guideline = 138.52 5-week discrete sampling average = 171 (DS)	Varies with background, see note Guideline = 125.4	Varies with background, see note Guideline = 138.52 5-week discrete sampling average = 171 (DS)	114.0	105.5		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	10.33	9.90		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	-	-	-	-	16.8	15.8					
Total Dissolved Solids	mg/L	-	-	-	-	35	33					
Total Suspended Solids	mg/L	Varies with background, see note Guideline = 97.4	Varies with background, see note Guideline = 138.3 5-week discrete sampling average = 157.86 (DS)	Varies with background, see note Guideline = 97.4	Varies with background, see note Guideline = 138.3 5-week discrete sampling average = 157.86 (DS)	87.4	85.8		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.	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	-	-	-	-	< 0.50	< 0.50			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	8.5	7.7	The upstreamand downstream locations have high sensitivity to acid inputs (i.e. low buffering capacity).		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 = 21.4	Varies with pH and temperature. See note. Guideline = 1.81	Varies with pH, temperature and salinity. See note. Guideline = 131	Varies with pH, temperature and salinity. See note. Guideline = 20	0.0963	0.0551		Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 27D in BC WQG for guideline values.	Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 27C in BC WQG for guideline values.	Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 27F in BC WQG for guideline values.	Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 27E in BC WQG for guideline values.
Bromide	mg/L	-	-	-	-	< 0.050	< 0.050					
Chloride	mg/L	600	150	+/- 10% from BKG	+/- 10% from BKG	1.03	0.92				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 = 0.617	-	1.5	-	< 0.020	< 0.020		Guideline has interim status. Guideline is calculated with the following equation: Guideline = [-51.73 + 92.57 log10 (hardness)] * 0.01			
Nitrate (as N)	mg/L	32.8	3	-	3.7	0.0141	0.0128					
Nitrite (as N)	mg/L	Varies with chloride. See note. Guideline = 0.06	Varies with chloride. 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	-	-	-	-	0.114	0.078					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.123	0.11			Guideline is for lakes, refer to BCWQ guideline for nutrients and algae for more information. Guideline does not apply to site.		
Sulfate (as SO_4)	mg/L	-	Varies with hardness. See note. Guideline = 128	-	-	2.63	2.32			Guidelines for hardness ranges below: Hardness 0 - 30: 128 Hardness 31 - 75: 218 Hardness 76 - 180: 309 Hardness 181 - 250: 429		
Total Metals												
Aluminum (Al)-Total	mg/L	-	Varies with pH, DOC, hardness Guideline = 0.028 5-week field average = **5.36** (US), **7.07** (DS)	-	-	***4.4***	***4.15***	**Total Al exceed the long-term average BCWG for FAL at both upstream and downstream locations.** However, this should not be deemed a reportable exceedance because the discharge from BCR has not begun and US1 Al concentration is higher than DS1. Therefore, the high total Al concentration may be characteristic of the Squamish River and the local geology and natural varibility.		Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated with the following equation: Guideline = (EXP((0.645 * LN(DOC)) + (2.255 * LN(hardness)) + (1.995 * pH) + (-0.284 * (LN(hardness) * pH))-9.898)/3/1000) If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.		
Antimony (Sb)-Total	mg/L	0.25	0.074	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.00039	0.00039					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.0467	0.0473			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	0.0000139	0.0000106					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	4.37	3.94					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000145	0.000151					
Chromium (Cr) - Total	mg/L	-	-	-	-	0.0014	0.00149					
Chromium (Cr(III))-Total	mg/L	-	0.0089	-	0.056	0.0014	0.00149			Working guideline status		Working guideline status
Chromium (Cr(VI))-Total	mg/L	-	0.0025	-	0.0015	< 0.00050	< 0.00050			Working guideline status		Working guideline status
Cobalt (Co)-Total	mg/L	0.11	0.004	-	-	0.00112	0.00122					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002	<u>0.0052</u>	<u>0.0052</u>	**Total Cu exceeds the short and long-term BCWG for MAL at both upstream and downstream locations.** However, this should not be deemed a reportable exceedance because the discharge from BCR has not begun and both US1 and DS1 have similar concentration. Therefore, the high total Cu concentration may be characteristic of the Squamish River and the local geology.				
Iron (Fe)-Total	mg/L	1	-	-	-	**2.49**	**2.56**	**Total Fe exceeds the short-term BCWG for FAL at both upstream and downstream locations.** However, this should not be deemed a reportable exceedance because the background total Fe concentration at the upstream location exceeds the BCWG too. Discharge from BCR has not begun yet, so the high concentration is not attributable to BCR construction activities and is likely a characteristic of the Squamish River and the local geology.				
Lead (Pb)-Total	mg/L	Varies with hardness. See Note. Guideline = 0.0084	Varies with hardness. See Note. Guideline = 0.0037	0.14	0.002	0.000495	0.000463		Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline is 0.003 where hardness ≤8mg/L. Guideline uses equation EXP[1.273*on(hardness)-1.460] where hardness is 8-360 mg/L. Lowest value for guideline is 0.003 mg/L.	Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline equation EXP[1.273*on(hardness)-4.704] applies to samples with hardness 8-360 mg/L.		
Lithium (Li)-Total	mg/L	-	-	-	-	0.0022	0.0021					
Magnesium (Mg)-Total	mg/L	-	-	-	-	1.42	1.45					
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 0.715	Varies with hardness Guideline = 0.768	-	-	0.0663	0.0717		Guideline varies with hardness. The guideline is calculated using the following equation: Guideline = (0.0044 * hardness + 0.605) Guideline applies to samples with hardness 25-259 mg/L. Lowest value for guideline is 0.77 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.	Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. The guideline is calculated using the following formula: Guideline = (0.01102 * hardness + 0.54) Guideline applies to samples with hardness 37-450 mg/L. Lowest value for guideline is 0.81 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.		
Mercury (Hg)-Total	mg/L	-	Varies with methyl mercury Guideline = N/A	-	-	< 0.0000050	< 0.0000050			When MeHg ≤ 0.5% of total Hg, guideline is equal to 0.02 mg/L Guideline = 0.1/[MeHg/totalHg]. When MeHg ≤ 0.5% of total Hg, guideline is equal to 0.02 mg/L		
Molybdenum (Mo)-Total	mg/L	46	7.6	-	-	0.000372	0.000349					
Nickel (Ni)-Total	mg/L	-	Varies with hardness Guideline = 0.025	-	0.0083	0.00139	0.00142			Working guideline status. Guideline varies with hardness. Refer to BC Water Quality Guidelines for more information. Hardness 0 ≤ 60: 0.025 Hardness > 60 ≤ 180: Guideline = (EXP((0.76 * (LN(hardness)) + 1.06))/1000) Hardness ≥ 180: 0.15		Working guideline status
Phosphorus (P)-Total	mg/L	-	0.005 to 0.015	-	-	0.136	0.157			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	-	-	-	-	1.38	1.4					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00388	0.00414					
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 guideliens for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guideliens and sampling guidance.		Guideline for marine aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guideliens for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guideliens and sampling guidance.
Silicon (Si)-Total	mg/L	-	-	-	-	9.08	8.06					
Silver (Ag)-Total	mg/L	Varies with hardness, see note Guideline = 0.0001	Varies with hardness, see note Guideline = 0.0015	0.003	0.0015	0.000014	0.000015		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	-	-	-	-	2.35	2.02					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0544	0.0498					
Sulfur (S)-Total	mg/L	-	-	-	-	0.64	< 0.50					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.0008	-	-	0.000019	0.000022			30-day average, site-specific objective for the lower Columbia River, BC. Guideline is for reference only and does not apply to tnhe EGP site.		
Thorium (Th)-Total	mg/L	-	-	-	-	0.00017	0.00016					
Tin (Sn)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Titanium (Ti)-Total	mg/L	-	-	-	-	0.166	0.178					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Total	mg/L	-	0.0085	-	-	0.000093	0.000098			Working guideline status		
Vanadium (V)-Total	mg/L	-	-	-	0.050	0.00643	0.00655					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	Guideline = 0.010 5-week field average = 0.009 (US), 0.013 (DS)	0.0078	*0.0092*	**Total Zn exceeds the BCWQ MAL long-term guidelines at the downstream location.** However, this should not be deemed a reportable exceedance because the discharge from BCR has not begun yet, so the high concentration are not attributable to BCR construction activities and is likely a characteristic of the Squamish River and the local geology.				
Zirconium (Zr)-Total	mg/L	-	-	-	-	0.00045	0.00034					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0373	0.0194					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00011	< 0.00010					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.0031	0.00311					
Beryllium (Be)-Dissolved	mg/L	-	-	-	-	< 0.000100	< 0.000100					
Bismuth (Bi)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Boron (B)-Dissolved	mg/L	-	-	-	-	< 0.010	< 0.010					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note Guideline = 0.000094	Varies with hardness, see note Guideline = 0.000063	-	-	< 0.0000050	< 0.0000050		Guideline is hardness dependent. Guideline is appilcable to water hardness between 7.0 and 455 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(1.03 * (LN(hardness)) - 5.274)/1000) Lowest value for guideline is 0.000018 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.	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 guiedeline 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	-	-	2.94	2.66	The upstream and downstream locations have high sensitivity to acid inputs (i.e. low buffering capacity).		Guideline categorizes the sensitivity of a water body to acid inputs (i.e. buffering capacity). Standard is 4 mg/L dissolved Ca for the most sensitive waterbodies,5 - 8 mg/L for waterbodies with moderate sensitivity to acid inputs. Waterbodies with dissolved calcium > 8mg/L are considered to have low sensitivity to acid inputs.		
Cesium (Cs)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Chromium (Cr)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Cobalt (Co)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note Guideline = 0.0003	Guideline varies with other parameters, see note Guideline = 0.0002 5-week field average = **0.0014** (US), **0.0053** (DS)	-	-	***0.0003***	***0.0002***	**Dissolved Cu exceeds the long-term BCWG for FAL at both the upstream and downstream locations.** However, this should not be deemed a reportable exceedance because the discharge from BCR has not begun full-time. So, the high concentration is not attributable to BCR construction activities and may be characteristic of the Squamish River and the local geology.	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	-	-	-	0.032	0.017					
Lead (Pb)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	< 0.0010	< 0.0010					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.364	0.316					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00658	0.00634					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.000362	0.00033					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	0.597	0.562					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00086	0.00075					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	2.6	2.2					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	1.26	1.08					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.02	0.0183					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	0.86	0.62					
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	-	-	-	-	0.0011	0.00052					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.000014	0.000014					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	0.00096	0.00079					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness Guideline = 0.008	Varies with pH, DOC, hardness Guideline = 0.0030 5-week field average = 0.0023 (US), 0.0034 (DS)	-	-	< 0.0010	0.0011		Guideline varies with DOC and hardness. Guideline is calculated using the following formula: Guideline = (EXP((0.833 * (LN(hardness))) + (0.24 * (LN(DOC))) + 0.526)/2/1000) If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.	Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated using the following formula: Guideline = (EXP((0.974 * (LN(hardness))) - (0.815 * pH) + (0.398 * (LN(DOC))) + 4.625)/2/1000) Guideline only applies to water with pH between 6.5 and 8.13, DOC between 0.3 and 22.9 mg/L, anmd hardness between 23.4 and 399 mg/L. If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.		
Zirconium (Zr)-Dissolved	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Applied Guideline:		British Columbia Approved and Working Water Qualtiy Guidelines (NOV 2023) - BCAWWQG - Freshwater Aquatic Life British Columbia Approved and Working Water Qualtiy Guidelines (NOV 2023) - BCAWWQG - Marine Aquatic Life										
Color Key:	<u>Exceeds both FAL and MAL Guidelines</u>	Exceeds FAL Short term Guideline	*Exceeds FAL Long term Guideline*	Exceeds MAL Short term Guideline	*Exceeds MAL Long term Guideline*							
Color Key:		<u>Exceeds Short and Long-Term Guideline</u>		<u>Exceeds MAL Short and Long-term Guidelines</u>								

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

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

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

[4]Background temperature ranges: Dec-Feb: 2.0-4.0C; Mar-Apr: 4.0-6.0C; May-June: 6.0-12.0C; Jul-Sept: 9.0-12.0C; Oct-Nov: 3.0-5.0

Reference: Triton Environmental Consulants Ltd. 2023. Memo - Background water quality values for the BC Rail Discharge to Squamish River
For guidelines dependent on other parameters, when hardness, pH or DOC are below the range stated in the guideline, the lowest value in the range is used to calculate the guideline.

Parameters Used to Calculate Guidelines

Analyte	Units	FAL-ST [1,2]	FAL-LT [1,2]	MAL-ST [1]	MAL-LT [1,2]	Values: SQU US1 (Upstream)	Values: SQU DS1 (Downstream)
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations				6.9	7.01
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations				12.2	12.1
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations				114.00	105.50
Hardness (as CaCO3) (total)	mg/L	Laboratory tested total hardness taken at each respective sample site on the day of sampling used in guideline calculations				16.8	15.8
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations				0.5	0.5
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations				8.5	7.7
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations				1.03	0.92

BCR Site Receiving Environment Lab Documentation

ALS Canada Ltd.

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CERTIFICATE OF ANALYSIS

Work Order	: **VA24C3452**	Page	: 1 of 6
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 09-Sep-2024 12:00
PO	: 11964 - Task 20 - Phase 3C-4C	Date Analysis Commenced	: 10-Sep-2024
C-O-C number	: ----	Issue Date	: 18-Sep-2024 12:46
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 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*
		Inorganics, Calgary, Alberta
		Metals, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Administration, Burnaby, British Columbia
		Inorganics, Waterloo, Ontario
		Metals, Waterloo, Ontario

General Comments

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

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

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

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

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

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

<: less than.

>: greater than.

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

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

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

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	----	----	----
					Client sampling date / time	09-Sep-2024 10:08	09-Sep-2024 10:32	----	----	----
						VA24C3452-001	VA24C3452-002	--------	--------	--------
						Result	Result	----	----	----
Field Tests										
Conductivity, field	----	EF001/VA	0.10	µS/cm		32.000	26.000	----	----	----
pH, field	----	EF001/VA	0.10	pH units		6.90	7.01	----	----	----
Temperature, field	----	EF001/VA	0.10	°C		12.2	12.1	----	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		8.84	7.94	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		16.8	15.8	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		35	33	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		87.4	85.8	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		8.5	7.7	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.0963	0.0551	----	----	----
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		1.03	0.92	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		<0.020	<0.020	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		0.0141	0.0128	----	----	----
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		0.114	0.078	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.123	0.110	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		2.63	2.32	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/CG	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	----	----	----
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		4.40	4.15	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	----	----	----
					Client sampling date / time	09-Sep-2024 10:08	09-Sep-2024 10:32	----	----	----
						VA24C3452-001	VA24C3452-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00039	0.00039	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.0467	0.0473	----	----	----
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		0.0000139	0.0000106	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		4.37	3.94	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000145	0.000151	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		0.00140	0.00149	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		0.00112	0.00122	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00519	0.00516	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		2.49	2.56	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000495	0.000463	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0022	0.0021	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		1.42	1.45	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.0663	0.0717	----	----	----
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		0.000372	0.000349	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		0.00139	0.00142	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		0.136	0.157	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		1.38	1.40	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00388	0.00414	----	----	----
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		9.08	8.06	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		0.000014	0.000015	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		2.35	2.02	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0544	0.0498	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		0.64	<0.50	----	----	----
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		0.000019	0.000022	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	----	----	----
					Client sampling date / time	09-Sep-2024 10:08	09-Sep-2024 10:32	----	----	----
						VA24C3452-001	VA24C3452-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		0.00017	0.00016	----	----	----
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		0.166	0.178	----	----	----
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		0.000093	0.000098	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.00643	0.00655	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		0.0078	0.0092	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		0.00045	0.00034	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0373	0.0194	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00011	<0.00010	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00310	0.00311	----	----	----
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		2.94	2.66	----	----	----
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		0.00028	0.00023	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.032	0.017	----	----	----
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		0.364	0.316	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00658	0.00634	----	----	----
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		0.000362	0.000330	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SQU US 1	SQU DS 1	----	----	----
					Client sampling date / time	09-Sep-2024 10:08	09-Sep-2024 10:32	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C3452-001	VA24C3452-002	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		0.597	0.562	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00086	0.00075	----	----	----
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		2.60	2.20	----	----	----
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		1.26	1.08	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0200	0.0183	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		0.86	0.62	----	----	----
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		0.00110	0.00052	----	----	----
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		0.000014	0.000014	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		0.00096	0.00079	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		<0.0010	0.0011	----	----	----
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		0.00140	0.00149	----	----	----

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	: **VA24C3452**	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	: 09-Sep-2024 12:00
PO	: 11964 - Task 20 - Phase 3C-4C	Issue Date	: 18-Sep-2024 12:47
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)

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

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU DS 1	E298	09-Sep-2024	11-Sep-2024	28 days	2 days	✓	13-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU US 1	E298	09-Sep-2024	11-Sep-2024	28 days	2 days	✓	13-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU DS 1	E235.Br-L	09-Sep-2024	10-Sep-2024	28 days	1 days	✓	10-Sep-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU US 1	E235.Br-L	09-Sep-2024	10-Sep-2024	28 days	1 days	✓	10-Sep-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU DS 1	E235.Cl	09-Sep-2024	10-Sep-2024	28 days	1 days	✓	10-Sep-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU US 1	E235.Cl	09-Sep-2024	10-Sep-2024	28 days	1 days	✓	10-Sep-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE SQU DS 1	E235.F	09-Sep-2024	10-Sep-2024	28 days	1 days	✓	10-Sep-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 SQU US 1	E235.F	09-Sep-2024	10-Sep-2024	28 days	1 days	✓	10-Sep-2024	28 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SQU DS 1	E235.NO3-L	09-Sep-2024	10-Sep-2024	3 days	1 days	✓	10-Sep-2024	3 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SQU US 1	E235.NO3-L	09-Sep-2024	10-Sep-2024	3 days	1 days	✓	10-Sep-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SQU DS 1	E235.NO2-L	09-Sep-2024	10-Sep-2024	3 days	1 days	✓	10-Sep-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SQU US 1	E235.NO2-L	09-Sep-2024	10-Sep-2024	3 days	1 days	✓	10-Sep-2024	3 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU DS 1	E235.SO4	09-Sep-2024	10-Sep-2024	28 days	1 days	✓	10-Sep-2024	28 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU US 1	E235.SO4	09-Sep-2024	10-Sep-2024	28 days	1 days	✓	10-Sep-2024	28 days	1 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU DS 1	E366	09-Sep-2024	11-Sep-2024	28 days	2 days	✓	12-Sep-2024	28 days	3 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU US 1	E366	09-Sep-2024	11-Sep-2024	28 days	2 days	✓	12-Sep-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)										
SQU DS 1	E372-U	09-Sep-2024	11-Sep-2024	28 days	2 days	✓	13-Sep-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	09-Sep-2024	11-Sep-2024	28 days	2 days	✓	13-Sep-2024	28 days	4 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SQU DS 1	E509	09-Sep-2024	17-Sep-2024	28 days	8 days	✓	17-Sep-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SQU US 1	E509	09-Sep-2024	17-Sep-2024	28 days	8 days	✓	17-Sep-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SQU DS 1	E421	09-Sep-2024	17-Sep-2024	180 days	8 days	✓	18-Sep-2024	180 days	9 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SQU US 1	E421	09-Sep-2024	17-Sep-2024	180 days	8 days	✓	18-Sep-2024	180 days	9 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
SQU DS 1	EF001	09-Sep-2024	----	----	----		11-Sep-2024	----	2 days	
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
SQU US 1	EF001	09-Sep-2024	----	----	----		11-Sep-2024	----	2 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
SQU DS 1	E358-L	09-Sep-2024	16-Sep-2024	28 days	7 days	✓	16-Sep-2024	28 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
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) SQU US 1	E358-L	09-Sep-2024	16-Sep-2024	28 days	7 days	✓	16-Sep-2024	28 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SQU DS 1	E290	09-Sep-2024	10-Sep-2024	14 days	1 days	✓	11-Sep-2024	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SQU US 1	E290	09-Sep-2024	10-Sep-2024	14 days	1 days	✓	11-Sep-2024	14 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SQU DS 1	E162	09-Sep-2024	----	----	----		16-Sep-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SQU US 1	E162	09-Sep-2024	----	----	----		16-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE SQU DS 1	E160	09-Sep-2024	----	----	----		16-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE SQU US 1	E160	09-Sep-2024	----	----	----		16-Sep-2024	7 days	7 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (lab preserved) SQU DS 1	E532	09-Sep-2024	----	----	----		12-Sep-2024	24 hrs	70 hrs	× EHTL
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (lab preserved) SQU US 1	E532	09-Sep-2024	----	----	----		12-Sep-2024	24 hrs	70 hrs	× EHTL

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 (lab preserved)										
SQU DS 1	E508	09-Sep-2024	16-Sep-2024	28 days	7 days	✓	16-Sep-2024	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
SQU US 1	E508	09-Sep-2024	16-Sep-2024	28 days	7 days	✓	16-Sep-2024	28 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SQU DS 1	E420	09-Sep-2024	14-Sep-2024	180 days	5 days	✓	16-Sep-2024	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
SQU US 1	E420	09-Sep-2024	14-Sep-2024	180 days	5 days	✓	16-Sep-2024	180 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU DS 1	E395	09-Sep-2024	----	----	----		10-Sep-2024	7 days	1 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU US 1	E395	09-Sep-2024	----	----	----		10-Sep-2024	7 days	1 days	✓

Legend & Qualifier Definitions

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

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	1642427	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	1645766	1	15	6.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1642434	1	13	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1642429	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1654731	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1647606	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1654119	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1642433	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1642430	1	18	5.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1642431	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1642432	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1654070	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1647042	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1654018	1	15	6.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1647830	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1645760	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1645765	1	15	6.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1642847	1	5	20.0	5.0	✓
TSS by Gravimetry	E160	1654038	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1642427	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	1645766	1	15	6.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1642434	1	13	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1642429	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1654731	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1647606	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1654119	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1642433	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1642430	1	18	5.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1642431	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1642432	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1654070	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1647042	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1654018	1	15	6.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1647830	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1645760	1	11	9.0	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1645765	1	15	6.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1642847	1	5	20.0	5.0	✓
TSS by Gravimetry	E160	1654038	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1642427	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	1645766	1	15	6.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1642434	1	13	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1642429	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1654731	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1647606	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1654119	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1642433	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1642430	1	18	5.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1642431	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1642432	1	18	5.5	5.0	✓
TDS by Gravimetry	E162	1654070	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1647042	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1654018	1	15	6.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1647830	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1645760	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1645765	1	15	6.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1642847	1	5	20.0	5.0	✓
TSS by Gravimetry	E160	1654038	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1645766	1	15	6.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1642434	1	13	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1642429	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1654731	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1647606	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1654119	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1642433	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1642430	1	18	5.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1642431	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1642432	1	18	5.5	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1647042	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1654018	1	15	6.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1647830	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1645760	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1645765	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*
Matrix Spikes (MS) - Continued							
Total Sulfide by Colourimetry (Automated Flow)	E395	1642847	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
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 - Calgary	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 - Calgary	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	: **VA24C3452**	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	: 09-Sep-2024 12:00
PO	: 11964 - Task 20 - Phase 3C-4C	Date Analysis Commenced	: 10-Sep-2024
C-O-C number	: ----	Issue Date	: 18-Sep-2024 12:47
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*
		Calgary Inorganics, Calgary, Alberta
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Administration, Burnaby, British Columbia
		Waterloo Inorganics, Waterloo, Ontario
		Waterloo Metals, Waterloo, Ontario

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: 1642427)											
KS2403645-003	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1654038)											
FJ2402732-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1654070)											
FJ2402732-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	518	514	0.775%	20%	----
Anions and Nutrients (QC Lot: 1642429)											
VA24C3452-001	SQU US 1	Chloride	16887-00-6	E235.Cl	0.50	mg/L	1.03	1.05	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1642430)											
VA24C3452-001	SQU US 1	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0141	0.0126	0.0015	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1642431)											
VA24C3452-001	SQU US 1	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: 1642432)											
VA24C3452-001	SQU US 1	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	2.63	2.64	0.005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1642433)											
VA24C3452-001	SQU US 1	Fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1642434)											
VA24C3452-001	SQU US 1	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1645760)											
VA24C3417-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.221	0.213	0.008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1645765)											
VA24C3417-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0069	0.0068	0.00005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1645766)											
VA24C3417-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1654119)											
VA24C3224-008	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.70	1.73	0.04	Diff <2x LOR	----
Total Sulfides (QC Lot: 1642847)											
EO2407718-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0150	mg/L	0.343	0.348	1.27%	20%	----
Total Metals (QC Lot: 1647830)											
VA24C3224-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0991	0.0935	5.82%	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: 1647830) - continued											
VA24C3224-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00018	0.00018	0.000003	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.00683	0.00662	3.14%	20%	----
		Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000066	0.0000060	0.0000006	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	16.4	16.1	1.64%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000016	0.000017	0.0000004	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	0.00080	<0.00050	0.00030	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	0.00493	0.00433	0.00059	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.030	mg/L	0.074	0.072	0.002	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000067	<0.000050	0.000017	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.100	mg/L	2.07	2.03	1.90%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00366	0.00350	4.43%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000396	0.000378	0.000018	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00100	0.00085	0.00014	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	0.528	0.530	0.392%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00089	0.00090	0.000010	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000096	0.000131	0.000035	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	1.70	1.68	1.21%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	1.21	1.20	0.807%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.131	0.128	2.85%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	2.15	2.25	0.10	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	0.00014	0.00013	0.000005	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000159	0.000154	2.61%	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: 1647830) - continued											
VA24C3224-001	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: 1654018)											
VA24C3232-004	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0000275	0.0000290	0.0000015	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1647606)											
VA24C3275-007	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	<0.0020	0.0021	0.00006	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0317	0.0316	0.410%	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	<0.020	<0.020	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	0.00104	0.00103	1.11%	20%	----
		Calcium, dissolved	7440-70-2	E421	0.100	mg/L	289	297	2.67%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000020	mg/L	0.000457	0.000461	0.878%	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	0.00062	0.00064	0.00002	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00040	mg/L	0.00270	0.00269	0.00001	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.020	mg/L	0.022	0.022	0.0004	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.0310	0.0310	0.228%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.100	mg/L	52.4	51.6	1.43%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00020	mg/L	9.48	9.29	2.05%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.0566	0.0578	2.04%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.00380	0.00370	0.00010	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	18.0	17.8	1.01%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00040	mg/L	0.00461	0.00479	3.89%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.100	mg/L	8.62	8.59	0.339%	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	91.6	89.9	1.87%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00040	mg/L	7.50	7.45	0.635%	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: 1647606) - continued											
VA24C3275-007	Anonymous	Sulfur, dissolved	7704-34-9	E421	1.00	mg/L	318	313	1.75%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00040	mg/L	0.00041	0.00041	0.000003	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.000041	0.000041	0.00000005	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00020	mg/L	<0.00020	0.00022	0.00002	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	<0.00020	<0.00020	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00430	0.00440	2.30%	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	0.0134	0.0145	0.0010	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: 1654731)											
VA24C3275-008	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1647042)											
VA24C3438-001	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: 1642427)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1654038)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1654070)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1642429)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1642430)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1642431)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1642432)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1642433)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1642434)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1645760)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1645765)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1645766)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1654119)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1642847)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1647830)						
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: 1647830) - 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: 1654018)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1647606)						
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: 1647606) - 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: 1654731)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1647042)						
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: 1642427)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1654038)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	93.3	85.0	115	----
Physical Tests (QCLot: 1654070)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 1642429)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1642430)									
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: 1642431)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1642432)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1642433)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 1642434)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 1645760)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	94.5	75.0	125	----
Anions and Nutrients (QCLot: 1645765)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	95.1	80.0	120	----
Anions and Nutrients (QCLot: 1645766)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	97.3	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1654119)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	93.8	80.0	120	----
Total Sulfides (QCLot: 1642847)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	102	80.0	120	----
Total Metals (QCLot: 1647830)									

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: 1647830) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	99.4	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	99.1	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	105	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	95.7	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	90.7	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	100	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	83.3	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	101	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	93.6	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	99.6	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	101	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	100	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	99.1	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	95.8	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	91.6	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	98.6	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	99.5	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	98.4	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	112	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	95.6	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	106	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	90.5	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	95.8	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	105	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	93.0	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	97.6	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	94.1	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	101	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	104	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1647830) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	100	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	100	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	99.0	80.0	120	----
Total Metals (QCLot: 1654018)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	99.2	80.0	120	----
Dissolved Metals (QCLot: 1647606)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	106	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	106	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	107	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	95.7	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	101	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	101	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	107	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	101	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	105	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	103	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	105	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	107	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	111	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	107	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	112	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	94.7	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	105	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	110	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: 1647606) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	99.4	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	103	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	95.4	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	100	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	95.2	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	100	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	106	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	98.6	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	98.5	80.0	120	----
Speciated Metals (QCLot: 1647042)									
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: 1642429)										
VA24C3452-002	SQU DS 1	Chloride	16887-00-6	E235.Cl	98.5 mg/L	100 mg/L	98.5	75.0	125	----
Anions and Nutrients (QCLot: 1642430)										
VA24C3452-002	SQU DS 1	Nitrate (as N)	14797-55-8	E235.NO3-L	2.44 mg/L	2.5 mg/L	97.5	75.0	125	----
Anions and Nutrients (QCLot: 1642431)										
VA24C3452-002	SQU DS 1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.496 mg/L	0.5 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 1642432)										
VA24C3452-002	SQU DS 1	Sulfate (as SO4)	14808-79-8	E235.SO4	99.4 mg/L	100 mg/L	99.4	75.0	125	----
Anions and Nutrients (QCLot: 1642433)										
VA24C3452-002	SQU DS 1	Fluoride	16984-48-8	E235.F	0.998 mg/L	1 mg/L	99.8	75.0	125	----
Anions and Nutrients (QCLot: 1642434)										
VA24C3452-002	SQU DS 1	Bromide	24959-67-9	E235.Br-L	0.508 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1645760)										
VA24C3417-002	Anonymous	Nitrogen, total	7727-37-9	E366	0.387 mg/L	0.4 mg/L	96.9	70.0	130	----
Anions and Nutrients (QCLot: 1645765)										
VA24C3417-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0487 mg/L	0.05 mg/L	97.4	70.0	130	----
Anions and Nutrients (QCLot: 1645766)										
VA24C3417-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0982 mg/L	0.1 mg/L	98.2	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1654119)										
VA24C3224-008	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	5.46 mg/L	5 mg/L	109	70.0	130	----
Total Sulfides (QCLot: 1642847)										
EO2407727-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.201 mg/L	0.2 mg/L	100	75.0	125	----
Total Metals (QCLot: 1647830)										
VA24C3224-002	Anonymous	Aluminum, total	7429-90-5	E420	0.191 mg/L	0.2 mg/L	95.6	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0181 mg/L	0.02 mg/L	90.4	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Barium, total	7440-39-3	E420	0.0185 mg/L	0.02 mg/L	92.3	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0356 mg/L	0.04 mg/L	89.0	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00949 mg/L	0.01 mg/L	94.9	70.0	130	----
		Boron, total	7440-42-8	E420	0.083 mg/L	0.1 mg/L	83.2	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00397 mg/L	0.004 mg/L	99.3	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00947 mg/L	0.01 mg/L	94.7	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0401 mg/L	0.04 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: 1647830) - continued										
VA24C3224-002	Anonymous	Cobalt, total	7440-48-4	E420	0.0199 mg/L	0.02 mg/L	99.5	70.0	130	----
		Copper, total	7440-50-8	E420	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
		Iron, total	7439-89-6	E420	1.95 mg/L	2 mg/L	97.7	70.0	130	----
		Lead, total	7439-92-1	E420	0.0183 mg/L	0.02 mg/L	91.5	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0877 mg/L	0.1 mg/L	87.7	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0390 mg/L	0.04 mg/L	97.6	70.0	130	----
		Phosphorus, total	7723-14-0	E420	9.95 mg/L	10 mg/L	99.5	70.0	130	----
		Potassium, total	7440-09-7	E420	3.74 mg/L	4 mg/L	93.4	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0197 mg/L	0.02 mg/L	98.5	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		Silicon, total	7440-21-3	E420	9.45 mg/L	10 mg/L	94.5	70.0	130	----
		Silver, total	7440-22-4	E420	0.00373 mg/L	0.004 mg/L	93.2	70.0	130	----
		Sodium, total	7440-23-5	E420	1.88 mg/L	2 mg/L	93.8	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	19.7 mg/L	20 mg/L	98.4	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0391 mg/L	0.04 mg/L	97.7	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00369 mg/L	0.004 mg/L	92.4	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
		Tin, total	7440-31-5	E420	0.0188 mg/L	0.02 mg/L	94.3	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0392 mg/L	0.04 mg/L	98.1	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00386 mg/L	0.004 mg/L	96.6	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0990 mg/L	0.1 mg/L	99.0	70.0	130	----
		Zinc, total	7440-66-6	E420	0.400 mg/L	0.4 mg/L	99.9	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0382 mg/L	0.04 mg/L	95.6	70.0	130	----
Total Metals (QCLot: 1654018)										
VA24C3232-005	Anonymous	Mercury, total	7439-97-6	E508	0.0000934 mg/L	0 mg/L	93.4	70.0	130	----
Dissolved Metals (QCLot: 1647606)										
VA24C3275-008	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.203 mg/L	0.2 mg/L	102	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0189 mg/L	0.02 mg/L	94.4	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0393 mg/L	0.04 mg/L	98.4	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00904 mg/L	0.01 mg/L	90.4	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.088 mg/L	0.1 mg/L	88.4	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00383 mg/L	0.004 mg/L	95.7	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00964 mg/L	0.01 mg/L	96.4	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0382 mg/L	0.04 mg/L	95.5	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: 1647606) - continued										
VA24C3275-008	Anonymous	Copper, dissolved	7440-50-8	E421	0.0187 mg/L	0.02 mg/L	93.6	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.92 mg/L	2 mg/L	95.9	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0188 mg/L	0.02 mg/L	93.8	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0982 mg/L	0.1 mg/L	98.2	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	0.975 mg/L	1 mg/L	97.5	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0196 mg/L	0.02 mg/L	97.9	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	ND mg/L	----	ND	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0376 mg/L	0.04 mg/L	94.1	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.90 mg/L	10 mg/L	99.0	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	4.15 mg/L	4 mg/L	104	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0378 mg/L	0.04 mg/L	94.5	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.65 mg/L	10 mg/L	96.5	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00367 mg/L	0.004 mg/L	91.7	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	20.0 mg/L	20 mg/L	99.8	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0393 mg/L	0.04 mg/L	98.3	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	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0389 mg/L	0.04 mg/L	97.2	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0176 mg/L	0.02 mg/L	88.1	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00377 mg/L	0.004 mg/L	94.3	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0970 mg/L	0.1 mg/L	97.0	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.385 mg/L	0.4 mg/L	96.2	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: 1654731)										
VA24C3452-001	SQU US 1	Mercury, dissolved	7439-97-6	E509	0.0000985 mg/L	0 mg/L	98.5	70.0	130	----
Speciated Metals (QCLot: 1647042)										
VA24C3438-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0394 mg/L	0.04 mg/L	98.5	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 17 -

Page 1 of

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	Triton Environmental	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	Regular [R] X Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:		Quality Control (QC) Report with Report ☑ ☐ NO	PRIORITY (Business Days): 4 day [P4-20%] ☐ ; 3 day [P3-25%] ☐ ; 2 day [P2-50%] ☐
Phone:		☑ Compare Results to Criteria on Report - provide details below if box checked	EMERGENCY: 1 Business day [E1 - 100%] ☐ ; Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐
	the final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Street:		Email 1 or Fax	Date and Time Required for all E&P TATs: 17 - Sept - 2024
City/Province:		Email 2	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:		Email 3	

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

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

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	09 Sep 24	10:08	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 6.90 cond: 32 µS/cm temp: 12.2 °C																	
	SQU DS 1	09 Sept 24	10:32	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 7.01 cond: 26 µS/cm temp: 12.1 °C																	
	~~Duplicate~~			~~Water~~	R	R	R	R	R	R	R	R	R	R	R		N	9
	~~Field Blank~~			~~Water~~	R	R	R	R	R	R	R	R	R	R	R		N	9
	~~Trip Blank~~				R		R	R	R	R	R	R	R	R			N	6

Environmental Division
Vancouver
Work Order Reference
VA24C3452

Telephone : +1 604 253 4188

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

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			
				13			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
[illegible]	9 Sept 2024	Time: 13:14	Received by:	Date:	Time:	Received	Date: Sep 9	Time: 13pm

R [illegible]CATIONS 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.**

BCR Site Receiving Environment Field Notes and Logs

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-9-9-Chycoski-617F4

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	09/09/2024	**Location:**	BC Rail Site
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.725282 -123.165175
Temperature(c):	Low 14 High 18	**Permit:**	AE 111824
Weather Conditions:	Overcast	**Ground Conditions:**	Dry

Observations

Time: 10:32:00 **Flow Volume (visual):** moderate

Notes: Turbidity was measured in ratiometric (FNRU) due to being over range.

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 logger

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

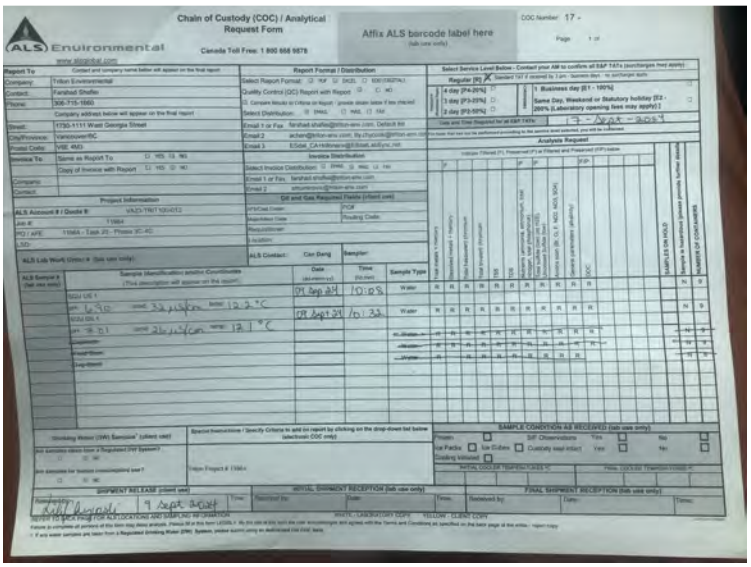

Photo: 4

Location: SQU DS1

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

2024-9-9-Chycoski-499AC

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	09/09/2024	**Location:**	BC Rail Site
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.726866 -123.163912
Temperature(c):	Low 12 High 18	**Permit:**	AE 111824
Weather Conditions:	Overcast	**Ground Conditions:**	Dry

Observations

Time: 10:08:00 **Flow Volume (visual):** moderate

Notes: Turbidity was measured in ratiometric (FNRU) due to being over range.

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: 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

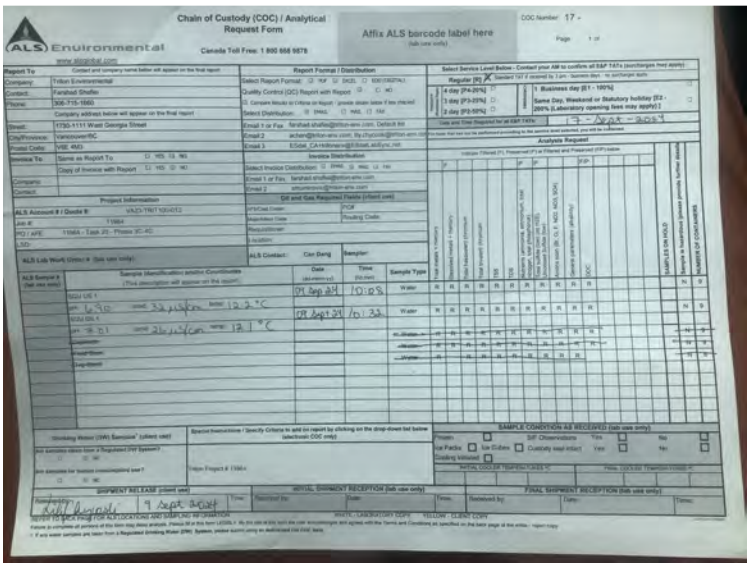

Photo: 4

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:			

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

Woodfibre Site Sample Analysis

TRITON Environmental Consultants	Sample ID	Reviewed and signed off by:	COLLEGE OF APPLIED BIOLOGISTS Farshad Shafiei RPBio 3781 CAB		Farshad Shafiei Ph.D., R.P.Bio.	WLNG EOP	Sample or value notes	BCWQ FAL - Short Term	BCWQ FAL - Long Term	BCWQ MAL - Short Term	BCWQ MAL - Long Term
	LAB ID					VA24C3627-001					
	Date Sampled					10-Sep-2024					
	Time Sampled					10:49					
Analyte	Units	FAL-ST [1,2]	FAL-LT [1,2]	MAL-ST [1]	MAL-LT [1,2]	Water					
						N/A		Guideline notes			
In Situ Parameters											
pH (field)	pH units	6.5-9.0	6.5-9.0	7.0-8.7	7.0-8.7	7.33		If natural pH < 6.5, no statisticaly significant decrease from background. No restriction in increase except in areas with unique flora or fauna. Unrestricted change permitted within range of 6.5 to 9.0. If natural pH > 9.0, no statistically significant increase from background. Refer to BC Water Quality Guidelines for more information.		Unrestricted change within this range (for protection of mollusc embryo development).	
Temperature (field)	°C	Multiple guidelines dependent on water use and species, see notes: Short-term daily temperature = 15°C, or Max +/- 1°C from optimum temperature range for most sensitive salmonid species present, or Short-term daily temperature is 19°C, or Max +/- from BKG 1°C	-	Max +/- from BKG 1°C	-	19.1 (5 weeks average 18.5)	The 5 weeks average of 5 discrete WQ sample at 18.5 °C exceeded Mean Weekly Max Temperature guideline of 18°C. However, considering the infrequent discharge, lack of continuous temperate data and the volume of discharge, no adverse impact was determined and should not be deemed reportable.	Guideline is species-dependent. Short-term daily temperature is 15°C for streams with Bull Trout &/or Dolly Varden, Max +/- 1°C from the optimum range as shown in Table 43B of the BCWG for aquatic life for each life history phase of the most sensitive salmoind species present, Mean Weekly Max Temperature guideline is18°C, Short-term daily temperature guideline is 19°C for streams with unknown fish distribution, or Max +/- 1°C from background. Refer to footnote 4 for background temperature range for East Creek.		Guideline for marine waters are based on natural ambient conditions. Refer to footnote 4 for background temperature range for East Creek. Calculation: US value +/- 1 = guideline range	
Conductivity (field)	µS/cm	-	-	-	-	162	Water treatment process has been increasing the Conductivity levels based on the levels seen at US1 site. Although this is not causing harm, but the treatment facility should be informed and asked to keep the levels like that of observed at US1.				
Turbidity (field)	NTU	Varies with background, see note US1 (background) guideline = 8	Varies with background, see note US1 (background) guideline = 3.87 5-week discrete sampling average = **5.4** (EOP)	Varies with background, see note US1 (background) guideline = 8	Varies with background, see note US1 (background) guideline = 3.87 5-week discrete sampling average = **5.4** (EOP)	***0.04***	**Turbidity for WLNG EOP exceeds long-term guidelines for BCWQ for FAL and MAL.** However, it is not clear if this LT applies to EOP considering the fact that it was from the EOP, not the DS location and that there was no continuous discharge throghout the past 30 days.	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.
General Parameters											
Hardness (as $CaCO_3$) (total)	mg/L	-	-	-	-	55					
Total Dissolved Solids	mg/L	-	-	-	-	103					
Total Suspended Solids	mg/L	Varies with background, see note US1 (background) guideline = 28	Varies with background, see note US1 (background) guideline = 8.00 5-week discrete sampling average = 5.50 (EOP)	Varies with background, see note US1 (background) guideline = 28	Varies with background, see note US1 (background) guideline = 8.00 5-week discrete sampling average = 5.50 (EOP)	< 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 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	-	-	-	-	< 0.50			Long-term (30-day) median within 20% of background median [3]		
Total Phenols	mg/L	0.05	-	-	-	< 0.0010		Interim guideline		Interim guideline	
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	62.9	Water treatment process has been increasing the total Alkalinity levels based on the levels seen at US1 site. Although this is not causing harm, but the treatment facility should be informed and asked to keep the levels like that of observed at US1. The WLNG EOP sample has low sensitivity to acid inputs (i.e. high buffering capacity).		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					
Total Sulfide (un-ionized as H_2S)	mg/L	-	0.002	-	-	< 0.0015			Working guideline		
Total Sulfide (as H_2S)	mg/L	-	-	-	-	< 0.0016					
Anions and Nutrients											
Ammonia	mg/L ammonia-N	Varies with pH and temperature. See note. US1 (background) guideline = 18.3	Varies with pH and temperature. See note. US1 (background) guideline = 1.65	Varies with pH and temperature. See note. US1 (background) guideline = 92	Varies with pH, temperature and salinity. See note. US1 (background) guideline = 5.3	0.0187		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					
Chloride	mg/L	600	150	+/- 10% from BKG	+/- 10% from BKG	1.18				Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural [illegible]	Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more [illegible]
Fluoride	mg/L	Varies with hardness US1 (background) guideline = 0.404	-	1.5	-	0.266		Guideline has interim status. Guideline is calculated with the following equation: Guideline = [-51.73 + 92.57 log10 (hardness)] * 0.01			
Nitrate (as N)	mg/L	32.8	3	-	3.7	0.0102					
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	-	-	0.0013		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	-	-	-	-	0.128					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.0028			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. US1 (background) guideline = 218	-	-	5.15			Guidelines for hardness ranges below: Hardness 0 - 30: 128 Hardness 31 - 75: 218 Hardness 76 - 180: 309 Hardness 181 - 250: 429		
Total Metals											
Aluminum (Al)-Total	mg/L	-	Varies with pH, DOC, hardness US1 (background) guideline = 0.179 5-week discrete sampling averages = EOP (0.064), US (0.100), DS (0.047)	-	-	0.032			Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated with the following equation: Guideline = (EXP((0.645 * LN(DOC)) + (2.255 * LN(hardness)) + (1.995 * pH) + (-0.284 * (LN(hardness) * pH))-9.898)/3/1000) If hardness or DOC is below the hardness range, the minimum hardness or DOC will be applied in the calculation.		
Antimony (Sb)-Total	mg/L	0.25	0.074	-	-	0.00029					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.00116					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.00605			Working guideline status		
Beryllium (Be)-Total	mg/L	-	0.00013	-	0.100	< 0.000100			Working guideline status		Working guideline status
Bismuth (Bi)-Total	mg/L	-	-	-	-	< 0.000050					
Boron (B)-Total	mg/L	-	1.2	-	1.2	0.018					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	< 0.0000100					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	20.4					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000035					
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	-	0.0025	-	0.0015	< 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	< 0.00050					
Iron (Fe)-Total	mg/L	1	-	-	-	0.021					
Lead (Pb)-Total	mg/L	Varies with hardness. See Note. US1 (background) guideline = 0.0043	Varies with hardness. See Note. US1 (background) guideline = 0.0041 5-week discrete sampling averages = EOP (0.000132), US (0.00006), DS (0.00009)	0.14	0.002	< 0.00005		Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline is 0.003 where hardness ≤8mg/L. Guideline uses equation EXP[1.273*on(hardness)-1.460] where hardness is 8-360 mg/L. Lowest value for guideline is 0.003 mg/L.	Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline equation EXP[1.273*on(hardness)-4.704] applies to samples with hardness 8-360 mg/L.		
Lithium (Li)-Total	mg/L	-	-	-	-	0.0066					
Magnesium (Mg)-Total	mg/L	-	-	-	-	1					
Manganese (Mn)-Total	mg/L	Varies with hardness US1 (background) guideline = 0.816	Varies with hardness US1 (background) guideline = 0.768 5-week discrete sampling averages = EOP (0.015), US (0.007), DS (0.015)	-	-	0.0037		Guideline varies with hardness. The guideline is calculated using the following equation: Guideline = (0.0044 * hardness + 0.605) Guideline applies to samples with hardness 25-259 mg/L. Lowest value for guideline is 0.77 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.	Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. The guideline is calculated using the following formula: Guideline = (0.01102 * hardness + 0.54) Guideline applies to samples with hardness 37-450 mg/L. Lowest value for guideline is 0.81 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.		
Mercury (Hg)-Total	mg/L	-	Varies with methyl mercury US1 (background) guideline = N/A	-	-	< 0.0000050			When MeHg ≤ 0.5% of total Hg, guideline is equal to 0.02 mg/L Guideline = 0.1/[MeHg/totalHg]. When MeHg ≤ 0.5% of total Hg, guideline is equal to 0.02 mg/L		
Molybdenum (Mo)-Total	mg/L	46	7.6	-	-	0.0178					
Nickel (Ni)-Total	mg/L	-	Varies with hardness US1 (background) guideline = 0.025 5-week discrete sampling averages = EOP (0.00073), US (0.00099), DS (0.00071)	-	0.008	< 0.00050			Working guideline status. Guideline varies with hardness. Refer to BC Water Quality Guidelines for more information. Hardness 0 ≤ 60: 0.025 Hardness > 60 ≤ 180: Guideline = (EXP((0.76 * (LN(hardness)) + 1.06))/1000) Hardness ≥ 180: 0.15		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	-	-	-	-	2.96					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00577					
Selenium (Se)-Total	mg/L	-	0.002	-	0.002	0.000091			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 guideliens and sampling guidance.		Guideline for marine aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guideliens for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guideliens and sampling guidance.
Silicon (Si)-Total	mg/L	-	-	-	-	6.17					
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: 0.003	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	-	-	-	-	3.9					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.047					
Sulfur (S)-Total	mg/L	-	-	-	-	1.89					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.0008	-	-	0.000018			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	-	-	-	-	0.00071					
Tungsten (W)-Total	mg/L	-	-	-	-	0.00045					
Uranium (U)-Total	mg/L	-	0.0085	-	-	0.00818			Working guideline status		
Vanadium (V)-Total	mg/L	-	-	-	0.050	< 0.00050					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	0.010	< 0.0030					
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00020					
Dissolved Metals											
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0091					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	0.00026					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00098					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00607					
Beryllium (Be)-Dissolved	mg/L	-	-	-	-	< 0.000100					
Bismuth (Bi)-Dissolved	mg/L	-	-	-	-	< 0.000050					
Boron (B)-Dissolved	mg/L	-	-	-	-	0.017					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note US1 (background) guideline = 0.000054	Varies with hardness, see note US1 (background) guideline = 0.000096	-	-	0.0000054		Guideline is hardness dependent. Guideline is appilcable to water hardness between 7.0 and 455 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(1.03 * (LN(hardness)) - 5.274)/1000) Lowest value for guideline is 0.000018 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.	Guideline is hardness dependent. Guideline is applicable to hardness between 3.4 and 285 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(0.736 * (LN(hardness)) - 4.943)/1000) Lowest value for guiedeline 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	-	-	20.5	Water treatment process has been increasing the Ca levels based on the levels seen at US1 site. Although this is not causing harm, but the treatment facility should be informed and asked to keep the levels like that of observed at US1. The WLNG EOP sample has low sensitivity to acid inputs (i.e. high buffering capacity).		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	-	-	-	-	0.00003					
Chromium (Cr)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Cobalt (Co)-Dissolved	mg/L	-	-	-	-	< 0.00010					
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note US1 (background) guideline = 0.0020	Guideline varies with other parameters, see note US1 (background) guideline = 0.0011 5-week discrete sampling averages = EOP (0.0003), US1 (0.0011), DS1 (0.0007)	-	-	< 0.00020		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	-	-	-	-	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	0.0065					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.988					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00466					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.0165					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	2.77					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00588					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	0.000084					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	6.24					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	3.88					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.047					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	1.68					
Tellurium (Te)-Dissolved	mg/L	-	-	-	-	< 0.00020					
Thallium (Tl)-Dissolved	mg/L	-	-	-	-	0.00002					
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	-	-	-	-	0.00036					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.00472					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness US1 (background) guideline = 0.009	Varies with pH, DOC, hardness US1 (background) guideline = 0.0063 5-week discrete sampling average = EOP (0.0036), US1 (0.0016), DS1 (0.0024)	-	-	0.0032		Guideline varies with DOC and hardness. Guideline is calculated using the following formula: Guideline = (EXP((0.833 * (LN(hardness))) + (0.24 * (LN(DOC))) + 0.526)/2/1000) If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.	Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated using the following formula: Guideline = (EXP((0.974 * (LN(hardness))) - (0.815 * pH) + (0.398 * (LN(DOC))) + 4.625)/2/1000) Guideline only applies to water with pH between 6.5 and 8.13, DOC between 0.3 and 22.9 mg/L, anmd hardness between 23.4 and 399 mg/L. If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.		
Zirconium (Zr)-Dissolved	mg/L	-	-	-	-	< 0.00020					
Volatile Organic Compounds											
Chlorobenzene	µg/L	-	-	-	-	< 0.50					
Chloromethane	µg/L	-	-	-	-	< 5.0					
Dichlorobenzene, 1,2-	µg/L	-	0.7	-	42	< 0.50			Working guideline status		Working guideline status
Dichlorobenzene, 1,3-	µg/L	-	150	-	-	< 0.50			Working guideline status		
Dichlorobenzene, 1,4-	µg/L	-	26	-	-	< 0.50			Working guideline status		
Dichloropropane, 1,2-	µg/L	-	-	-	-	< 0.50					
Dichloropropylene, cis+trans-1,3-	µg/L	-	-	-	-	< 0.75					
Dichloropropylene, cis-1,3-	µg/L	-	-	-	-	< 0.50					
Tetrachloroethane, 1,1,1,2-	µg/L	-	-	-	-	< 0.50					
Tetrachloroethane, 1,1,2,2-	µg/L	-	-	-	-	< 0.20					
Trichloroethane, 1,1,2-	µg/L	-	-	-	-	< 0.50					
Trichlorofluoromethane	µg/L	-	-	-	-	< 0.50					
Carbon tetrachloride	µg/L	-	-	-	-	< 0.50					
Chloroethane	µg/L	-	-	-	-	< 0.50					
Dichloroethane, 1,1-	µg/L	-	-	-	-	< 0.50					
Dichloroethane, 1,2-	µg/L	-	100	-	-	< 0.50			Working guideline status		
Dichloroethylene, 1,1-	µg/L	-	-	-	-	< 0.50					
Dichloroethylene, cis-1,2-	µg/L	-	-	-	-	< 0.50					
Dichloroethylene, trans-1,2-	µg/L	-	-	-	-	< 0.50					
Dichloromethane	µg/L	-	98.1	-	-	< 1.00			Working guideline status		
Dichloropropylene, trans-1,3-	µg/L	-		-	-	< 0.50					
Tetrachloroethylene	µg/L	-	110	-	-	< 0.50			Working guideline status		
Trichloroethane, 1,1,1-	µg/L	-	-	-	-	< 0.50					
Trichloroethylene	µg/L	-	21	-	-	< 0.50			Working guideline status		
Vinyl chloride	µg/L	-	-	-	-	< 0.40					
Benzene	µg/L	-	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	-	440	-	< 0.50					
Styrene	µg/L	-	72	-	-	< 0.50			Working guideline status		
Toluene	µg/L	-	0.5	-	-	< 0.40					
Xylene, m+p-	µg/L	-	-	-	-	< 0.40					
Xylene, o-	µg/L	-	-	-	-	< 0.30					
Xylenes, total	µg/L	-	30	-	-	< 0.50					
Bromodichloromethane	µg/L	-	-	-	-	< 0.50					
Bromoform	µg/L	-	-	-	-	< 0.50					
Chloroform	µg/L	-	1.8	-	-	< 0.50			Working guideline status		
Dibromochloromethane	µg/L	-	-	-	-	< 0.50					
Hydrocarbons											
EPH (C10-C19)	µg/L	-	-	-	-	< 250					
EPH (C19-C32)	µg/L	-	-	-	-	< 250					
VHw (C6-C10)	µg/L	-	-	-	-	< 100					
VPHw	µg/L	-	-	-	-	< 100					
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	µg/L	-	6	-	6	< 0.010					
Acenaphthylene	µg/L	-	-	-	-	< 0.010					
Acridine	µg/L	-	-	-	-	< 0.010					
Anthracene	µg/L	0.1	4	-	-	< 0.010					
Benz(a)anthracene	µg/L	0.1	0.1	-	-	< 0.010					
Benzo(a)pyrene	µg/L	-	0.01	-	0.01	< 0.0050					
Benzo(b+j)fluoranthene	µg/L	-	-	-	-	< 0.010					
Benzo(b+j+k)fluoranthene	µg/L	-	-	-	-	< 0.015					
Benzo(g,h,i)perylene	µg/L	-	-	-	-	< 0.010					
Benzo(k)fluoranthene	µg/L	-	-	-	-	< 0.010					
Chrysene	µg/L	-	-	-	0.1	< 0.010					
Dibenz(a,h)anthracene	µg/L	-	-	-	-	< 0.0050					
Fluoranthene	µg/L	0.2	4	-	-	< 0.010		Guideline is for phototoxic effects			
Fluorene	µg/L	-	12	-	-	< 0.010					
Indeno(1,2,3-c,d)pyrene	µg/L	-	-	-	-	< 0.010					
Methylnaphthalene, 1-	µg/L	-	-	-	1	0.03					Guideline is for total methylated napthalene and is presented here for reference.
Methylnaphthalene, 2-	µg/L	-	-	-	1	0.023					Guideline is for total methylated napthalene and is presented here for reference.
Naphthalene	µg/L	-	1	-	1	< 0.050					
Phenanthrene	µg/L	-	0.3	-	-	< 0.020					
Pyrene	µg/L	0.02	-	-	-	< 0.010					
Quinoline	µg/L	-	3.4	-	-	< 0.050		Working guideline status			
Glycols											
Ethylene glycol	mg/L	-	192	-	-	< 5.0					
Propylene glycol, 1,2-	mg/L	-	500	-	-	< 5.0					
Applied Guideline:		**British Columbia Approved and Working Water Quality Guidelines (NOV 2023) - BCAWWQG - Freshwater Aquatic Life** **British Columbia Approved and Working Water Quality Guidelines (NOV 2023) - BCAWWQG - Marine Aquatic Life**									
Color Key:	**Exceeds both FAL and MAL Guidelines**	**Exceeds FAL Short term Guideline**	***Exceeds FAL Long term Guideline***	**Exceeds MAL Short term Guideline**	***Exceeds MAL Long term Guideline***						
Color Key:		**Exceeds FAL Short and Long-Term Guideline**		**Exceeds MAL Short and Long-term Guidelines**							

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

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

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

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

Parameters Used to Calculate Guidelines

Analyte	Units	Measurement method	Values: WLNG EOP	Values: WLNG US 10-Sep-2024
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations	7.33	7.12
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations	19.1 (5 weeks average 18.5)	16.2
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations	0.04	0.03
Hardness (as CaCO3) (total)	mg/L	Laboratory tested total hardness taken at each respective sample site on the day of sampling used in guideline calculations	55	9.9
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations	0.5	2.29
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations	62.9	9.8
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations	1.18	0.75
Total Suspended Solids	mg/L	Laboratory tested total suspended solids tested at the lab used in guideline calculations	3	< 3.0

Woodfibre Site Sample Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order	: **VA24C3627**			
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver	
Contact	:	Account Manager		
Address	:	Address		
Telephone	:	Telephone		
Project	: 11964	Date Samples Received	: 10-Sep-2024 18:15	
PO	: 11964 - Task 30 - Phase 3C -4C	Date Analysis Commenced	: 12-Sep-2024	
C-O-C number	: ----	Issue Date	: 19-Sep-2024 23:54	
Sampler	: ----			
Site	: Water Analysis			
Quote number	: VA23-TRIT100-012			
No. of samples received	: 1			
No. of samples analysed	: 1			

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
		Metals, Burnaby, British Columbia
		Inorganics, Edmonton, Alberta
		Inorganics, Burnaby, British Columbia
		Organics, Calgary, Alberta
		Metals, Waterloo, Ontario
		Inorganics, Waterloo, Ontario
		Organics, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Organics, Calgary, Alberta
		Metals, Burnaby, British Columbia
		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
µS/cm	microsiemens per centimetre
pH units	pH units
°C	degrees celsius
-	no units

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

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

Qualifiers

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
SP	Sample was preserved at the laboratory.

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	WLNG EOP Tank	----	----	----	----
				Client sampling date / time	10-Sep-2024 10:49	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C3627-001	----	----	----	----
					Result	----	----	----	----
Field Tests									
Conductivity, field	----	EF001/VA	0.10	µS/cm	162.00	----	----	----	----
pH, field	----	EF001/VA	0.10	pH units	7.33	----	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	19.1	----	----	----	----
Physical Tests									
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	55.2	----	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	55.0	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	103	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	62.9	----	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0187	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	----	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	1.18	----	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.266	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.0102	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	0.0013	----	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.128	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0028	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	5.15	----	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	<0.50	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID: WLNG EOP Tank	----	----	----	----
					Client sampling date / time: 10-Sep-2024 10:49	----	----	----	----
					VA24C3627-001	----	----	----	----
					Result	----	----	----	----
Total Sulfides									
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	----	----	----	----
Sulfide, un-ionized (as H2S), from total	7783-06-4	EC395/VA	0.0015	mg/L	<0.0015	----	----	----	----
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	----	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.0320	----	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	0.00029	----	----	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00116	----	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.00605	----	----	----	----
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	0.018	----	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	<0.0000100 DLM	----	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	20.4	----	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000035	----	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L	0.021	----	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	<0.000050	----	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.0066	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	1.00	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID: WLNG EOP Tank	----	----	----	----
					Client sampling date / time: 10-Sep-2024 10:49	----	----	----	----
					VA24C3627-001	----	----	----	----
					Result	----	----	----	----
Total Metals									
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.00370	----	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.0178	----	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	<0.050	----	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	2.96	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.00577	----	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	0.000091	----	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	6.17	----	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	----	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	3.90	----	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	0.0470	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	1.89	----	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	<0.00020	----	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	0.000018	----	----	----	----
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	0.00071	----	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	0.00045	----	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.00818	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID: WLNG EOP Tank	----	----	----	----
					Client sampling date / time: 10-Sep-2024 10:49	----	----	----	----
					VA24C3627-001	----	----	----	----
					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	----	----	----	----
Dissolved Metals									
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.0091	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	0.00026	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L	0.00098	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.00607	----	----	----	----
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	0.017	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	0.0000054	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	20.5	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.000030	----	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L	<0.00050	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L	<0.00020	----	----	----	----
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	0.0065	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	0.988	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.00466	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID	WLNG EOP Tank	----	----	----	----
					Client sampling date / time	10-Sep-2024 10:49	----	----	----	----
						VA24C3627-001	----	----	----	----
						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		0.0165	----	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		<0.00050	----	----	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		2.77	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00588	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		0.000084	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		6.24	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		3.88	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0470	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		1.68	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		0.000020	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	----	----	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	----	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		<0.00030	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		0.00036	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.00472	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		<0.00050	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0032	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP Tank	----	----	----	----
					Client sampling date / time	10-Sep-2024 10:49	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit		VA24C3627-001	----	----	----	----
						Result	----	----	----	----
Dissolved Metals										
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Field	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Field	----	----	----	----
Speciated Metals										
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/WT	0.00050	mg/L		<0.00050	----	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/WT	0.00050	mg/L		<0.00050	----	----	----	----
Aggregate Organics										
Phenols, total (4AAP)	----	E562/EO	0.0010	mg/L		<0.0010 SP	----	----	----	----
Volatile Organic Compounds										
Chlorobenzene	108-90-7	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Chloromethane	74-87-3	E611C/VA	5.0	µg/L		<5.0	----	----	----	----
Dichlorobenzene, 1,2-	95-50-1	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichlorobenzene, 1,3-	541-73-1	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichlorobenzene, 1,4-	106-46-7	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloropropane, 1,2-	78-87-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloropropylene, cis+trans-1,3-	542-75-6	E611C/VA	0.75	µg/L		<0.75	----	----	----	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C/VA	0.20	µg/L		<0.20	----	----	----	----
Trichloroethane, 1,1,2-	79-00-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Trichlorofluoromethane	75-69-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP Tank	----	----	----	----
					Client sampling date / time	10-Sep-2024 10:49	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C3627-001	----	----	----	----	
					Result	----	----	----	----	
Volatile Organic Compounds [Drycleaning]										
Carbon tetrachloride	56-23-5	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Chloroethane	75-00-3	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Dichloroethane, 1,1-	75-34-3	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Dichloroethane, 1,2-	107-06-2	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Dichloroethylene, 1,1-	75-35-4	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Dichloroethylene, cis-1,2-	156-59-2	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Dichloroethylene, trans-1,2-	156-60-5	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Dichloromethane	75-09-2	E611C/VA	1.0	µg/L	<1.0	----	----	----	----	
Dichloropropylene, trans-1,3-	10061-02-6	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Tetrachloroethylene	127-18-4	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Trichloroethane, 1,1,1-	71-55-6	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Trichloroethylene	79-01-6	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Vinyl chloride	75-01-4	E611C/VA	0.40	µg/L	<0.40	----	----	----	----	
Volatile Organic Compounds [Fuels]										
Benzene	71-43-2	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Ethylbenzene	100-41-4	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Styrene	100-42-5	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
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	----	----	----	----	

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	Client sample ID: WLNG EOP Tank	----	----	----	----
					Client sampling date / time: 10-Sep-2024 10:49	----	----	----	----
					VA24C3627-001	----	----	----	----
					Result	----	----	----	----
Volatile Organic Compounds [Fuels]									
Xylenes, total	1330-20-7	E611C/VA	0.50	µg/L	<0.50	----	----	----	----
Volatile Organic Compounds [THMs]									
Bromodichloromethane	75-27-4	E611C/VA	0.50	µg/L	<0.50	----	----	----	----
Bromoform	75-25-2	E611C/VA	0.50	µg/L	<0.50	----	----	----	----
Chloroform	67-66-3	E611C/VA	0.50	µg/L	<0.50	----	----	----	----
Dibromochloromethane	124-48-1	E611C/VA	0.50	µg/L	<0.50	----	----	----	----
Hydrocarbons									
EPH (C10-C19)	----	E601A/CG	250	µg/L	<250	----	----	----	----
EPH (C19-C32)	----	E601A/CG	250	µg/L	<250	----	----	----	----
VHw (C6-C10)	----	E581.VH+F1/VA	100	µg/L	<100	----	----	----	----
HEPHw	----	EC600A/CG	250	µg/L	<250	----	----	----	----
LEPHw	----	EC600A/CG	250	µg/L	<250	----	----	----	----
VPHw	----	EC580A/VA	100	µg/L	<100	----	----	----	----
Hydrocarbons Surrogates									
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/CG	1.0	%	93.0	----	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%	74.2	----	----	----	----
Volatile Organic Compounds Surrogates									
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%	79.7	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611C/VA	1.0	%	97.1	----	----	----	----
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	83-32-9	E641A/CG	0.010	µg/L	<0.010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	WLNG EOP Tank	----	----	----	----
				Client sampling date / time	10-Sep-2024 10:49	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C3627-001	----	----	----	----
					Result	----	----	----	----
Polycyclic Aromatic Hydrocarbons									
Acenaphthylene	208-96-8	E641A/CG	0.010	µg/L	<0.010	----	----	----	----
Acridine	260-94-6	E641A/CG	0.010	µg/L	<0.010	----	----	----	----
Anthracene	120-12-7	E641A/CG	0.010	µg/L	<0.010	----	----	----	----
Benz(a)anthracene	56-55-3	E641A/CG	0.010	µg/L	<0.010	----	----	----	----
Benzo(a)pyrene	50-32-8	E641A/CG	0.0050	µg/L	<0.0050	----	----	----	----
Benzo(b+j)fluoranthene	n/a	E641A/CG	0.010	µg/L	<0.010	----	----	----	----
Benzo(b+j+k)fluoranthene	n/a	E641A/CG	0.015	µg/L	<0.015	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	E641A/CG	0.010	µg/L	<0.010	----	----	----	----
Benzo(k)fluoranthene	207-08-9	E641A/CG	0.010	µg/L	<0.010	----	----	----	----
Chrysene	218-01-9	E641A/CG	0.010	µg/L	<0.010	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	E641A/CG	0.0050	µg/L	<0.0050	----	----	----	----
Fluoranthene	206-44-0	E641A/CG	0.010	µg/L	<0.010	----	----	----	----
Fluorene	86-73-7	E641A/CG	0.010	µg/L	<0.010	----	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/CG	0.010	µg/L	<0.010	----	----	----	----
Methylnaphthalene, 1-	90-12-0	E641A/CG	0.010	µg/L	0.030	----	----	----	----
Methylnaphthalene, 2-	91-57-6	E641A/CG	0.010	µg/L	0.023	----	----	----	----
Naphthalene	91-20-3	E641A/CG	0.050	µg/L	<0.050	----	----	----	----
Phenanthrene	85-01-8	E641A/CG	0.020	µg/L	<0.020	----	----	----	----
Pyrene	129-00-0	E641A/CG	0.010	µg/L	<0.010	----	----	----	----
Quinoline	91-22-5	E641A/CG	0.050	µg/L	<0.050	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP Tank	----	----	----	----
					Client sampling date / time	10-Sep-2024 10:49	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C3627-001	----	----	----	----	
					Result	----	----	----	----	
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A/CG	0.1	%	81.6	----	----	----	----	
Naphthalene-d8	1146-65-2	E641A/CG	0.1	%	81.4	----	----	----	----	
Phenanthrene-d10	1517-22-2	E641A/CG	0.1	%	83.4	----	----	----	----	
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	%	99.5	----	----	----	----	

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	: **VA24C3627**	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	: 10-Sep-2024 18:15
PO	: 11964 - Task 30 - Phase 3C -4C	Issue Date	: 19-Sep-2024 09:15
C-O-C number	: ----		
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- 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
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) WLNG EOP Tank	E562	10-Sep-2024	16-Sep-2024	28 days	6 days	✓	16-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG EOP Tank	E298	10-Sep-2024	12-Sep-2024	28 days	2 days	✓	13-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG EOP Tank	E235.Br-L	10-Sep-2024	13-Sep-2024	28 days	3 days	✓	13-Sep-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG EOP Tank	E235.Cl	10-Sep-2024	13-Sep-2024	28 days	3 days	✓	13-Sep-2024	28 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG EOP Tank	E235.F	10-Sep-2024	13-Sep-2024	28 days	3 days	✓	13-Sep-2024	28 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG EOP Tank	E235.NO3-L	10-Sep-2024	13-Sep-2024	3 days	3 days	✓	13-Sep-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG EOP Tank	E235.NO2-L	10-Sep-2024	13-Sep-2024	3 days	3 days	✓	13-Sep-2024	3 days	3 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
WLNG EOP Tank	E235.SO4	10-Sep-2024	13-Sep-2024	28 days	3 days	✓	13-Sep-2024	28 days	3 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
WLNG EOP Tank	E366	10-Sep-2024	12-Sep-2024	28 days	2 days	✓	13-Sep-2024	28 days	3 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG EOP Tank	E372-U	10-Sep-2024	12-Sep-2024	28 days	2 days	✓	13-Sep-2024	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
WLNG EOP Tank	E509	10-Sep-2024	18-Sep-2024	28 days	8 days	✓	18-Sep-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
WLNG EOP Tank	E421	10-Sep-2024	18-Sep-2024	180 days	8 days	✓	19-Sep-2024	180 days	9 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
WLNG EOP Tank	EF001	10-Sep-2024	----	----	----		13-Sep-2024	----	3 days	
Glycols : Glycols (4 analytes) by GC-FID										
Glass vial										
WLNG EOP Tank	E680E	10-Sep-2024	14-Sep-2024	7 days	4 days	✓	16-Sep-2024	40 days	2 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate)										
WLNG EOP Tank	E601A	10-Sep-2024	12-Sep-2024	14 days	2 days	✓	12-Sep-2024	40 days	0 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate)										
WLNG EOP Tank	E581.VH+F1	10-Sep-2024	13-Sep-2024	14 days	3 days	✓	13-Sep-2024	14 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 EOP Tank	E358-L	10-Sep-2024	12-Sep-2024	28 days	2 days	✓	12-Sep-2024	28 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG EOP Tank	E290	10-Sep-2024	13-Sep-2024	14 days	3 days	✓	13-Sep-2024	14 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG EOP Tank	E162	10-Sep-2024	----	----	----		17-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG EOP Tank	E160	10-Sep-2024	----	----	----		17-Sep-2024	7 days	7 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate)										
WLNG EOP Tank	E641A	10-Sep-2024	12-Sep-2024	14 days	2 days	✓	12-Sep-2024	40 days	0 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
WLNG EOP Tank	E532	10-Sep-2024	----	----	----		13-Sep-2024	28 days	3 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
WLNG EOP Tank	E508	10-Sep-2024	18-Sep-2024	28 days	8 days	✓	18-Sep-2024	28 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
WLNG EOP Tank	E420	10-Sep-2024	17-Sep-2024	180 days	7 days	✓	18-Sep-2024	180 days	8 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG EOP Tank	E395	10-Sep-2024	----	----	----		12-Sep-2024	7 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
WLNG EOP Tank	E611C	10-Sep-2024	13-Sep-2024	14 days	3 days	✓	13-Sep-2024	14 days	3 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1648911	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	1647336	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1648915	1	11	9.0	5.0	✓
Chloride in Water by IC	E235.Cl	1648914	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1657248	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1650119	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1647338	1	6	16.6	5.0	✓
Fluoride in Water by IC	E235.F	1648913	1	13	7.6	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1651392	1	10	10.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1648916	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1648917	1	18	5.5	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1653457	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1648918	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	1656707	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1650301	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1657287	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1648491	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1647337	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1647335	1	17	5.8	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1647386	1	7	14.2	5.0	✓
TSS by Gravimetry	E160	1656684	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1648981	1	11	9.0	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1648982	1	6	16.6	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1648911	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	1647336	1	20	5.0	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1647793	1	7	14.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1648915	1	11	9.0	5.0	✓
Chloride in Water by IC	E235.Cl	1648914	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1657248	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1650119	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1647338	1	6	16.6	5.0	✓
Fluoride in Water by IC	E235.F	1648913	1	13	7.6	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1651392	1	10	10.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1648916	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1648917	1	18	5.5	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
PAHs in Water by Hexane LVI GC-MS	E641A	1647792	1	16	6.2	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1653457	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1648918	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	1656707	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1650301	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1657287	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1648491	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1647337	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1647335	1	17	5.8	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1647386	1	7	14.2	5.0	✓
TSS by Gravimetry	E160	1656684	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1648981	1	11	9.0	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1648982	1	6	16.6	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1648911	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	1647336	1	20	5.0	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1647793	1	7	14.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1648915	1	11	9.0	5.0	✓
Chloride in Water by IC	E235.Cl	1648914	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1657248	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1650119	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1647338	1	6	16.6	5.0	✓
Fluoride in Water by IC	E235.F	1648913	1	13	7.6	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1651392	1	10	10.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1648916	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1648917	1	18	5.5	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1647792	1	16	6.2	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1653457	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1648918	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	1656707	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1650301	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1657287	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1648491	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1647337	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1647335	1	17	5.8	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1647386	1	7	14.2	5.0	✓
TSS by Gravimetry	E160	1656684	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1648981	1	11	9.0	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1648982	1	6	16.6	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1647336	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1648915	1	11	9.0	5.0	✓
Chloride in Water by IC	E235.Cl	1648914	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1657248	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1650119	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1647338	1	6	16.6	5.0	✓
Fluoride in Water by IC	E235.F	1648913	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1648916	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1648917	1	18	5.5	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1653457	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1648918	1	16	6.2	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1650301	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1657287	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1648491	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1647337	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1647335	1	17	5.8	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1647386	1	7	14.2	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1648981	1	11	9.0	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1648982	1	6	16.6	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.
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 - Calgary	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 - Calgary	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.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Un-ionized Total Hydrogen Sulfide (calculated)	EC395 ALS Environmental - Vancouver	Water	APHA 4500 -S H	Un-ionized sulfide is calculated using results from total sulfide analysis, pH, temperature, and ionic strength of the sample. Calculation of un-ionized sulfide using total sulfide concentrations may be biased high due to particulate forms of sulfide measured during total sulfide testing.
Total Trivalent Chromium (Cr III) by Calculation	EC535 ALS Environmental - 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 - Calgary	Water	BC MOE Lab Manual (LEPH and HEPH)	Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are calculated as follows: LEPH = Extractable Petroleum Hydrocarbons (EPH10-19) minus Acenaphthene, Acridine, Anthracene, Fluorene, Naphthalene and Phenanthrene; HEPH = Extractable Petroleum Hydrocarbons (EPH19-32) minus Benz(a)anthracene, Benzo(a)pyrene, Fluoranthene, and Pyrene.
Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3 or Chloramine measurements provided by client and recorded on ALS report may affect the validity of results.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Nitrogen in water	EP366 ALS Environmental - Vancouver	Water	APHA 4500-P J (mod)	Samples for total nitrogen analysis are digested using a heated persulfate digestion. Nitrogen compounds are converted to nitrate in this digestion.
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Vancouver	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID.
PHCs and PAHs Hexane Extraction	EP601 ALS Environmental - Calgary	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.

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QUALITY CONTROL REPORT

Work Order	: **VA24C3627**	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	: 10-Sep-2024 18:15
PO	: 11964 - Task 30 - Phase 3C -4C	Date Analysis Commenced	: 12-Sep-2024
C-O-C number	: ----	Issue Date	: 19-Sep-2024 09:15
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
		Vancouver Metals, Burnaby, British Columbia
		Edmonton Inorganics, Edmonton, Alberta
		Vancouver Inorganics, Burnaby, British Columbia
		Calgary Organics, Calgary, Alberta
		Waterloo Inorganics, Waterloo, Ontario
		Waterloo Metals, Waterloo, Ontario
		Vancouver Organics, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Calgary Organics, Calgary, Alberta
		Vancouver Metals, Burnaby, British Columbia
		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: 1648911)											
FJ2402731-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1656684)											
FJ2402724-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1656707)											
FJ2402724-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	162	160	2	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1647335)											
VA24C3435-003	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0432	0.0435	0.808%	20%	----
Anions and Nutrients (QC Lot: 1647336)											
VA24C3435-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0142	0.0142	0.00008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1647337)											
VA24C3679-002	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.072	0.070	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1648913)											
FJ2402731-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1648914)											
FJ2402731-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1648915)											
FJ2402731-001	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: 1648916)											
FJ2402731-001	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: 1648917)											
FJ2402731-001	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: 1648918)											
FJ2402731-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	<0.30	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1647338)											
VA24C3627-001	WLNG EOP Tank	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Sulfides (QC Lot: 1647386)											
VA24C3596-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0075	mg/L	0.0743	0.0746	0.0002	Diff <2x LOR	----
Total Metals (QC Lot: 1648491)											
VA24C3348-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 1648491) - continued											
VA24C3348-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		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	<0.010	<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	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	<0.000050	<0.000050	0	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	<0.050	<0.050	0	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	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	<0.10	<0.10	0	Diff <2x LOR	----
		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	<0.050	<0.050	0	Diff <2x LOR	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	<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: 1648491) - continued											
VA24C3348-001	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: 1657287)											
VA24C3430-003	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1650119)											
FJ2402723-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0019	0.0020	0.00006	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00056	0.00057	0.00001	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00019	0.00018	0.00001	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0704	0.0696	1.14%	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	0.131	0.132	0.280%	20%	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000169	0.0000196	0.0000027	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	138	141	2.16%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	0.000014	0.000004	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00015	0.00015	0.000002	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00055	0.00056	0.000006	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	0.171	0.177	3.94%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	38.9	39.2	0.562%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0210	0.0210	0.0456%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00581	0.00582	0.205%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00469	0.00468	0.000008	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.53	2.53	0.286%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00108	0.00110	0.00002	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.00814	0.00839	3.03%	20%	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.09	3.21	3.75%	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	158	159	0.952%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.258	0.260	0.409%	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: 1650119) - continued											
FJ2402723-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	153	157	2.57%	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	0.000028	0.000030	0.000002	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00919	0.00897	2.44%	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	0.0023	0.0021	0.0001	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: 1657248)											
FJ2402776-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1650301)											
VA24C3563-015	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 1653457)											
VA24C3596-002	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1648982)											
VA24C3586-001	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	2.91	2.39	0.52	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: 1648982) - continued											
VA24C3586-001	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: 1648981)											
FJ2402712-001	Anonymous	VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----
Glycols (QC Lot: 1651392)											
VA24C3627-001	WLNG EOP Tank	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: 1648911)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1656684)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1656707)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1647335)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1647336)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1647337)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1648913)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1648914)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1648915)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1648916)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1648917)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1648918)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Organic / Inorganic Carbon (QCLot: 1647338)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1647386)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1648491)						
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: 1648491) - 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	----
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: 1657287)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1657287) - continued						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1650119)						
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: 1650119) - 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: 1657248)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1650301)						
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	<0.00050	----
Aggregate Organics (QCLot: 1653457)						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
Volatile Organic Compounds (QCLot: 1648982)						
Benzene	71-43-2	E611C	0.5	µg/L	<0.50	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	<0.50	----
Bromoform	75-25-2	E611C	0.5	µg/L	<0.50	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	<0.50	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	<0.50	----
Chloroethane	75-00-3	E611C	0.5	µg/L	<0.50	----
Chloroform	67-66-3	E611C	0.5	µg/L	<0.50	----
Chloromethane	74-87-3	E611C	5	µg/L	<5.0	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	<0.50	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	<0.50	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	<0.50	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	<0.50	----
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	<0.50	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	<0.50	----
Dichloromethane	75-09-2	E611C	1	µg/L	<1.0	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	<0.50	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	<0.50	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	<0.50	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	<0.50	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1648982) - continued						
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	<0.50	----
Styrene	100-42-5	E611C	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	<0.20	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	<0.50	----
Toluene	108-88-3	E611C	0.4	µg/L	<0.40	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	<0.50	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	<0.50	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	<0.50	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	<0.50	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	<0.40	----
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	<0.40	----
Xylene, o-	95-47-6	E611C	0.3	µg/L	<0.30	----
Hydrocarbons (QCLot: 1647793)						
EPH (C10-C19)	----	E601A	250	µg/L	<250	----
EPH (C19-C32)	----	E601A	250	µg/L	<250	----
Hydrocarbons (QCLot: 1648981)						
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1647792)						
Acenaphthene	83-32-9	E641A	0.01	µg/L	<0.010	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	<0.010	----
Acridine	260-94-6	E641A	0.01	µg/L	<0.010	----
Anthracene	120-12-7	E641A	0.01	µg/L	<0.010	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	<0.010	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	<0.0050	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	<0.010	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	<0.010	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	<0.010	----
Chrysene	218-01-9	E641A	0.01	µg/L	<0.010	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	<0.0050	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	<0.010	----
Fluorene	86-73-7	E641A	0.01	µg/L	<0.010	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	<0.010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1647792) - continued						
Naphthalene	91-20-3	E641A	0.05	µg/L	<0.050	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	<0.020	----
Pyrene	129-00-0	E641A	0.01	µg/L	<0.010	----
Quinoline	91-22-5	E641A	0.05	µg/L	<0.050	----
Glycols (QCLot: 1651392)						
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: 1648911)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1656684)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	98.5	85.0	115	----
Physical Tests (QCLot: 1656707)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	109	85.0	115	----
Anions and Nutrients (QCLot: 1647335)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	96.0	80.0	120	----
Anions and Nutrients (QCLot: 1647336)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 1647337)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	96.9	75.0	125	----
Anions and Nutrients (QCLot: 1648913)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1648914)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1648915)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 1648916)									
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: 1648917)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1648918)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Organic / Inorganic Carbon (QCLot: 1647338)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	112	80.0	120	----
Total Sulfides (QCLot: 1647386)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	105	80.0	120	----
Total Metals (QCLot: 1648491)									

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: 1648491) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	99.8	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	104	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	99.1	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	97.4	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	99.2	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	95.3	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	96.9	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	99.8	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	98.5	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	99.3	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	97.3	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	95.4	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	97.3	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	102	80.0	120	----
Manganese, total	7439-96-5	E420	----	mg/L	0.25 mg/L	99.5	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	96.8	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	102	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	104	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	94.8	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	93.4	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	92.5	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	100	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	101	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	91.9	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	99.6	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	92.4	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	99.1	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	99.1	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	91.7	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 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
Total Metals (QCLot: 1648491) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	99.4	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	92.8	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	96.4	80.0	120	----
Total Metals (QCLot: 1657287)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	96.1	80.0	120	----
Dissolved Metals (QCLot: 1650119)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	102	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	99.4	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	107	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	97.1	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	97.6	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	93.7	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	99.7	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	96.0	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	99.6	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	104	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	98.2	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	101	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	87.4	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	100	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	96.2	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	110	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	96.4	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	105	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.6	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	99.3	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	99.1	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	92.9	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	96.4	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: 1650119) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	99.5	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.6	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	97.5	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	94.3	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	96.8	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	100	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	105	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	99.0	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	95.0	80.0	120	----
Speciated Metals (QCLot: 1650301)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	99.3	80.0	120	----
Aggregate Organics (QCLot: 1653457)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	98.6	85.0	115	----
Volatile Organic Compounds (QCLot: 1648982)									
Benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	111	70.0	130	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Bromoform	75-25-2	E611C	0.5	µg/L	100 µg/L	90.1	70.0	130	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	100 µg/L	105	70.0	130	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	100 µg/L	105	70.0	130	----
Chloroethane	75-00-3	E611C	0.5	µg/L	100 µg/L	126	60.0	140	----
Chloroform	67-66-3	E611C	0.5	µg/L	100 µg/L	107	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	96.5	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	94.3	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	100 µg/L	92.0	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	100 µg/L	91.2	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	100 µg/L	106	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	106	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	100 µg/L	107	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	100 µg/L	103	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	99.2	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: 1648982) - continued									
Dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	110	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	114	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	78.5	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	77.2	70.0	130	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	100 µg/L	91.6	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	100 µg/L	128	70.0	130	----
Styrene	100-42-5	E611C	0.5	µg/L	100 µg/L	96.2	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	100 µg/L	96.2	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	90.0	70.0	130	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	89.8	70.0	130	----
Toluene	108-88-3	E611C	0.4	µg/L	100 µg/L	99.1	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	100 µg/L	109	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	100	70.0	130	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	93.1	70.0	130	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	100 µg/L	72.5	60.0	140	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	100 µg/L	107	60.0	140	----
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	200 µg/L	101	70.0	130	----
Xylene, o-	95-47-6	E611C	0.3	µg/L	100 µg/L	94.6	70.0	130	----
Hydrocarbons (QCLot: 1647793)									
EPH (C10-C19)	----	E601A	250	µg/L	6950 µg/L	91.0	70.0	130	----
EPH (C19-C32)	----	E601A	250	µg/L	4230 µg/L	98.2	70.0	130	----
Hydrocarbons (QCLot: 1648981)									
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	75.3	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1647792)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.5 µg/L	97.8	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.5 µg/L	92.5	60.0	130	----
Acridine	260-94-6	E641A	0.01	µg/L	0.5 µg/L	81.6	60.0	130	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.5 µg/L	100	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.5 µg/L	74.1	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.5 µg/L	81.6	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.5 µg/L	78.9	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.5 µg/L	117	60.0	130	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.5 µg/L	96.6	60.0	130	----
Chrysene	218-01-9	E641A	0.01	µg/L	0.5 µg/L	110	60.0	130	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike: Target Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1647792) - continued									
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.5 µg/L	92.0	60.0	130	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.5 µg/L	102	60.0	130	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.5 µg/L	104	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.5 µg/L	85.2	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.5 µg/L	106	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.5 µg/L	108	60.0	130	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.5 µg/L	109	50.0	130	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.5 µg/L	100	60.0	130	----
Pyrene	129-00-0	E641A	0.01	µg/L	0.5 µg/L	97.9	60.0	130	----
Quinoline	91-22-5	E641A	0.05	µg/L	0.5 µg/L	104	60.0	130	----
Glycols (QCLot: 1651392)									
Diethylene glycol	111-46-6	E680E	5	mg/L	25 mg/L	95.6	70.0	130	----
Ethylene glycol	107-21-1	E680E	5	mg/L	25 mg/L	96.6	70.0	130	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	25 mg/L	96.0	70.0	130	----
Triethylene glycol	112-27-6	E680E	5	mg/L	25 mg/L	93.2	70.0	130	----

Matrix Spike (MS) Report

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

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1647335)										
VA24C3435-004	Anonymous	Phosphorus, total	7723-14-0	E372-U	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1647336)										
VA24C3435-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.100 mg/L	0.1 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1647337)										
VA24C3681-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.391 mg/L	0.4 mg/L	97.7	70.0	130	----
Anions and Nutrients (QCLot: 1648913)										
FJ2402733-001	Anonymous	Fluoride	16984-48-8	E235.F	4.90 mg/L	5 mg/L	98.1	75.0	125	----
Anions and Nutrients (QCLot: 1648914)										
FJ2402733-001	Anonymous	Chloride	16887-00-6	E235.Cl	500 mg/L	500 mg/L	100.0	75.0	125	----
Anions and Nutrients (QCLot: 1648915)										
FJ2402733-001	Anonymous	Bromide	24959-67-9	E235.Br-L	2.46 mg/L	2.5 mg/L	98.5	75.0	125	----
Anions and Nutrients (QCLot: 1648916)										
FJ2402733-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	12.4 mg/L	12.5 mg/L	99.6	75.0	125	----
Anions and Nutrients (QCLot: 1648917)										
FJ2402733-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	2.53 mg/L	2.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1648918)										
FJ2402733-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	492 mg/L	500 mg/L	98.4	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1647338)										
VA24C3676-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	4.93 mg/L	5 mg/L	98.6	70.0	130	----
Total Sulfides (QCLot: 1647386)										
VA24C3596-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.177 mg/L	0.2 mg/L	88.7	75.0	125	----
Total Metals (QCLot: 1648491)										
VA24C3348-002	Anonymous	Aluminum, total	7429-90-5	E420	0.185 mg/L	0.2 mg/L	92.4	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0196 mg/L	0.02 mg/L	97.8	70.0	130	----
		Barium, total	7440-39-3	E420	0.0193 mg/L	0.02 mg/L	96.3	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00975 mg/L	0.01 mg/L	97.5	70.0	130	----
		Boron, total	7440-42-8	E420	0.092 mg/L	0.1 mg/L	91.6	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00383 mg/L	0.004 mg/L	95.7	70.0	130	----
		Calcium, total	7440-70-2	E420	3.85 mg/L	4 mg/L	96.2	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00961 mg/L	0.01 mg/L	96.1	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0383 mg/L	0.04 mg/L	95.8	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1648491) - continued										
VA24C3348-002	Anonymous	Cobalt, total	7440-48-4	E420	0.0190 mg/L	0.02 mg/L	95.0	70.0	130	----
		Copper, total	7440-50-8	E420	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		Iron, total	7439-89-6	E420	1.94 mg/L	2 mg/L	97.0	70.0	130	----
		Lead, total	7439-92-1	E420	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0964 mg/L	0.1 mg/L	96.4	70.0	130	----
		Magnesium, total	7439-95-4	E420	0.974 mg/L	1 mg/L	97.4	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0387 mg/L	0.04 mg/L	96.8	70.0	130	----
		Phosphorus, total	7723-14-0	E420	8.78 mg/L	10 mg/L	87.8	70.0	130	----
		Potassium, total	7440-09-7	E420	3.99 mg/L	4 mg/L	99.8	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0385 mg/L	0.04 mg/L	96.3	70.0	130	----
		Silicon, total	7440-21-3	E420	9.80 mg/L	10 mg/L	98.0	70.0	130	----
		Silver, total	7440-22-4	E420	0.00397 mg/L	0.004 mg/L	99.3	70.0	130	----
		Sodium, total	7440-23-5	E420	1.90 mg/L	2 mg/L	94.9	70.0	130	----
		Strontium, total	7440-24-6	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Sulfur, total	7704-34-9	E420	19.8 mg/L	20 mg/L	99.0	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0390 mg/L	0.04 mg/L	97.4	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00374 mg/L	0.004 mg/L	93.4	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Tin, total	7440-31-5	E420	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0373 mg/L	0.04 mg/L	93.2	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0178 mg/L	0.02 mg/L	89.2	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00382 mg/L	0.004 mg/L	95.6	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0955 mg/L	0.1 mg/L	95.5	70.0	130	----
		Zinc, total	7440-66-6	E420	0.381 mg/L	0.4 mg/L	95.3	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0389 mg/L	0.04 mg/L	97.2	70.0	130	----
Total Metals (QCLot: 1657287)										
VA24C3431-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000960 mg/L	0 mg/L	96.0	70.0	130	----
Dissolved Metals (QCLot: 1650119)										
FJ2402723-003	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.209 mg/L	0.2 mg/L	105	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0198 mg/L	0.02 mg/L	99.3	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0226 mg/L	0.02 mg/L	113	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0394 mg/L	0.04 mg/L	98.5	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00887 mg/L	0.01 mg/L	88.7	70.0	130	----
		Boron, dissolved	7440-42-8	E421	ND mg/L	----	ND	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00373 mg/L	0.004 mg/L	93.2	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00992 mg/L	0.01 mg/L	99.2	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0396 mg/L	0.04 mg/L	99.1	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0182 mg/L	0.02 mg/L	91.2	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: 1650119) - continued										
FJ2402723-003	Anonymous	Copper, dissolved	7440-50-8	E421	0.0181 mg/L	0.02 mg/L	90.7	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.92 mg/L	2 mg/L	95.9	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0181 mg/L	0.02 mg/L	90.7	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	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0194 mg/L	0.02 mg/L	96.9	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0368 mg/L	0.04 mg/L	92.1	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	11.7 mg/L	10 mg/L	117	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	4.54 mg/L	4 mg/L	114	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0194 mg/L	0.02 mg/L	96.9	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0462 mg/L	0.04 mg/L	116	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	10.3 mg/L	10 mg/L	103	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00373 mg/L	0.004 mg/L	93.3	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	ND mg/L	----	ND	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0424 mg/L	0.04 mg/L	106	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00347 mg/L	0.004 mg/L	86.7	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0400 mg/L	0.04 mg/L	100	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	ND mg/L	----	ND	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.387 mg/L	0.4 mg/L	96.7	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0407 mg/L	0.04 mg/L	102	70.0	130	----
Dissolved Metals (QCLot: 1657248)										
FJ2402776-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000929 mg/L	0 mg/L	92.9	70.0	130	----
Speciated Metals (QCLot: 1650301)										
VA24C3563-015	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0394 mg/L	0.04 mg/L	98.6	70.0	130	----
Aggregate Organics (QCLot: 1653457)										
VA24C3596-002	Anonymous	Phenols, total (4AAP)	----	E562	0.0217 mg/L	0.02 mg/L	108	75.0	125	----
Volatile Organic Compounds (QCLot: 1648982)										
VA24C3627-001	WLNG EOP Tank	Benzene	71-43-2	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Bromodichloromethane	75-27-4	E611C	94.8 µg/L	100 µg/L	94.8	60.0	140	----
		Bromoform	75-25-2	E611C	93.9 µg/L	100 µg/L	93.9	60.0	140	----
		Carbon tetrachloride	56-23-5	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Chlorobenzene	108-90-7	E611C	105 µg/L	100 µg/L	105	60.0	140	----
		Chloroethane	75-00-3	E611C	129 µg/L	100 µg/L	129	50.0	150	----
		Chloroform	67-66-3	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Chloromethane	74-87-3	E611C	88.9 µg/L	100 µg/L	88.9	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: 1648982) - continued										
VA24C3627-001	WLNG EOP Tank	Dibromochloromethane	124-48-1	E611C	94.2 µg/L	100 µg/L	94.2	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	102 µg/L	100 µg/L	102	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	98.2 µg/L	100 µg/L	98.2	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611C	100 µg/L	100 µg/L	100	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	95.1 µg/L	100 µg/L	95.1	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	93.3 µg/L	100 µg/L	93.3	60.0	140	----
		Dichloromethane	75-09-2	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611C	106 µg/L	100 µg/L	106	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	73.2 µg/L	100 µg/L	73.2	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	67.9 µg/L	100 µg/L	67.9	60.0	140	----
		Ethylbenzene	100-41-4	E611C	86.0 µg/L	100 µg/L	86.0	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	110 µg/L	100 µg/L	110	60.0	140	----
		Styrene	100-42-5	E611C	91.5 µg/L	100 µg/L	91.5	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	95.9 µg/L	100 µg/L	95.9	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	91.6 µg/L	100 µg/L	91.6	60.0	140	----
		Tetrachloroethylene	127-18-4	E611C	91.6 µg/L	100 µg/L	91.6	60.0	140	----
		Toluene	108-88-3	E611C	94.1 µg/L	100 µg/L	94.1	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	104 µg/L	100 µg/L	104	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	97.5 µg/L	100 µg/L	97.5	60.0	140	----
		Trichloroethylene	79-01-6	E611C	87.8 µg/L	100 µg/L	87.8	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611C	102 µg/L	100 µg/L	102	50.0	150	----
		Vinyl chloride	75-01-4	E611C	91.6 µg/L	100 µg/L	91.6	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	90.3 µg/L	100 µg/L	90.3	60.0	140	----
Hydrocarbons (QCLot: 1648981)										
VA24C3243-001	Anonymous	VHw (C6-C10)	----	E581.VH+F1	4440 µg/L	6310 µg/L	70.4	60.0	140	----

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 -

Page of

Canada Toll Free: 1 800 668 9878

ALS www.alsglobal.com

Report To	Contact and company name below will appear on the final report	Reports / Recipients	
Company:	Triton Environmental	Select Report Format:	☒ PDF ☒ EXCEL ☐ EDD (DIGITAL)
Contact:		Merge QC/QCI Reports with COA	☒ YES ☐ NO ☐ N/A
Phone:		☐ Compare Results to Criteria on Report - provide details below if box checked	
	on the final report	Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX
Street:		Email 1 or Fax	
City/Province:		Email 2	
Postal Code:		Email 3	
Invoice To	Same as Report To ☐ YES ☒ NO		
	Copy of Invoice with Report ☐ YES ☒ NO	Select Invoice D	
Company:		Email 1 or Fax	
Contact:		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.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

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: 18-Sept-2024

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

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	VA23-TRIT100-012	AFE/Cost Center:	PO#
Job #:	11964	Major/Minor Code:	Routing Code:
PO / AFE:	11964 - Task 30 - Phase 3C-4C	Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (ALS use only):	C3627	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	Total metals + mercury	Dissolved metals + mercury (F)	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) (P)	Nutrients (ammonia, ammonium, total nitrogen, total phosphorus, phenols) (P)	VOC/VPH (P)	EPH, PAH, LEPH/HEPH (P)	DOC (F/P)	Glycols	General parameters (alkalinity)			SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	~~BCR EOP~~			~~Water~~	~~15~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~					
	~~pH: cond: temp:~~																					
	WLNG EOP Tank	10-Sep-24	10:49	Water	15	R	R	R	R	R	R	R	R	R	R	R	R					
	pH: 7.33 cond: 162 µS/cm temp: 19.1 °C																					
	~~Duplicate~~			~~Water~~	~~15~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~					
	~~Field Blank~~			~~Water~~	~~15~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~					
	~~Trip Blank~~			~~Water~~	~~11~~	~~R~~		~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~		~~R~~	~~R~~					

Environmental Division
Vancouver
Work Order Reference
VA24C3627

Telephone : +1 604 253 4188

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from (Excel COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	
Are samples for human consumption/ use? ☐ YES ☐ NO	ESDAT EDD to ESdat_CA+tritonenv@ESdatLabSync.net

SAMPLE RECEIPT DETAILS (ALS use only)

NONE ☐ ICE ☒ ICE PACKS ☐ FROZEN ☒ COOLING INITIATED

...ts identified on Sample Receipt Notification: ☐ YES ☐ NO

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

...ER TEMPERATURES °C | FINAL COOLER TEMPERATURES °C: 18

SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECE...		FINAL SHIPMENT RECEPTION (ALS use only)		
Date: 10 Sept 24	Time: 17:07	Received by:	Date:	Received by:	Date: Sept 10	Time: 6:15pm

R... NS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY AUG 2020 FRONT

F... lay 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

2024-9-10-Chycoski-9AB51

Project Component:	Tunnel	**Site Name:**	WLNG Treatment Discharge
Inspection Date:	09/10/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.669351 -123.248439
Temperature(c):	Low 15 High 21	**Permit:**	PE 110136
Weather Conditions:	Clear	**Ground Conditions:**	Dry

Observations

Time: 10:49:00 **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:**	No
Nutrients	Yes	**VOC/VPH**	Yes		
DOC	Yes	**EPH, PAH, LEPH/HEPH**	Yes		
		Trout LC50	No		

Logger Maintenance

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

Describe Logger Maintenance

Photos

Photo: 1

Location: WLNG EOP

Description: US view

Photo: 2

Location: WLNG EOP

Description: Across view

Photos

Photo: 3

Location: WLNG EOP

Description: DS view

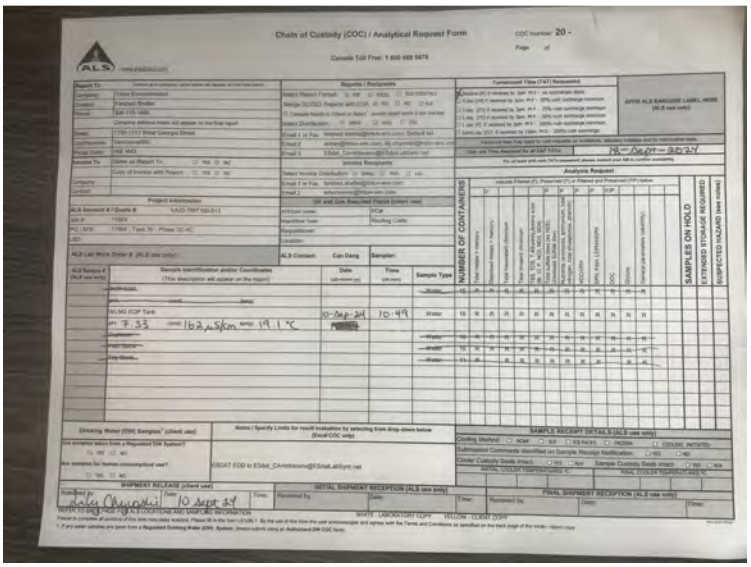

Photo: 4

Location: WLNG EOP

Description: 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	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23th**

Table of Contents:

1. Executive Summary and Field Notes:

The discharged water consistently remained within regulatory guidelines. The turbidity as measured in NTUs met both short-term and long-term standards. Other key parameters, including temperature, pH, salinity, conductivity, and oxidation-reduction potential (ORP), were monitored throughout the discharge process and remained within the prescribed limits. All relevant parameters were measured using YSI instruments and WTP probes. The total discharge volume up to September 9th was 4286 m³.

Daily Volume Summary:

Table 1: Discharge Volumes Daily Summary

Date	Location	Volume (m3)	Comments
September 9	WoodFibre (WF)	284	None
September 10	WF	135	None
September 11	WF	210	None
September 12	WF	227	None
September 13	WF	166	None
September 14	WF	246	None
September 15	WF	265	None
	Total	1452	None

2. Discharge Parameter Summary:

Table 2: Discharge Parameter Summary

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/9/2024	1:30:00	7.3	0.27972	2.4	4286.206	17.7	251
9/9/2024	1:45:00	7.2	0.27216	2.8	4290.289	17.7	252
9/9/2024	2:00:00	7	0.27216	3.2	4294.371	17.7	253
9/9/2024	2:15:00	7.1	0.27972	2.9	4298.431	17.6	255
9/9/2024	2:30:00	7.2	0.27594	2.4	4302.513	17.6	255
9/9/2024	2:45:00	7.3	0.27216	2.4	4306.596	17.6	253
9/9/2024	3:00:00	7.2	0.27594	3.1	4310.655	17.5	250
9/9/2024	3:15:00	7	0.27594	4.3	4314.738	17.5	253
9/9/2024	11:45:00	7.1	0.51408	13.6	4320.51	17	265
9/9/2024	12:00:00	7.3	0.5103	12.8	4327.968	17.1	266
9/9/2024	12:15:00	7.1	0.51786	12	4335.501	17.2	261
9/9/2024	13:45:00	7.1	0.29862	8.7	4343.19	17.7	261
9/9/2024	14:00:00	7.2	0.4725	8	4348.062	17.7	259
9/9/2024	14:15:00	7.1	0.46116	7.2	4354.923	17.9	259
9/9/2024	14:30:00	7.2	0.23436	5.4	4360.351	18.1	259
9/9/2024	14:45:00	7.3	0.37044	3.9	4364.755	18.3	259
9/9/2024	15:00:00	7.1	0.46116	3.7	4370.742	18.5	259
9/9/2024	15:15:00	7.2	0.49518	3.1	4377.69	18.5	259

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/9/2024	15:30:00	7.2	0.9072	2.9	4388.875	18.4	259
9/9/2024	16:00:00	7.1	0.7749	3.1	4406.573	18.1	259
9/9/2024	16:15:00	7.3	0.76356	2.2	4418.14	18.1	260
9/9/2024	16:30:00	7.1	0.76734	2	4429.642	18	260
9/9/2024	16:45:00	7.3	0.75222	1.2	4441.198	18	259
9/9/2024	17:45:00	7.2	0.7371	1.3	4449.09	17.9	261
9/9/2024	18:00:00	7.2	0.74844	1.6	4459.943	17.8	261
9/9/2024	18:30:00	7.2	0.74088	1.7	4478.072	18	262
9/9/2024	18:45:00	7.2	0.74844	1.7	4488.939	17.9	262
9/9/2024	19:00:00	7.2	0.74088	2.5	4499.909	17.9	262
9/9/2024	19:30:00	7.2	0.72954	2.9	4518.499	18.8	257
9/9/2024	19:45:00	7.2	0.73332	2.7	4529.389	19.2	254
9/9/2024	20:00:00	7.1	0.72576	2	4540.275	19.3	251
9/9/2024	20:15:00	7.3	0.43092	1.2	4550.232	19.1	249
9/9/2024	23:00:00	7.3	0.36666	2.6	4555.849	18.4	247
9/9/2024	23:15:00	7.3	0.36666	2	4561.292	18.5	247
9/9/2024	23:30:00	7.3	0.36288	2.2	4565.733	18.6	248
9/9/2024	23:45:00	7.3	0.36288	2.2	4571.177	18.7	248
9/10/2024	0:00:00	7.3	0.36288	2	4576.59	18.8	248
9/10/2024	0:15:00	7.3	0.35532	1.9	4582.033	18.9	248
9/10/2024	0:45:00	7.2	0.3591	1.3	4590.277	19	250

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/10/2024	1:00:00	7.2	0.35154	1.3	4595.72	19.1	250
9/10/2024	1:15:00	7.2	0.3591	1.3	4601.163	19.1	250
9/10/2024	5:15:00	7.2	0.31752	2.4	4603.949	15.3	252
9/10/2024	5:30:00	7.2	0.31752	1.8	4608.686	15.5	256
9/10/2024	5:45:00	7.2	0.20034	2.1	4613.346	15.7	256
9/10/2024	6:00:00	7.2	0.3213	2.5	4619.765	15.9	256
9/10/2024	6:15:00	7.2	0.31752	2.4	4624.528	16.1	256
9/10/2024	6:30:00	7.2	0.31374	3.1	4629.29	16.2	256
9/10/2024	6:45:00	7.2	0.17388	2.2	4633.94	16.3	256
9/10/2024	7:00:00	7.2	0.3024	2.6	4636.718	16.5	258
9/10/2024	7:15:00	7.2	0.31374	2.2	4641.481	16.6	257
9/10/2024	7:30:00	7.2	0.30618	2.4	4646.217	16.7	258
9/10/2024	7:45:00	7.2	0.15876	2.2	4650.859	16.8	258
9/10/2024	8:00:00	7.2	0.31752	1.8	4656.151	17	256
9/10/2024	11:00:00	7.3	0.35532	1.5	4662.025	15.4	253
9/10/2024	11:15:00	7.2	0.38178	1.8	4666.939	15.6	256
9/10/2024	15:00:00	7.2	0.58968	0.4	4677.947	17.5	259
9/10/2024	15:15:00	7.3	0.58212	0	4686.792	17.6	259
9/10/2024	20:15:00	7.1	0.54054	2	4698.283	17.3	259
9/10/2024	20:30:00	7.2	0.54054	2.1	4706.402	17.2	257
9/11/2024	0:30:00	7.1	0.37422	3.1	4711.796	16.6	261

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/11/2024	0:45:00	7.2	0.37422	2.4	4717.266	16.6	261
9/11/2024	1:00:00	7.3	0.378	2.1	4722.743	16.5	258
9/11/2024	1:15:00	7.1	0.38178	2.4	4728.292	16.5	264
9/11/2024	1:30:00	7.1	0.378	2.3	4733.804	16.4	264
9/11/2024	1:45:00	7.2	0.37422	1.9	4739.296	16.3	261
9/11/2024	5:45:00	7.1	0.378	1.7	4744.618	15.6	264
9/11/2024	6:00:00	7.2	0.378	1.3	4750.129	15.5	264
9/11/2024	6:15:00	7.3	0.13608	1.2	4755.232	15.5	262
9/11/2024	6:45:00	7.1	0.37044	2.7	4758.612	15.5	267
9/11/2024	7:00:00	7.1	0.37422	1.6	4764.025	15.5	266
9/11/2024	7:15:00	7.2	0.37044	1.3	4769.468	15.5	263
9/11/2024	7:30:00	7.3	0.36288	1.1	4774.919	15.5	261
9/11/2024	7:45:00	7.1	0.36666	1	4780.339	15.5	268
9/11/2024	8:00:00	7.1	0.37044	1	4785.798	15.5	271
9/11/2024	8:15:00	7.2	0.40446	2.1	4791.536	15.4	264
9/11/2024	9:00:00	7.1	0.44604	3.1	4794.994	15.5	267
9/11/2024	9:15:00	7.2	0.44982	2.9	4801.458	15.6	268
9/11/2024	10:00:00	7.1	0.49518	3.3	4807.241	15.8	268
9/11/2024	10:15:00	7.2	0.48762	2.4	4814.56	15.9	262
9/11/2024	10:45:00	7.1	0.48762	2	4822.399	15.9	263
9/11/2024	12:15:00	7.3	0.53298	1.9	4851.895	16.8	263

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/12/2024	0:45:00	7.2	0.51408	3.8	4860.604	16.5	263
9/12/2024	1:00:00	7.3	0.58212	2.6	4867.249	16.4	263
9/12/2024	1:15:00	7.1	0.57078	4	4871.524	16.4	263
9/12/2024	1:30:00	7.2	0.57456	2	4880.26	16.6	263
9/12/2024	1:45:00	7.2	0.57834	2.1	4889.105	16.8	266
9/12/2024	2:00:00	7.3	0.58212	2	4897.788	17	266
9/12/2024	2:15:00	7.3	0.57456	3.7	4903.915	16.5	266
9/12/2024	2:30:00	7.1	0.57834	2.7	4912.756	16.2	266
9/12/2024	2:45:00	7.3	0.58212	2.1	4921.541	16.2	266
9/12/2024	3:00:00	7.1	0.57456	2.4	4930.371	16.1	266
9/12/2024	3:15:00	7.2	0.567	2.2	4937.134	16.2	266
9/12/2024	3:30:00	7.2	0.55944	2	4945.79	16.4	265
9/12/2024	3:45:00	7.3	0.567	2.2	4954.427	16.6	268
9/12/2024	5:15:00	7.4	0.48384	0.7	4959.844	15.9	266
9/12/2024	5:30:00	7.4	0.48006	0.8	4967.324	16.1	267
9/12/2024	8:15:00	7.2	0.54054	3.1	4977.255	15.6	269
9/12/2024	8:30:00	7.1	0.55188	3.5	4985.193	15.6	269
9/12/2024	9:15:00	7.1	0.54432	3.8	4992.186	15.7	269
9/12/2024	9:30:00	7.2	0.54432	3.2	5000.305	15.8	269
9/12/2024	10:15:00	7.2	0.5481	2.9	5009.487	16.1	269
9/12/2024	21:00:00	7.1	0.5103	1.6	5019.228	17.7	293

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/12/2024	21:15:00	7.1	0.51408	1.1	5026.761	17.7	291
9/12/2024	21:30:00	7.3	0.51786	1	5034.325	17.6	291
9/12/2024	21:45:00	7.4	0.27594	2.6	5037.648	17.4	291
9/12/2024	22:15:00	7.3	0.57834	1.9	5052.703	17.4	291
9/12/2024	22:30:00	7.1	0.58212	1.7	5061.549	17.3	289
9/13/2024	2:45:00	7.1	0.51786	1.3	5071.082	17.3	291
9/13/2024	3:00:00	7.2	0.49896	1.7	5078.823	17.5	291
9/13/2024	3:15:00	7.2	0.32508	2.5	5084.644	16.8	288
9/13/2024	3:30:00	7.2	0.50274	2.7	5091.909	17	289
9/13/2024	3:45:00	7.2	0.49896	3	5099.398	17.1	289
9/13/2024	4:00:00	7.1	0.48384	3.1	5106.825	17.5	289
9/13/2024	4:15:00	7.1	0.30996	3.1	5112.998	17.6	289
9/13/2024	4:30:00	7.1	0.47628	3.1	5120.033	17.7	289
9/13/2024	5:30:00	7.2	0.42714	1.1	5130.087	16.5	291
9/13/2024	5:45:00	7.1	0.42336	0.6	5136.393	16.7	291
9/13/2024	6:00:00	7.5	0.43092	0.4	5142.645	16.7	291
9/13/2024	8:00:00	7.2	0.32508	0.5	5147.252	16.4	294
9/13/2024	8:45:00	7.5	0.41202	1	5154.994	16.7	296
9/13/2024	9:00:00	7.4	0.40446	0.8	5160.335	16.9	296
9/13/2024	9:15:00	7.4	0.1701	0.7	5164.822	16.9	294
9/13/2024	9:30:00	7.4	0.40446	0.6	5170.673	17	296

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/13/2024	9:45:00	7.3	0.40824	0.6	5176.797	17.1	296
9/13/2024	18:45:00	7.1	0.69174	3.4	5184.002	16.9	286
9/13/2024	22:30:00	7.2	0.3969	3.5	5197.073	16.5	283
9/13/2024	22:45:00	7.1	0.3969	2.1	5203.196	16.5	283
9/13/2024	23:00:00	7.3	0.40068	1.4	5209.32	16.5	279
9/13/2024	23:15:00	7	0.40068	1	5215.41	16.5	283
9/13/2024	23:30:00	7.3	0.3969	0.9	5221.533	16.4	279
9/13/2024	23:45:00	7	0.3969	0.8	5227.657	16.4	283
9/14/2024	0:00:00	7.3	0.3969	0.8	5233.746	16.4	279
9/14/2024	0:15:00	7	0.40068	0.7	5239.87	16.3	284
9/14/2024	0:30:00	7.3	0.40068	0.8	5245.994	16.3	279
9/14/2024	3:00:00	7.1	0.48762	2.6	5251.161	16.1	294
9/14/2024	3:15:00	7.1	0.65772	2.7	5257.576	16.3	294
9/14/2024	3:30:00	7.1	0.6615	3.6	5266.78	16.4	294
9/14/2024	3:45:00	7.1	0.6615	2.2	5276.744	16.5	294
9/14/2024	4:00:00	7.1	0.65394	1.5	5286.833	16.7	294
9/14/2024	6:30:00	7.1	0.29862	4.4	5293.947	16	292
9/14/2024	6:45:00	7	0.3024	4.3	5298.392	16.2	292
9/14/2024	7:00:00	7	0.43848	4.1	5303.476	16.4	292
9/14/2024	7:15:00	7.1	0.4347	3.9	5309.906	16.4	294
9/14/2024	7:30:00	7.2	0.42714	4.3	5316.381	16.5	294

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/14/2024	7:45:00	7.3	0.42714	3.6	5322.497	16.6	296
9/14/2024	8:00:00	7.2	0.42336	4.1	5328.802	16.7	296
9/14/2024	8:15:00	7.2	0.4347	3.8	5335.565	16.7	296
9/14/2024	8:30:00	7.2	0.43092	3.8	5342.047	16.8	296
9/14/2024	8:45:00	7.2	0.4347	3.8	5348.847	16.9	296
9/14/2024	9:00:00	7.2	0.4347	3.4	5355.534	17	296
9/14/2024	9:15:00	7.1	0.43092	3.3	5362.198	17.1	296
9/14/2024	9:30:00	7.1	0.4347	3.5	5368.863	17.1	296
9/14/2024	10:00:00	7.4	0.43092	2.6	5381.416	16.9	294
9/14/2024	10:15:00	7.3	0.41958	2.6	5387.672	17	294
9/14/2024	10:30:00	7.3	0.41958	2.7	5393.909	17.1	294
9/14/2024	10:45:00	7.3	0.42336	2.5	5400.066	17.1	294
9/14/2024	11:00:00	7.3	0.43092	2.7	5406.22	17.2	294
9/14/2024	11:15:00	7.3	0.41958	2.2	5412.423	17.3	294
9/14/2024	11:30:00	7.3	0.41958	2.5	5418.554	17.4	294
9/14/2024	11:45:00	7.3	0.41958	2.2	5424.727	17.5	293
9/14/2024	12:00:00	7.3	0.41958	2.4	5430.926	17.6	293
9/14/2024	12:15:00	7.3	0.41958	2.3	5437.035	17.6	294
9/14/2024	12:30:00	7.3	0.41958	2.2	5443.162	17.7	294
9/14/2024	12:45:00	7.3	0.41202	2	5449.297	17.8	294
9/14/2024	13:00:00	7.3	0.40824	2.1	5455.387	17.9	294

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/14/2024	13:15:00	7.3	0.42336	2.2	5461.552	17.9	294
9/14/2024	13:30:00	7.3	0.41958	2.2	5467.691	18	294
9/14/2024	13:45:00	7.3	0	2.7	5473.315	18	293
9/15/2024	2:30:00	7.1	0.2457	2.8	5478.275	15.8	272
9/15/2024	4:45:00	6.9	0.44604	1.3	5490.295	16.3	269
9/15/2024	5:15:00	7.3	0.44226	0.7	5494.994	17.1	264
9/15/2024	5:45:00	7.1	0.4347	2.9	5505.695	15.7	266
9/15/2024	6:00:00	7.2	0.4347	2.2	5509.864	16.6	266
9/15/2024	6:15:00	7.2	0.4347	2.5	5516.487	17.5	264
9/15/2024	6:30:00	7.2	0.42714	1.1	5523.132	16.1	260
9/15/2024	6:45:00	7.1	0.42714	0.7	5529.562	15.6	266
9/15/2024	7:15:00	7	0.42714	0.6	5535.681	16	264
9/15/2024	7:30:00	7.1	0.43848	0.4	5542.077	15.6	264
9/15/2024	7:45:00	7.2	0.42714	0.2	5548.469	15.5	264
9/15/2024	8:00:00	7.2	0.42336	1.2	5551.69	15.5	264
9/15/2024	8:15:00	7.1	0.42336	0.4	5557.927	15.5	264
9/15/2024	8:30:00	7.1	0.42714	0.2	5564.126	15.5	264
9/15/2024	8:45:00	7.2	0.41958	0.2	5570.333	15.5	264
9/15/2024	9:00:00	7	0.42336	0.3	5576.487	15.5	266
9/15/2024	9:15:00	7.3	0.42336	0.2	5582.603	15.5	261
9/15/2024	9:30:00	7	0.43092	0.4	5588.749	15.5	266

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/15/2024	9:45:00	7.2	0.42714	1.1	5594.91	15.4	261
9/15/2024	10:00:00	7	0.41958	1.2	5601.038	15.3	266
9/15/2024	10:15:00	7.2	0.41958	1.5	5607.176	15.4	264
9/15/2024	10:30:00	7.1	0.41958	1.7	5613.311	15.4	263
9/15/2024	10:45:00	7.1	0.4158	2.1	5619.435	15.5	266
9/15/2024	11:00:00	7.2	0.4158	2.5	5625.581	15.5	261
9/15/2024	11:15:00	7.1	0.41958	4	5631.712	15.6	264
9/15/2024	11:30:00	7.2	0.41958	3.9	5637.379	15.9	263
9/15/2024	18:45:00	7.1	0.50652	2.7	5647.868	17.5	270
9/15/2024	19:00:00	7.1	0.49518	2.6	5655.984	17.9	273
9/15/2024	19:15:00	7.1	0.4914	2.9	5663.468	18	273
9/15/2024	19:30:00	7.1	0.48762	3.4	5670.953	18.2	273
9/15/2024	19:45:00	7.1	0.48384	2.7	5678.395	18.3	273
9/15/2024	20:00:00	7.1	0.48762	2.9	5685.88	18.4	273
9/15/2024	20:15:00	7.1	0.48762	2.9	5694.551	18.5	272
9/15/2024	20:30:00	7.1	0.48384	2.1	5701.971	18.6	272
9/15/2024	20:45:00	7.1	0.48762	2.7	5709.418	18.6	273
9/15/2024	21:00:00	7.1	0.48006	2.5	5716.83	18.6	274
9/15/2024	21:15:00	7.1	0.48006	2.7	5724.266	18.6	273
9/15/2024	21:30:00	7.1	0.4725	2.4	5731.474	18.6	275
9/15/2024	21:45:00	7.1	0.17388	1.6	5735.575	18.6	275

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/15/2024	22:00:00	7.1	0.1701	1.9	5738.297	18.5	276

Table 3. In-Situ Parameters

Date	Time	Temperature (°C)	DO (mg/L)	Conductivity (uS/cm)	Salinity (ppt)	ORP (mV)	Visible Sheen
9/09/2024	05:42:48PM	18.8	8.93	144.6	0.07	203.9	No
9/10/2024	08:40:01AM	14.7	9.87	137.1	0.06	231.3	No
9/10/2024	07:40:28PM	17.8	8.81	135.7	0.06	223.1	No
9/11/2024	09:02:38AM	15.5	9.26	146.8	0.07	235.1	No
9/12/2024	08:30:35AM	15.5	9.44	147.1	0.07	213.8	No
9/13/2024	06:43:15PM	15.9	9.47	206.3	0.10	201.8	No
9/14/2024	10:26:10PM	16.5	9.45	158.9	0.08	215.6	No
9/15/2024	08:54:09PAM	15.6	9.28	145.8	0.07	225.8	No

3. Calibration Log:

Table 4. Calibration Log

Date	Unit	pH	Conductivity/Temp.	Salinity	NTU
9/09/2024	YSI	✓	✓	✓	✓
9/13/2024	WTP	✓	✓	N/A	✓

APPENDIX A: WTP LOG

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23th**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/9/2024	0:00:00	7.1	0.27972	7.1	4279.493	Open	Closed	18	251
9/9/2024	0:15:00	7.2	0	4.6	4279.493	Open	Open	18.3	251
9/9/2024	0:30:00	7.3	0.68418	25.4	4279.493	Open	Closed	18.2	249
9/9/2024	0:45:00	7.1	0.8127	108.2	4279.493	Open	Closed	18.1	252
9/9/2024	1:00:00	7.1	0.70308	11.4	4279.493	Open	Closed	18	252
9/9/2024	1:15:00	7.2	0.2835	7.6	4282.26	Open	Open	17.7	252
9/9/2024	1:30:00	7.3	0.27972	2.4	4286.206	Closed	Open	17.7	251
9/9/2024	1:45:00	7.2	0.27216	2.8	4290.289	Closed	Open	17.7	252
9/9/2024	2:00:00	7	0.27216	3.2	4294.371	Closed	Open	17.7	253
9/9/2024	2:15:00	7.1	0.27972	2.9	4298.431	Closed	Open	17.6	255
9/9/2024	2:30:00	7.2	0.27594	2.4	4302.513	Closed	Open	17.6	255
9/9/2024	2:45:00	7.3	0.27216	2.4	4306.596	Closed	Open	17.6	253

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/9/2024	3:00:00	7.2	0.27594	3.1	4310.655	Closed	Open	17.5	250
9/9/2024	3:15:00	7	0.27594	4.3	4314.738	Closed	Open	17.5	253
9/9/2024	3:30:00	7.3	1.85976	126	4316.681	Open	Closed	17	257
9/9/2024	3:45:00	7.1	0.43848	8.7	4316.681	Open	Closed	17.1	256
9/9/2024	4:00:00	7.3	1.2285	100.8	4316.76	Open	Closed	19.5	302
9/9/2024	4:15:00	7.2	0.42714	7.1	4316.76	Open	Closed	17	270
9/9/2024	4:30:00	7.2	1.74258	163.9	4316.76	Open	Closed	16.8	263
9/9/2024	4:45:00	7.3	0.9072	12.7	4316.76	Open	Closed	16.8	262
9/9/2024	5:00:00	7.1	0.27972	9.6	4316.76	Open	Closed	16.9	261
9/9/2024	5:15:00	7	0.31374	9	4316.76	Open	Closed	17	263
9/9/2024	5:30:00	7	0.2835	10.3	4316.76	Open	Closed	17.1	263
9/9/2024	5:45:00	7.1	0	8.3	4316.76	Open	Closed	17.4	265
9/9/2024	6:00:00	7.4	1.30032	16.5	4316.76	Open	Closed	17.4	267

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/9/2024	6:15:00	7.4	0	11.6	4316.76	Open	Closed	16.9	265
9/9/2024	6:30:00	7.3	0	10.2	4316.76	Open	Closed	17.2	265
9/9/2024	6:45:00	7.3	0	10.3	4316.76	Open	Closed	17.5	264
9/9/2024	7:00:00	7.2	1.00926	10	4316.76	Open	Closed	17.3	265
9/9/2024	7:15:00	7.2	0.13608	6.6	4316.76	Open	Closed	16.9	265
9/9/2024	7:30:00	7.4	0	8.5	4316.76	Open	Closed	17	264
9/9/2024	7:45:00	7.5	0	8.5	4316.76	Open	Closed	17.3	264
9/9/2024	8:00:00	7.4	0	7.1	4316.76	Open	Closed	17.5	265
9/9/2024	8:15:00	7.4	0	6.8	4316.76	Open	Closed	17.7	265
9/9/2024	8:30:00	7.4	0	7.3	4316.76	Open	Closed	17.9	267
9/9/2024	8:45:00	7.4	0	7.7	4316.76	Open	Closed	18.1	267
9/9/2024	9:00:00	7.4	0	7	4316.76	Open	Closed	18.3	267
9/9/2024	9:15:00	7.4	0	7.1	4316.76	Open	Closed	18.4	267

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/9/2024	9:30:00	7.4	0	6.8	4316.76	Open	Closed	18.6	268
9/9/2024	9:45:00	7	0.6426	8.3	4316.76	Open	Closed	17.5	263
9/9/2024	10:00:00	7.2	0.60858	5.3	4316.76	Open	Closed	16.7	265
9/9/2024	10:15:00	7.2	0.57078	5.5	4316.76	Open	Closed	16.6	263
9/9/2024	10:30:00	7.1	0.5292	6.2	4316.76	Open	Closed	16.7	264
9/9/2024	10:45:00	7.3	0.53676	5.2	4316.76	Open	Closed	16.9	263
9/9/2024	11:00:00	7.1	0.48006	7.7	4316.76	Open	Closed	16.9	263
9/9/2024	11:15:00	7.2	0.55566	11.1	4316.76	Open	Closed	17	263
9/9/2024	11:30:00	7.3	0.55566	12.3	4316.76	Open	Closed	17	265
9/9/2024	11:45:00	7.1	0.51408	13.6	4320.51	Closed	Open	17	265
9/9/2024	12:00:00	7.3	0.5103	12.8	4327.968	Closed	Open	17.1	266
9/9/2024	12:15:00	7.1	0.51786	12	4335.501	Closed	Open	17.2	261
9/9/2024	12:30:00	7.2	0.1512	9.7	4338.703	Open	Closed	17.4	259

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/9/2024	12:45:00	7.3	0.51408	9.5	4338.703	Open	Closed	17.5	261
9/9/2024	13:00:00	7.2	0.57078	8.5	4338.703	Open	Closed	17.6	261
9/9/2024	13:15:00	7.2	0.58212	7.7	4338.703	Open	Closed	17.6	261
9/9/2024	13:30:00	7.2	0.81648	8.3	4338.703	Open	Closed	17.6	261
9/9/2024	13:45:00	7.1	0.29862	8.7	4343.19	Closed	Open	17.7	261
9/9/2024	14:00:00	7.2	0.4725	8	4348.062	Closed	Open	17.7	259
9/9/2024	14:15:00	7.1	0.46116	7.2	4354.923	Closed	Open	17.9	259
9/9/2024	14:30:00	7.2	0.23436	5.4	4360.351	Closed	Open	18.1	259
9/9/2024	14:45:00	7.3	0.37044	3.9	4364.755	Closed	Open	18.3	259
9/9/2024	15:00:00	7.1	0.46116	3.7	4370.742	Closed	Open	18.5	259
9/9/2024	15:15:00	7.2	0.49518	3.1	4377.69	Closed	Open	18.5	259
9/9/2024	15:30:00	7.2	0.9072	2.9	4388.875	Closed	Open	18.4	259
9/9/2024	15:45:00	7.2	0.49518	10.9	4397.191	Open	Closed	18.3	259

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/9/2024	16:00:00	7.1	0.7749	3.1	4406.573	Closed	Open	18.1	259
9/9/2024	16:15:00	7.3	0.76356	2.2	4418.14	Closed	Open	18.1	260
9/9/2024	16:30:00	7.1	0.76734	2	4429.642	Closed	Open	18	260
9/9/2024	16:45:00	7.3	0.75222	1.2	4441.198	Closed	Open	18	259
9/9/2024	17:00:00	7.2	0.72954	0.7	4448.417	Open	Closed	18.1	259
9/9/2024	17:15:00	7.3	0.73332	0.9	4448.417	Open	Closed	18	261
9/9/2024	17:30:00	7.2	0.72954	1.2	4448.417	Open	Closed	17.9	261
9/9/2024	17:45:00	7.2	0.7371	1.3	4449.09	Closed	Open	17.9	261
9/9/2024	18:00:00	7.2	0.74844	1.6	4459.943	Closed	Open	17.8	261
9/9/2024	18:15:00	7.2	0.40446	12.4	4468.69	Open	Closed	17.9	264
9/9/2024	18:30:00	7.2	0.74088	1.7	4478.072	Closed	Open	18	262
9/9/2024	18:45:00	7.2	0.74844	1.7	4488.939	Closed	Open	17.9	262
9/9/2024	19:00:00	7.2	0.74088	2.5	4499.909	Closed	Open	17.9	262

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23th**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/9/2024	19:15:00	7.2	0.3969	7	4508.916	Open	Closed	18.2	262
9/9/2024	19:30:00	7.2	0.72954	2.9	4518.499	Closed	Open	18.8	257
9/9/2024	19:45:00	7.2	0.73332	2.7	4529.389	Closed	Open	19.2	254
9/9/2024	20:00:00	7.1	0.72576	2	4540.275	Closed	Open	19.3	251
9/9/2024	20:15:00	7.3	0.43092	1.2	4550.232	Closed	Open	19.1	249
9/9/2024	20:30:00	7.3	0	0.4	4550.973	Open	Closed	19.3	251
9/9/2024	20:45:00	7.3	0	0.4	4550.973	Open	Closed	19.8	252
9/9/2024	21:00:00	7.3	0	0.4	4550.973	Open	Closed	20.1	117
9/9/2024	21:15:00	7.3	1.08486	414.1	4550.973	Open	Closed	19.1	116
9/9/2024	21:30:00	7.2	0.57834	414.1	4550.973	Open	Closed	18.5	116
9/9/2024	21:45:00	6.9	0.99414	13.1	4550.973	Open	Closed	18.6	242
9/9/2024	22:00:00	6.9	0	5	4550.973	Open	Closed	18.7	244
9/9/2024	22:15:00	6.9	0	4.5	4550.973	Open	Closed	18.8	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	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/9/2024	22:30:00	6.9	0.41202	5.9	4550.973	Open	Closed	18.9	247
9/9/2024	22:45:00	7.3	0.36666	5.3	4550.973	Open	Closed	18.3	247
9/9/2024	23:00:00	7.3	0.36666	2.6	4555.849	Closed	Open	18.4	247
9/9/2024	23:15:00	7.3	0.36666	2	4561.292	Closed	Open	18.5	247
9/9/2024	23:30:00	7.3	0.36288	2.2	4565.733	Closed	Open	18.6	248
9/9/2024	23:45:00	7.3	0.36288	2.2	4571.177	Closed	Open	18.7	248
9/10/2024	0:00:00	7.3	0.36288	2	4576.59	Closed	Open	18.8	248
9/10/2024	0:15:00	7.3	0.35532	1.9	4582.033	Closed	Open	18.9	248
9/10/2024	0:30:00	7.3	0	7.8	4585.79	Open	Closed	19	248
9/10/2024	0:45:00	7.2	0.3591	1.3	4590.277	Closed	Open	19	250
9/10/2024	1:00:00	7.2	0.35154	1.3	4595.72	Closed	Open	19.1	250
9/10/2024	1:15:00	7.2	0.3591	1.3	4601.163	Closed	Open	19.1	250
9/10/2024	1:30:00	7.2	0	1.4	4603.658	Open	Closed	19.1	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	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/10/2024	1:45:00	7.2	0	1.3	4603.658	Open	Closed	19	251
9/10/2024	2:00:00	7.2	0	9.1	4603.658	Open	Closed	19	250
9/10/2024	2:15:00	7.4	1.67076	76.4	4603.658	Open	Closed	15.6	250
9/10/2024	2:30:00	7.3	0	41.6	4603.658	Open	Closed	15.7	249
9/10/2024	2:45:00	7.2	1.34946	61.7	4603.658	Open	Closed	15.6	250
9/10/2024	3:00:00	7.3	0	17.2	4603.658	Open	Closed	15.6	250
9/10/2024	3:15:00	7.3	0	12.3	4603.658	Open	Closed	15.8	250
9/10/2024	3:30:00	6.8	0	115.9	4603.658	Open	Closed	16	114
9/10/2024	3:45:00	7.4	0	4.3	4603.658	Open	Closed	15.7	255
9/10/2024	4:00:00	7.4	0	4.6	4603.658	Open	Closed	15.9	255
9/10/2024	4:15:00	7.4	0	4.2	4603.658	Open	Closed	16.1	255
9/10/2024	4:30:00	7.4	0	3.9	4603.658	Open	Closed	16.3	255
9/10/2024	4:45:00	7.4	0	4.3	4603.658	Open	Closed	16.4	255

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/10/2024	5:00:00	7.4	0	4.4	4603.658	Open	Closed	16.5	255
9/10/2024	5:15:00	7.2	0.31752	2.4	4603.949	Closed	Open	15.3	252
9/10/2024	5:30:00	7.2	0.31752	1.8	4608.686	Closed	Open	15.5	256
9/10/2024	5:45:00	7.2	0.20034	2.1	4613.346	Closed	Open	15.7	256
9/10/2024	6:00:00	7.2	0.3213	2.5	4619.765	Closed	Open	15.9	256
9/10/2024	6:15:00	7.2	0.31752	2.4	4624.528	Closed	Open	16.1	256
9/10/2024	6:30:00	7.2	0.31374	3.1	4629.29	Closed	Open	16.2	256
9/10/2024	6:45:00	7.2	0.17388	2.2	4633.94	Closed	Open	16.3	256
9/10/2024	7:00:00	7.2	0.3024	2.6	4636.718	Closed	Open	16.5	258
9/10/2024	7:15:00	7.2	0.31374	2.2	4641.481	Closed	Open	16.6	257
9/10/2024	7:30:00	7.2	0.30618	2.4	4646.217	Closed	Open	16.7	258
9/10/2024	7:45:00	7.2	0.15876	2.2	4650.859	Closed	Open	16.8	258
9/10/2024	8:00:00	7.2	0.31752	1.8	4656.151	Closed	Open	17	256

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/10/2024	8:15:00	7.2	0	1.8	4657.368	Open	Closed	17.1	256
9/10/2024	8:30:00	7.5	0.49896	3.1	4657.368	Open	Closed	15	255
9/10/2024	8:45:00	7.2	0.15876	7.2	4657.368	Open	Closed	14.8	256
9/10/2024	9:00:00	7.1	0.48006	37.2	4657.368	Open	Closed	14.9	256
9/10/2024	9:15:00	7.2	0.47628	12.4	4657.368	Open	Closed	14.9	256
9/10/2024	9:30:00	7.3	0.48006	8.5	4657.368	Open	Closed	14.9	255
9/10/2024	9:45:00	7.1	0.21168	22.3	4657.368	Open	Closed	15	256
9/10/2024	10:00:00	7.2	0.52542	12.6	4657.368	Open	Closed	15.1	258
9/10/2024	10:15:00	7.3	0.49896	5.7	4657.368	Open	Closed	15.2	256
9/10/2024	10:30:00	7.1	0.32508	1.2	4657.368	Open	Closed	15.2	258
9/10/2024	10:45:00	7.2	0.13608	1	4657.368	Open	Closed	15.3	256
9/10/2024	11:00:00	7.3	0.35532	1.5	4662.025	Closed	Open	15.4	253
9/10/2024	11:15:00	7.2	0.38178	1.8	4666.939	Closed	Open	15.6	256

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/10/2024	11:30:00	7.1	0.37044	8.1	4672.5	Open	Open	15.7	262
9/10/2024	11:45:00	7.2	0.16254	7.5	4675.244	Open	Closed	15.9	258
9/10/2024	12:00:00	7.3	0.43848	6.4	4675.244	Open	Closed	16.1	258
9/10/2024	12:15:00	7.2	0.50274	13.2	4675.244	Open	Closed	16.2	258
9/10/2024	12:30:00	7.2	0.4914	5.9	4675.244	Open	Closed	16.4	260
9/10/2024	12:45:00	7.3	0	5.5	4675.244	Open	Closed	16.6	260
9/10/2024	13:00:00	7.3	0.58968	30.2	4675.244	Open	Closed	16.6	257
9/10/2024	13:15:00	7.3	0	129.7	4675.244	Open	Closed	16.7	256
9/10/2024	13:30:00	7.1	0.73332	65.8	4675.244	Open	Closed	16.8	117
9/10/2024	13:45:00	7.3	0.34776	9.9	4675.244	Open	Closed	16.9	117
9/10/2024	14:00:00	7.5	0	37.6	4675.244	Open	Closed	17.5	118
9/10/2024	14:15:00	7.2	0.71442	5.6	4675.244	Open	Closed	17.2	252
9/10/2024	14:30:00	7.4	0.71442	5.3	4675.244	Open	Closed	17.4	254

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/10/2024	14:45:00	7.2	0.40068	0.3	4675.244	Open	Closed	17.4	252
9/10/2024	15:00:00	7.2	0.58968	0.4	4677.947	Closed	Open	17.5	259
9/10/2024	15:15:00	7.3	0.58212	0	4686.792	Closed	Open	17.6	259
9/10/2024	15:30:00	7.3	0	0	4691.358	Open	Closed	18	253
9/10/2024	15:45:00	7.3	0	0	4691.358	Open	Closed	18.5	253
9/10/2024	16:00:00	7.3	0	0	4691.358	Open	Closed	19.1	255
9/10/2024	16:15:00	7.2	0	0	4691.358	Open	Closed	19.6	253
9/10/2024	16:30:00	7.2	0	0	4691.358	Open	Closed	20	255
9/10/2024	16:45:00	7.2	0	0	4691.358	Open	Closed	20.3	255
9/10/2024	17:00:00	7.2	0	0	4691.358	Open	Closed	20.6	255
9/10/2024	17:15:00	7.2	0	0	4691.358	Open	Closed	20.8	256
9/10/2024	17:30:00	7.2	0	0	4691.358	Open	Closed	21	256
9/10/2024	17:45:00	7.2	0.29484	3.9	4691.358	Open	Closed	18.2	256

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/10/2024	18:00:00	7.2	0.5292	5.3	4691.358	Open	Closed	17.9	259
9/10/2024	18:15:00	7.3	0	2.7	4691.358	Open	Closed	17.9	253
9/10/2024	18:30:00	7.4	0	0.9	4691.358	Open	Closed	18.3	254
9/10/2024	18:45:00	7.3	0	1.1	4691.358	Open	Closed	18.6	256
9/10/2024	19:00:00	7.3	0	1.1	4691.358	Open	Closed	18.9	254
9/10/2024	19:15:00	7.2	0.51786	5.2	4691.358	Open	Closed	17.7	259
9/10/2024	19:30:00	7.1	0.51408	2.6	4691.358	Open	Closed	17.5	262
9/10/2024	19:45:00	7.3	0.30996	5.7	4691.804	Open	Closed	17.4	254
9/10/2024	20:00:00	7.2	0.54432	5.8	4693.157	Open	Closed	17.3	255
9/10/2024	20:15:00	7.1	0.54054	2	4698.283	Closed	Open	17.3	259
9/10/2024	20:30:00	7.2	0.54054	2.1	4706.402	Closed	Open	17.2	257
9/10/2024	20:45:00	7.4	0.45738	16	4709.442	Open	Closed	17.1	257
9/10/2024	21:00:00	7.1	0.87696	3.3	4709.442	Open	Closed	16.9	258

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/10/2024	21:15:00	7.2	0.88074	3.9	4709.442	Open	Closed	16.9	257
9/10/2024	21:30:00	7.3	0	3.7	4709.442	Open	Closed	17.1	253
9/10/2024	21:45:00	7.2	0.46116	51.8	4709.442	Open	Closed	16.8	257
9/10/2024	22:00:00	8	0	414.2	4709.442	Open	Closed	17	268
9/10/2024	22:15:00	8	0	60.1	4709.442	Open	Closed	17.4	277
9/10/2024	22:30:00	7.6	0	414.3	4709.442	Open	Closed	16.7	275
9/10/2024	22:45:00	7.5	0	414.2	4709.442	Open	Closed	17.1	280
9/10/2024	23:00:00	7.4	1.00926	399.8	4709.442	Open	Closed	16.7	277
9/10/2024	23:15:00	7.3	0.97902	32.7	4709.442	Open	Closed	16.6	277
9/10/2024	23:30:00	7.3	0	29.5	4709.442	Open	Closed	16.8	278
9/10/2024	23:45:00	7.3	0.9072	48.9	4709.442	Open	Closed	17.1	278
9/11/2024	0:00:00	7.2	0.99792	202.9	4709.442	Open	Closed	16.7	264
9/11/2024	0:15:00	7.1	0.37422	7.5	4709.442	Open	Closed	16.7	262

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/11/2024	0:30:00	7.1	0.37422	3.1	4711.796	Closed	Open	16.6	261
9/11/2024	0:45:00	7.2	0.37422	2.4	4717.266	Closed	Open	16.6	261
9/11/2024	1:00:00	7.3	0.378	2.1	4722.743	Closed	Open	16.5	258
9/11/2024	1:15:00	7.1	0.38178	2.4	4728.292	Closed	Open	16.5	264
9/11/2024	1:30:00	7.1	0.378	2.3	4733.804	Closed	Open	16.4	264
9/11/2024	1:45:00	7.2	0.37422	1.9	4739.296	Closed	Open	16.3	261
9/11/2024	2:00:00	7.3	0.67284	10.2	4740.267	Open	Closed	15.8	261
9/11/2024	2:15:00	7.3	0.75222	5.7	4740.267	Open	Closed	15.9	263
9/11/2024	2:30:00	7.2	0	112.7	4740.267	Open	Closed	16.3	261
9/11/2024	2:45:00	7.2	0	103.4	4740.267	Open	Closed	16.5	261
9/11/2024	3:00:00	7.1	0	84	4740.267	Open	Closed	16.7	261
9/11/2024	3:15:00	7.1	0	69.6	4740.267	Open	Closed	16.8	261
9/11/2024	3:30:00	7.1	0	52.2	4740.267	Open	Closed	16.8	261

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/11/2024	3:45:00	7.1	0	48.3	4740.267	Open	Closed	16.9	263
9/11/2024	4:00:00	7.1	0	36.6	4740.267	Open	Closed	17	263
9/11/2024	4:15:00	7.1	0	35.7	4740.267	Open	Closed	17	264
9/11/2024	4:30:00	7.1	0	37.3	4740.267	Open	Closed	17.1	264
9/11/2024	4:45:00	7.1	0	28.7	4740.267	Open	Closed	17.1	264
9/11/2024	5:00:00	7.1	0	20.9	4740.267	Open	Closed	17.1	266
9/11/2024	5:15:00	7.3	0.30996	30.5	4740.267	Open	Closed	16	264
9/11/2024	5:30:00	7.2	0.55944	30.7	4740.267	Open	Closed	15.9	264
9/11/2024	5:45:00	7.1	0.378	1.7	4744.618	Closed	Open	15.6	264
9/11/2024	6:00:00	7.2	0.378	1.3	4750.129	Closed	Open	15.5	264
9/11/2024	6:15:00	7.3	0.13608	1.2	4755.232	Closed	Open	15.5	262
9/11/2024	6:30:00	7.2	0.34776	6.4	4755.981	Open	Closed	15.5	264
9/11/2024	6:45:00	7.1	0.37044	2.7	4758.612	Closed	Open	15.5	267

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/11/2024	7:00:00	7.1	0.37422	1.6	4764.025	Closed	Open	15.5	266
9/11/2024	7:15:00	7.2	0.37044	1.3	4769.468	Closed	Open	15.5	263
9/11/2024	7:30:00	7.3	0.36288	1.1	4774.919	Closed	Open	15.5	261
9/11/2024	7:45:00	7.1	0.36666	1	4780.339	Closed	Open	15.5	268
9/11/2024	8:00:00	7.1	0.37044	1	4785.798	Closed	Open	15.5	271
9/11/2024	8:15:00	7.2	0.40446	2.1	4791.536	Closed	Open	15.4	264
9/11/2024	8:30:00	7.3	0.43848	17.5	4793.142	Open	Closed	15.4	264
9/11/2024	8:45:00	7.2	0.44226	6.5	4793.142	Open	Closed	15.4	268
9/11/2024	9:00:00	7.1	0.44604	3.1	4794.994	Closed	Open	15.5	267
9/11/2024	9:15:00	7.2	0.44982	2.9	4801.458	Closed	Open	15.6	268
9/11/2024	9:30:00	7.3	0.44604	13.7	4803.208	Open	Closed	15.6	262
9/11/2024	9:45:00	7.2	0.4725	5.9	4803.208	Open	Closed	15.7	264
9/11/2024	10:00:00	7.1	0.49518	3.3	4807.241	Closed	Open	15.8	268

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23th**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/11/2024	10:15:00	7.2	0.48762	2.4	4814.56	Closed	Open	15.9	262
9/11/2024	10:30:00	7.3	0.4914	4.9	4816.62	Open	Closed	15.9	262
9/11/2024	10:45:00	7.1	0.48762	2	4822.399	Closed	Open	15.9	263
9/11/2024	11:00:00	7.2	0.53298	6.1	4829.392	Open	Closed	16	263
9/11/2024	11:15:00	7.3	0.5481	6.2	4832.39	Open	Closed	16	261
9/11/2024	11:30:00	7.2	0.52164	8	4834.896	Open	Closed	16.1	261
9/11/2024	11:45:00	7.1	0.52164	4.4	4837.912	Open	Closed	16.3	263
9/11/2024	12:00:00	7.3	1.87866	4.1	4843.159	Open	Closed	16.4	263
9/11/2024	12:15:00	7.3	0.53298	1.9	4851.895	Closed	Open	16.8	263
9/11/2024	12:30:00	7.1	0.50652	20.5	4853.093	Open	Closed	16.8	259
9/11/2024	12:45:00	7.2	0.51786	12.6	4853.093	Open	Closed	17	260
9/11/2024	13:00:00	7.3	0.40824	88.2	4853.093	Open	Closed	16.5	260
9/11/2024	13:15:00	7.1	0.61992	118.9	4853.093	Open	Closed	16.6	265

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/11/2024	13:30:00	7.2	0.58968	153.7	4853.093	Open	Closed	16.5	265
9/11/2024	13:45:00	7.3	0.5859	252.1	4853.093	Open	Closed	16.5	263
9/11/2024	14:00:00	7.2	0.57834	266.7	4853.093	Open	Closed	16.6	264
9/11/2024	14:15:00	7.1	0.57078	232.4	4853.093	Open	Closed	16.6	270
9/11/2024	14:30:00	7.1	0.567	334.4	4853.093	Open	Closed	16.6	270
9/11/2024	14:45:00	7.3	0.43848	282	4853.093	Open	Closed	16.6	266
9/11/2024	15:00:00	7.3	0.42336	90.8	4853.093	Open	Closed	16.6	267
9/11/2024	15:15:00	7.1	0.42336	35.6	4853.093	Open	Closed	16.7	268
9/11/2024	15:30:00	7.1	0.52542	217.3	4853.093	Open	Closed	16.7	272
9/11/2024	15:45:00	7.2	0.378	339.6	4853.093	Open	Closed	16.7	271
9/11/2024	16:00:00	7.3	0.37422	275.1	4853.093	Open	Closed	16.9	268
9/11/2024	16:15:00	7.3	0.37422	217.7	4853.093	Open	Closed	17.2	268
9/11/2024	16:30:00	7.1	0.44982	404.2	4853.093	Open	Closed	17	268

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/11/2024	16:45:00	7.1	0.61992	414.3	4853.093	Open	Closed	16.8	275
9/11/2024	17:00:00	7.2	0.6048	27.8	4853.093	Open	Closed	16.8	268
9/11/2024	17:15:00	7.3	0.59724	25.5	4853.093	Open	Closed	16.7	266
9/11/2024	17:30:00	7.2	0.6237	62.5	4853.093	Open	Closed	16.7	268
9/11/2024	17:45:00	7.1	0.58212	13.4	4853.093	Open	Closed	16.6	272
9/11/2024	18:00:00	7.2	0.55566	5.1	4853.093	Open	Closed	16.6	270
9/11/2024	18:15:00	7.3	0.61614	44.4	4853.093	Open	Closed	16.7	267
9/11/2024	18:30:00	7.2	0.61992	63.7	4853.093	Open	Closed	16.8	268
9/11/2024	18:45:00	7.1	0.60102	68.7	4853.093	Open	Closed	17	270
9/11/2024	19:00:00	7.2	0.60858	116.5	4853.093	Open	Closed	17	264
9/11/2024	19:15:00	7.3	0.59346	272.7	4853.093	Open	Closed	17	265
9/11/2024	19:30:00	7.2	0.61236	188.7	4853.093	Open	Closed	16.9	266
9/11/2024	19:45:00	7.2	1.09242	315.5	4853.093	Open	Closed	16.8	265

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/11/2024	20:00:00	7.3	0	414.4	4853.093	Open	Closed	17	262
9/11/2024	20:15:00	7.3	0	414.4	4853.093	Open	Closed	17.2	263
9/11/2024	20:30:00	7	0.65394	414.4	4853.093	Open	Closed	17.1	278
9/11/2024	20:45:00	7.1	0.52542	201.1	4853.093	Open	Closed	17	266
9/11/2024	21:00:00	7.4	0.66906	245	4853.093	Open	Closed	17.1	263
9/11/2024	21:15:00	7.4	0.5481	172.6	4853.093	Open	Closed	17.1	263
9/11/2024	21:30:00	7.3	0.54432	79.9	4853.093	Open	Closed	17.1	262
9/11/2024	21:45:00	7.2	0.55566	70.7	4853.093	Open	Closed	17.1	263
9/11/2024	22:00:00	7.1	0.55566	49.7	4853.093	Open	Closed	17	263
9/11/2024	22:15:00	7.2	0.52164	153.3	4853.093	Open	Closed	16.9	263
9/11/2024	22:30:00	7.3	0.5292	50	4853.093	Open	Closed	16.9	264
9/11/2024	22:45:00	7.1	0.52164	18.2	4853.093	Open	Closed	16.8	262
9/11/2024	23:00:00	7.2	0.53298	10.7	4853.093	Open	Closed	16.8	262

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/11/2024	23:15:00	7.3	0.52164	40.3	4853.093	Open	Closed	16.7	264
9/11/2024	23:30:00	7.2	0.5103	15	4853.093	Open	Closed	16.7	264
9/11/2024	23:45:00	7.1	0.51408	5.8	4853.093	Open	Closed	16.6	264
9/12/2024	0:00:00	7.2	0.5103	5.7	4853.917	Open	Closed	16.6	264
9/12/2024	0:15:00	7.2	0.49896	10.7	4854.79	Open	Closed	16.5	264
9/12/2024	0:30:00	7.1	0.50652	4.5	4854.79	Open	Closed	16.5	263
9/12/2024	0:45:00	7.2	0.51408	3.8	4860.604	Closed	Open	16.5	263
9/12/2024	1:00:00	7.3	0.58212	2.6	4867.249	Closed	Open	16.4	263
9/12/2024	1:15:00	7.1	0.57078	4	4871.524	Closed	Open	16.4	263
9/12/2024	1:30:00	7.2	0.57456	2	4880.26	Closed	Open	16.6	263
9/12/2024	1:45:00	7.2	0.57834	2.1	4889.105	Closed	Open	16.8	266
9/12/2024	2:00:00	7.3	0.58212	2	4897.788	Closed	Open	17	266
9/12/2024	2:15:00	7.3	0.57456	3.7	4903.915	Closed	Open	16.5	266

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/12/2024	2:30:00	7.1	0.57834	2.7	4912.756	Closed	Open	16.2	266
9/12/2024	2:45:00	7.3	0.58212	2.1	4921.541	Closed	Open	16.2	266
9/12/2024	3:00:00	7.1	0.57456	2.4	4930.371	Closed	Open	16.1	266
9/12/2024	3:15:00	7.2	0.567	2.2	4937.134	Closed	Open	16.2	266
9/12/2024	3:30:00	7.2	0.55944	2	4945.79	Closed	Open	16.4	265
9/12/2024	3:45:00	7.3	0.567	2.2	4954.427	Closed	Open	16.6	268
9/12/2024	4:00:00	7.2	0.17388	89	4956.797	Open	Closed	15.6	261
9/12/2024	4:15:00	7.2	0.49518	208.4	4956.797	Open	Closed	15.7	263
9/12/2024	4:30:00	7.1	0.48762	414.9	4956.797	Open	Closed	15.6	269
9/12/2024	4:45:00	7.2	0.4725	414.9	4956.797	Open	Closed	15.9	271
9/12/2024	5:00:00	7.2	0.27972	285.9	4956.797	Open	Closed	16.1	271
9/12/2024	5:15:00	7.4	0.48384	0.7	4959.844	Closed	Open	15.9	266
9/12/2024	5:30:00	7.4	0.48006	0.8	4967.324	Closed	Open	16.1	267

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23th**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/12/2024	5:45:00	7.2	0.46116	0.7	4971.358	Open	Closed	16.4	268
9/12/2024	6:00:00	7.1	0	23.8	4971.358	Open	Closed	16.6	267
9/12/2024	6:15:00	7.4	0.53676	241.4	4971.358	Open	Closed	16.7	266
9/12/2024	6:30:00	7.1	0.61614	36.1	4971.358	Open	Closed	15.4	266
9/12/2024	6:45:00	7.1	0.30618	70.9	4971.358	Open	Closed	15.5	267
9/12/2024	7:00:00	7.1	0.55566	14.5	4971.358	Open	Closed	15.5	267
9/12/2024	7:15:00	7.3	0.5481	10.4	4971.358	Open	Closed	15.6	268
9/12/2024	7:30:00	7.2	0.55188	8.6	4971.358	Open	Closed	15.6	268
9/12/2024	7:45:00	7.2	0.20034	48	4971.358	Open	Closed	15.6	268
9/12/2024	8:00:00	7.3	0.5292	4.1	4971.358	Open	Closed	15.6	267
9/12/2024	8:15:00	7.2	0.54054	3.1	4977.255	Closed	Open	15.6	269
9/12/2024	8:30:00	7.1	0.55188	3.5	4985.193	Closed	Open	15.6	269
9/12/2024	8:45:00	7.3	0.2079	98.8	4988.511	Open	Closed	15.6	271

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/12/2024	9:00:00	7.2	0.54054	4.1	4988.511	Open	Closed	15.7	271
9/12/2024	9:15:00	7.1	0.54432	3.8	4992.186	Closed	Open	15.7	269
9/12/2024	9:30:00	7.2	0.54432	3.2	5000.305	Closed	Open	15.8	269
9/12/2024	9:45:00	7.3	0.16632	8.6	5003.998	Open	Closed	15.9	271
9/12/2024	10:00:00	7.1	0.54054	2.9	5003.998	Open	Closed	16	271
9/12/2024	10:15:00	7.2	0.5481	2.9	5009.487	Closed	Open	16.1	269
9/12/2024	10:30:00	7.3	0.53676	78.5	5010.757	Open	Closed	16.3	269
9/12/2024	10:45:00	7.1	0.16254	208.2	5010.757	Open	Closed	16.5	269
9/12/2024	11:00:00	7.1	0.54054	242	5010.757	Open	Closed	16.6	268
9/12/2024	11:15:00	7.3	0.54432	276.5	5010.757	Open	Closed	16.7	270
9/12/2024	11:30:00	7.2	0.54432	260.8	5010.757	Open	Closed	16.8	270
9/12/2024	11:45:00	7.2	0.1701	264.9	5010.757	Open	Closed	17	268
9/12/2024	12:00:00	7.3	0.53298	176.6	5010.757	Open	Closed	17.1	270

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/12/2024	12:15:00	7.1	0.54054	146	5010.757	Open	Closed	17.2	272
9/12/2024	12:30:00	7.3	0	113.9	5010.757	Open	Closed	17.4	270
9/12/2024	12:45:00	7.1	0.16254	252.6	5010.757	Open	Closed	17.5	271
9/12/2024	13:00:00	7.2	0	69.3	5010.757	Open	Closed	17.6	271
9/12/2024	13:15:00	7.2	0.5292	99.4	5010.757	Open	Closed	17.6	274
9/12/2024	13:30:00	7.2	0.53676	86.1	5010.757	Open	Closed	17.7	272
9/12/2024	13:45:00	7.3	0.18522	73.2	5010.757	Open	Closed	17.9	274
9/12/2024	14:00:00	7.1	0.27216	56.9	5010.757	Open	Closed	18	276
9/12/2024	14:15:00	7.1	0.567	40.2	5010.757	Open	Closed	18.1	276
9/12/2024	14:30:00	7.3	0	35.1	5010.757	Open	Closed	18.2	276
9/12/2024	14:45:00	7.1	0.52542	76.4	5010.757	Open	Closed	18.2	278
9/12/2024	15:00:00	7.2	0.52542	24.8	5010.757	Open	Closed	18.2	276
9/12/2024	15:15:00	7.2	0.53298	22.4	5010.757	Open	Closed	18.2	278

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/12/2024	15:30:00	7.1	0.55188	33.8	5010.757	Open	Closed	18.3	279
9/12/2024	15:45:00	7.3	0.21924	70.7	5010.757	Open	Closed	18.4	281
9/12/2024	16:00:00	7.2	0.54054	19.1	5010.757	Open	Closed	18.4	281
9/12/2024	16:15:00	7.1	0.63126	55.6	5010.757	Open	Closed	18.5	281
9/12/2024	16:30:00	7.2	0.64638	22.5	5010.757	Open	Closed	18.5	281
9/12/2024	16:45:00	7.3	0.20034	38.1	5010.757	Open	Closed	18.5	283
9/12/2024	17:00:00	7.1	0.5103	6.9	5010.757	Open	Closed	18.5	286
9/12/2024	17:15:00	7.2	0.49518	7.7	5010.757	Open	Closed	18.6	289
9/12/2024	17:30:00	7.2	0.6237	12.5	5010.757	Open	Closed	18.7	289
9/12/2024	17:45:00	7.3	0	12	5010.757	Open	Closed	19	289
9/12/2024	18:00:00	7.3	0	12.1	5010.757	Open	Closed	19.3	287
9/12/2024	18:15:00	7.3	0	11.1	5010.757	Open	Closed	19.5	289
9/12/2024	18:30:00	7.1	0.51408	20.7	5010.757	Open	Closed	18.6	288

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23th**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/12/2024	18:45:00	7.3	0.25704	21.1	5010.757	Open	Closed	18.3	291
9/12/2024	19:00:00	7.2	0	35.2	5010.757	Open	Closed	18.6	291
9/12/2024	19:15:00	7.1	0	20.4	5010.757	Open	Closed	18.3	292
9/12/2024	19:30:00	7.1	0.35532	21.7	5010.757	Open	Closed	18.2	292
9/12/2024	19:45:00	7.2	0.21924	18.6	5010.757	Open	Closed	18	293
9/12/2024	20:00:00	7.2	0.3213	12.1	5010.757	Open	Closed	18.2	294
9/12/2024	20:15:00	7.2	0	5.2	5010.757	Open	Closed	18	294
9/12/2024	20:30:00	7.3	0.378	4.9	5010.757	Open	Closed	18	293
9/12/2024	20:45:00	7.3	0.5103	36.8	5012.771	Open	Closed	17.8	293
9/12/2024	21:00:00	7.1	0.5103	1.6	5019.228	Closed	Open	17.7	293
9/12/2024	21:15:00	7.1	0.51408	1.1	5026.761	Closed	Open	17.7	291
9/12/2024	21:30:00	7.3	0.51786	1	5034.325	Closed	Open	17.6	291
9/12/2024	21:45:00	7.4	0.27594	2.6	5037.648	Closed	Open	17.4	291

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/12/2024	22:00:00	7.2	0.57456	3.6	5043.907	Open	Open	17.5	291
9/12/2024	22:15:00	7.3	0.57834	1.9	5052.703	Closed	Open	17.4	291
9/12/2024	22:30:00	7.1	0.58212	1.7	5061.549	Closed	Open	17.3	289
9/12/2024	22:45:00	7.3	0.54432	414.6	5068.364	Open	Closed	17.2	289
9/12/2024	23:00:00	7.2	0.37422	246.5	5068.364	Open	Closed	17.1	291
9/12/2024	23:15:00	7.2	0.5292	80.9	5068.364	Open	Closed	17	293
9/12/2024	23:30:00	7.2	0.50652	48.1	5068.364	Open	Closed	17	293
9/12/2024	23:45:00	7.3	0	15.6	5068.364	Open	Closed	17	292
9/13/2024	0:00:00	7.1	0.46494	9.4	5068.364	Open	Closed	16.9	293
9/13/2024	0:15:00	7.3	0	21.6	5068.364	Open	Closed	16.8	291
9/13/2024	0:30:00	7	0.4536	7.1	5068.364	Open	Closed	16.8	291
9/13/2024	0:45:00	7.3	0.32508	7.6	5068.364	Open	Closed	16.7	291
9/13/2024	1:00:00	7.2	0.24192	9.8	5068.364	Open	Closed	16.7	293

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/13/2024	1:15:00	7.1	0.19278	6.5	5068.364	Open	Closed	17	293
9/13/2024	1:30:00	7.3	0.2268	153.2	5068.364	Open	Closed	16.5	286
9/13/2024	1:45:00	7.1	0.47628	138.5	5068.364	Open	Closed	16.6	289
9/13/2024	2:00:00	7.1	0.30618	45.5	5068.364	Open	Closed	16.9	289
9/13/2024	2:15:00	7.1	0	31.7	5068.364	Open	Closed	17.1	291
9/13/2024	2:30:00	7.3	0.27216	414.6	5068.364	Open	Closed	17.5	291
9/13/2024	2:45:00	7.1	0.51786	1.3	5071.082	Closed	Open	17.3	291
9/13/2024	3:00:00	7.2	0.49896	1.7	5078.823	Closed	Open	17.5	291
9/13/2024	3:15:00	7.2	0.32508	2.5	5084.644	Closed	Open	16.8	288
9/13/2024	3:30:00	7.2	0.50274	2.7	5091.909	Closed	Open	17	289
9/13/2024	3:45:00	7.2	0.49896	3	5099.398	Closed	Open	17.1	289
9/13/2024	4:00:00	7.1	0.48384	3.1	5106.825	Closed	Open	17.5	289
9/13/2024	4:15:00	7.1	0.30996	3.1	5112.998	Closed	Open	17.6	289

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/13/2024	4:30:00	7.1	0.47628	3.1	5120.033	Closed	Open	17.7	289
9/13/2024	4:45:00	7.3	0.4725	12.7	5124.217	Open	Closed	16.5	289
9/13/2024	5:00:00	7.1	0.36666	13.9	5124.557	Open	Closed	16.3	291
9/13/2024	5:15:00	7.3	0.27594	18.5	5125.381	Open	Closed	16.3	291
9/13/2024	5:30:00	7.2	0.42714	1.1	5130.087	Closed	Open	16.5	291
9/13/2024	5:45:00	7.1	0.42336	0.6	5136.393	Closed	Open	16.7	291
9/13/2024	6:00:00	7.5	0.43092	0.4	5142.645	Closed	Open	16.7	291
9/13/2024	6:15:00	7.7	0.24192	0.7	5144.361	Open	Closed	16.8	291
9/13/2024	6:30:00	7.1	0.41202	17.8	5144.361	Open	Closed	16.2	291
9/13/2024	6:45:00	7.1	0.26838	13.3	5144.361	Open	Closed	16.3	294
9/13/2024	7:00:00	7.4	0	25.9	5144.361	Open	Closed	16.3	292
9/13/2024	7:15:00	7.1	0	14.3	5144.361	Open	Closed	16.2	292
9/13/2024	7:30:00	7.4	0	27	5144.361	Open	Closed	16.1	292

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/13/2024	7:45:00	7.2	0.15498	13.6	5144.361	Open	Closed	16.1	292
9/13/2024	8:00:00	7.2	0.32508	0.5	5147.252	Closed	Open	16.4	294
9/13/2024	8:15:00	7.7	0.1512	0.9	5149.04	Open	Closed	16.5	296
9/13/2024	8:30:00	7.6	0.40068	1	5149.04	Open	Closed	16.7	296
9/13/2024	8:45:00	7.5	0.41202	1	5154.994	Closed	Open	16.7	296
9/13/2024	9:00:00	7.4	0.40446	0.8	5160.335	Closed	Open	16.9	296
9/13/2024	9:15:00	7.4	0.1701	0.7	5164.822	Closed	Open	16.9	294
9/13/2024	9:30:00	7.4	0.40446	0.6	5170.673	Closed	Open	17	296
9/13/2024	9:45:00	7.3	0.40824	0.6	5176.797	Closed	Open	17.1	296
9/13/2024	10:00:00	7	0.34776	21.5	5177.398	Open	Closed	16.4	294
9/13/2024	10:15:00	7.2	0.17388	18.6	5177.398	Open	Closed	16.3	289
9/13/2024	10:30:00	7.2	0.19278	18.2	5177.398	Open	Closed	16.4	291
9/13/2024	10:45:00	7.3	0	13.9	5177.398	Open	Closed	16.6	289

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/13/2024	11:00:00	7.3	0.27216	11.6	5177.398	Open	Closed	16.7	289
9/13/2024	11:15:00	7.2	0.27594	13.7	5177.398	Open	Closed	16.8	289
9/13/2024	11:30:00	7.2	0	20.4	5177.398	Open	Closed	17	291
9/13/2024	11:45:00	7	0	31	5177.398	Open	Closed	16.9	291
9/13/2024	12:00:00	7	0.19656	30.4	5177.398	Open	Closed	17.2	296
9/13/2024	12:15:00	7	0.17766	28.7	5177.398	Open	Closed	17.4	294
9/13/2024	12:30:00	7	0.15876	27.6	5177.398	Open	Closed	17.6	297
9/13/2024	12:45:00	7	0.25326	27.7	5177.398	Open	Closed	17.9	294
9/13/2024	13:00:00	7	0.2835	23.4	5177.398	Open	Closed	18.1	296
9/13/2024	13:15:00	7.2	0.2079	37.2	5177.398	Open	Closed	17.5	292
9/13/2024	13:30:00	7.2	0.81648	26.9	5177.398	Open	Closed	17.1	292
9/13/2024	13:45:00	7.2	0.79002	24.9	5177.398	Open	Closed	17.1	291
9/13/2024	14:00:00	7.2	0.80136	23.5	5177.398	Open	Closed	17.1	291

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/13/2024	14:15:00	7.3	0.83538	38.1	5177.398	Open	Closed	17	289
9/13/2024	14:30:00	7.3	0.7749	26.1	5177.398	Open	Closed	17	291
9/13/2024	14:45:00	7.2	0.76734	24.6	5177.398	Open	Closed	17.1	291
9/13/2024	15:00:00	7.1	0.29484	23.5	5177.398	Open	Closed	17	294
9/13/2024	15:15:00	7.3	0.44604	33.5	5177.398	Open	Closed	17.2	294
9/13/2024	15:30:00	7.1	0.44226	27.4	5177.398	Open	Closed	17.1	293
9/13/2024	15:45:00	7.1	0	22.6	5177.398	Open	Closed	17.3	293
9/13/2024	16:00:00	7.1	0	22.5	5177.398	Open	Closed	17.4	293
9/13/2024	16:15:00	7.1	0	22.5	5177.398	Open	Closed	17.5	294
9/13/2024	16:30:00	7.3	0.47628	63.3	5177.398	Open	Closed	17.1	291
9/13/2024	16:45:00	7.1	0.46116	96.2	5177.398	Open	Closed	17.1	293
9/13/2024	17:00:00	7.3	0.44982	35.9	5177.398	Open	Closed	17	291
9/13/2024	17:15:00	7.1	0.46494	49.4	5177.398	Open	Closed	17	289

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/13/2024	17:30:00	7.2	0.43092	18	5177.398	Open	Closed	17	286
9/13/2024	17:45:00	7.2	0.61992	14.7	5177.398	Open	Closed	16.9	289
9/13/2024	18:00:00	7.1	0.69174	8.2	5177.398	Open	Closed	16.9	289
9/13/2024	18:15:00	7.2	0.67662	7.4	5177.398	Open	Closed	16.8	286
9/13/2024	18:30:00	7.3	0.63882	5	5177.398	Open	Closed	16.9	284
9/13/2024	18:45:00	7.1	0.69174	3.4	5184.002	Closed	Open	16.9	286
9/13/2024	19:00:00	7.3	0.3591	5.1	5193.671	Open	Closed	16.9	286
9/13/2024	19:15:00	7.3	0.44982	10.9	5193.671	Open	Closed	16.7	284
9/13/2024	19:30:00	7.3	0	8.6	5193.671	Open	Closed	16.8	284
9/13/2024	19:45:00	7.1	0	9	5193.671	Open	Closed	16.7	286
9/13/2024	20:00:00	7.1	0	8.1	5193.671	Open	Closed	16.8	286
9/13/2024	20:15:00	7.1	0	9.8	5193.671	Open	Closed	16.9	286
9/13/2024	20:30:00	7.1	0	9.8	5193.671	Open	Closed	17	286

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/13/2024	20:45:00	7.3	0.38178	13.4	5193.671	Open	Closed	16.6	281
9/13/2024	21:00:00	7.3	0.38556	12.1	5193.671	Open	Closed	16.8	281
9/13/2024	21:15:00	7.2	0.38556	12.2	5193.671	Open	Closed	16.9	281
9/13/2024	21:30:00	7.1	0.3969	18.9	5193.671	Open	Closed	16.4	283
9/13/2024	21:45:00	7.2	0.40068	14.2	5193.671	Open	Closed	16.5	282
9/13/2024	22:00:00	7.2	0.40068	10.3	5193.671	Open	Closed	16.5	283
9/13/2024	22:15:00	7.2	0.39312	6.2	5193.671	Open	Closed	16.4	283
9/13/2024	22:30:00	7.2	0.3969	3.5	5197.073	Closed	Open	16.5	283
9/13/2024	22:45:00	7.1	0.3969	2.1	5203.196	Closed	Open	16.5	283
9/13/2024	23:00:00	7.3	0.40068	1.4	5209.32	Closed	Open	16.5	279
9/13/2024	23:15:00	7	0.40068	1	5215.41	Closed	Open	16.5	283
9/13/2024	23:30:00	7.3	0.3969	0.9	5221.533	Closed	Open	16.4	279
9/13/2024	23:45:00	7	0.3969	0.8	5227.657	Closed	Open	16.4	283

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23th**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/14/2024	0:00:00	7.3	0.3969	0.8	5233.746	Closed	Open	16.4	279
9/14/2024	0:15:00	7	0.40068	0.7	5239.87	Closed	Open	16.3	284
9/14/2024	0:30:00	7.3	0.40068	0.8	5245.994	Closed	Open	16.3	279
9/14/2024	0:45:00	7.1	0.38934	234.5	5249.872	Open	Closed	16.2	281
9/14/2024	1:00:00	7.5	0.2457	414.8	5249.872	Open	Closed	16.3	284
9/14/2024	1:15:00	7.7	0.19278	409.5	5249.872	Open	Closed	16.5	286
9/14/2024	1:30:00	7	0.76734	414.8	5249.872	Open	Closed	16.3	291
9/14/2024	1:45:00	7.2	0.23814	414.9	5249.872	Open	Closed	16.1	286
9/14/2024	2:00:00	7.2	0	414.9	5249.872	Open	Closed	16.1	289
9/14/2024	2:15:00	7.2	0.41202	414.9	5249.872	Open	Closed	16	289
9/14/2024	2:30:00	7.2	0	389.8	5249.872	Open	Closed	16.1	291
9/14/2024	2:45:00	7.1	0	382.1	5249.872	Open	Closed	16.3	291
9/14/2024	3:00:00	7.1	0.48762	2.6	5251.161	Closed	Open	16.1	294

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/14/2024	3:15:00	7.1	0.65772	2.7	5257.576	Closed	Open	16.3	294
9/14/2024	3:30:00	7.1	0.6615	3.6	5266.78	Closed	Open	16.4	294
9/14/2024	3:45:00	7.1	0.6615	2.2	5276.744	Closed	Open	16.5	294
9/14/2024	4:00:00	7.1	0.65394	1.5	5286.833	Closed	Open	16.7	294
9/14/2024	4:15:00	7.4	0	162.7	5293.259	Open	Closed	15.9	292
9/14/2024	4:30:00	7.2	0.378	151.4	5293.259	Open	Closed	15.9	292
9/14/2024	4:45:00	7.2	0.38178	106.6	5293.259	Open	Closed	15.9	292
9/14/2024	5:00:00	7.2	0.16632	49.4	5293.259	Open	Closed	16	291
9/14/2024	5:15:00	7	0	37.7	5293.259	Open	Closed	16.1	291
9/14/2024	5:30:00	7	0	36.9	5293.259	Open	Closed	16.2	291
9/14/2024	5:45:00	7	0.2268	25.1	5293.259	Open	Closed	16	296
9/14/2024	6:00:00	7.2	0	17.6	5293.259	Open	Closed	16.1	296
9/14/2024	6:15:00	7.3	0.29862	13	5293.259	Open	Closed	15.9	296

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/14/2024	6:30:00	7.1	0.29862	4.4	5293.947	Closed	Open	16	292
9/14/2024	6:45:00	7	0.3024	4.3	5298.392	Closed	Open	16.2	292
9/14/2024	7:00:00	7	0.43848	4.1	5303.476	Closed	Open	16.4	292
9/14/2024	7:15:00	7.1	0.4347	3.9	5309.906	Closed	Open	16.4	294
9/14/2024	7:30:00	7.2	0.42714	4.3	5316.381	Closed	Open	16.5	294
9/14/2024	7:45:00	7.3	0.42714	3.6	5322.497	Closed	Open	16.6	296
9/14/2024	8:00:00	7.2	0.42336	4.1	5328.802	Closed	Open	16.7	296
9/14/2024	8:15:00	7.2	0.4347	3.8	5335.565	Closed	Open	16.7	296
9/14/2024	8:30:00	7.2	0.43092	3.8	5342.047	Closed	Open	16.8	296
9/14/2024	8:45:00	7.2	0.4347	3.8	5348.847	Closed	Open	16.9	296
9/14/2024	9:00:00	7.2	0.4347	3.4	5355.534	Closed	Open	17	296
9/14/2024	9:15:00	7.1	0.43092	3.3	5362.198	Closed	Open	17.1	296
9/14/2024	9:30:00	7.1	0.4347	3.5	5368.863	Closed	Open	17.1	296

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/14/2024	9:45:00	7.3	0.43092	2.9	5374.967	Open	Open	16.8	294
9/14/2024	10:00:00	7.4	0.43092	2.6	5381.416	Closed	Open	16.9	294
9/14/2024	10:15:00	7.3	0.41958	2.6	5387.672	Closed	Open	17	294
9/14/2024	10:30:00	7.3	0.41958	2.7	5393.909	Closed	Open	17.1	294
9/14/2024	10:45:00	7.3	0.42336	2.5	5400.066	Closed	Open	17.1	294
9/14/2024	11:00:00	7.3	0.43092	2.7	5406.22	Closed	Open	17.2	294
9/14/2024	11:15:00	7.3	0.41958	2.2	5412.423	Closed	Open	17.3	294
9/14/2024	11:30:00	7.3	0.41958	2.5	5418.554	Closed	Open	17.4	294
9/14/2024	11:45:00	7.3	0.41958	2.2	5424.727	Closed	Open	17.5	293
9/14/2024	12:00:00	7.3	0.41958	2.4	5430.926	Closed	Open	17.6	293
9/14/2024	12:15:00	7.3	0.41958	2.3	5437.035	Closed	Open	17.6	294
9/14/2024	12:30:00	7.3	0.41958	2.2	5443.162	Closed	Open	17.7	294
9/14/2024	12:45:00	7.3	0.41202	2	5449.297	Closed	Open	17.8	294

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/14/2024	13:00:00	7.3	0.40824	2.1	5455.387	Closed	Open	17.9	294
9/14/2024	13:15:00	7.3	0.42336	2.2	5461.552	Closed	Open	17.9	294
9/14/2024	13:30:00	7.3	0.41958	2.2	5467.691	Closed	Open	18	294
9/14/2024	13:45:00	7.3	0	2.7	5473.315	Closed	Open	18	293
9/14/2024	14:00:00	7.3	0	2.2	5475.167	Open	Closed	18.1	294
9/14/2024	14:15:00	7.3	0	2.1	5475.167	Open	Closed	18.2	294
9/14/2024	14:30:00	7.3	0	2	5475.167	Open	Closed	18.2	294
9/14/2024	14:45:00	7.3	0	1.9	5475.167	Open	Closed	18.3	294
9/14/2024	15:00:00	7.3	0	2.2	5475.167	Open	Closed	18.3	294
9/14/2024	15:15:00	7.3	0	2.2	5475.167	Open	Closed	18.3	294
9/14/2024	15:30:00	7.1	0	414.9	5475.167	Open	Closed	17.7	294
9/14/2024	15:45:00	7.2	0.48762	102.1	5475.167	Open	Closed	15.8	284
9/14/2024	16:00:00	7.3	0	60	5475.167	Open	Closed	16	282

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/14/2024	16:15:00	7.2	0.43092	33.6	5475.167	Open	Closed	15.8	273
9/14/2024	16:30:00	7.1	0.12474	107.6	5475.167	Open	Closed	15.8	269
9/14/2024	16:45:00	7.1	0.43848	6.8	5475.167	Open	Closed	15.8	264
9/14/2024	17:00:00	7.3	0.44226	6.7	5475.167	Open	Closed	15.9	266
9/14/2024	17:15:00	7	0.44604	6.7	5475.167	Open	Closed	15.9	268
9/14/2024	17:30:00	7.3	0.12852	38.8	5475.167	Open	Closed	16	264
9/14/2024	17:45:00	7.1	0.44226	7.6	5475.167	Open	Closed	15.9	268
9/14/2024	18:00:00	7.1	0.44226	8.4	5475.167	Open	Closed	15.9	268
9/14/2024	18:15:00	7.2	0.43848	8.2	5475.167	Open	Closed	15.9	267
9/14/2024	18:30:00	7.1	0.12852	15.4	5475.167	Open	Closed	15.9	269
9/14/2024	18:45:00	7	0	31.5	5475.167	Open	Closed	16	271
9/14/2024	19:00:00	7.1	0.44604	21	5475.167	Open	Closed	15.9	271
9/14/2024	19:15:00	7.2	0.49518	9.1	5475.167	Open	Closed	15.8	266

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/14/2024	19:30:00	7.2	0	17.6	5475.167	Open	Closed	15.7	266
9/14/2024	19:45:00	7.1	0.3213	8.5	5475.167	Open	Closed	15.7	268
9/14/2024	20:00:00	7.2	0.40824	9.1	5475.167	Open	Closed	15.7	271
9/14/2024	20:15:00	7.1	0.40824	8.5	5475.167	Open	Closed	15.6	267
9/14/2024	20:30:00	7.2	0	11.2	5475.167	Open	Closed	15.6	269
9/14/2024	20:45:00	7.1	0.41958	7.7	5475.167	Open	Closed	15.6	268
9/14/2024	21:00:00	7.3	0.27972	7.7	5475.167	Open	Closed	15.6	267
9/14/2024	21:15:00	7.1	0.29862	8.5	5475.167	Open	Closed	15.7	267
9/14/2024	21:30:00	7	0	12.5	5475.167	Open	Closed	15.7	271
9/14/2024	21:45:00	7.3	0.1512	7.4	5475.167	Open	Closed	15.5	267
9/14/2024	22:00:00	7.1	0.189	16	5475.167	Open	Closed	15.4	268
9/14/2024	22:15:00	7.2	0.23436	33.8	5475.167	Open	Closed	15.6	264
9/14/2024	22:30:00	7.1	0	8.3	5475.167	Open	Closed	15.5	268

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/14/2024	22:45:00	7.3	0.34776	9.4	5475.167	Open	Closed	15.5	269
9/14/2024	23:00:00	7.1	0.35154	9.6	5475.167	Open	Closed	15.5	266
9/14/2024	23:15:00	7	0.34398	9.4	5475.167	Open	Closed	15.6	267
9/14/2024	23:30:00	7.1	1.16424	14.6	5475.167	Open	Closed	15.3	266
9/14/2024	23:45:00	7.1	1.17558	17.1	5475.167	Open	Closed	15.2	266
9/15/2024	0:00:00	7.3	0.35532	10.8	5475.167	Open	Closed	15.2	266
9/15/2024	0:15:00	7	0.57078	10.9	5475.167	Open	Closed	15.4	267
9/15/2024	0:30:00	7	0.37044	9.1	5475.167	Open	Closed	15.5	269
9/15/2024	0:45:00	7	0.23436	8.8	5475.167	Open	Closed	15.5	271
9/15/2024	1:00:00	7.1	0	10.6	5475.167	Open	Closed	15.7	271
9/15/2024	1:15:00	7.1	0.33264	8.9	5475.167	Open	Closed	15.5	269
9/15/2024	1:30:00	7.1	0.32508	8.9	5475.167	Open	Closed	15.5	269
9/15/2024	1:45:00	7.1	0.32886	8.3	5475.167	Open	Closed	15.6	270

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/15/2024	2:00:00	7.1	0.32886	9.3	5475.167	Open	Closed	15.7	272
9/15/2024	2:15:00	7.1	0.16632	415.4	5475.167	Open	Closed	15.8	271
9/15/2024	2:30:00	7.1	0.2457	2.8	5478.275	Closed	Open	15.8	272
9/15/2024	2:45:00	7.2	0	40.2	5481.386	Open	Closed	15.8	271
9/15/2024	3:00:00	7.2	0.41202	9	5481.386	Open	Closed	15.1	268
9/15/2024	3:15:00	7.1	0.23436	9.5	5481.386	Open	Closed	15.2	269
9/15/2024	3:30:00	7.3	0.2079	8	5481.386	Open	Closed	15.2	267
9/15/2024	3:45:00	7.1	0.25326	7.1	5481.522	Open	Closed	15.3	267
9/15/2024	4:00:00	7.1	0.22302	6.6	5481.522	Open	Closed	15.7	266
9/15/2024	4:15:00	7.2	0	35.4	5483.336	Open	Closed	16.3	266
9/15/2024	4:30:00	7.2	0.44604	14.1	5488.594	Open	Closed	17.6	268
9/15/2024	4:45:00	6.9	0.44604	1.3	5490.295	Closed	Open	16.3	269
9/15/2024	5:00:00	7.2	0.42714	5.6	5491.943	Open	Closed	16	266

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/15/2024	5:15:00	7.3	0.44226	0.7	5494.994	Closed	Open	17.1	264
9/15/2024	5:30:00	6.9	0.42714	4.7	5499.216	Open	Closed	15.8	264
9/15/2024	5:45:00	7.1	0.4347	2.9	5505.695	Closed	Open	15.7	266
9/15/2024	6:00:00	7.2	0.4347	2.2	5509.864	Closed	Open	16.6	266
9/15/2024	6:15:00	7.2	0.4347	2.5	5516.487	Closed	Open	17.5	264
9/15/2024	6:30:00	7.2	0.42714	1.1	5523.132	Closed	Open	16.1	260
9/15/2024	6:45:00	7.1	0.42714	0.7	5529.562	Closed	Open	15.6	266
9/15/2024	7:00:00	7.3	0.4158	80.6	5531.168	Open	Closed	16.2	266
9/15/2024	7:15:00	7	0.42714	0.6	5535.681	Closed	Open	16	264
9/15/2024	7:30:00	7.1	0.43848	0.4	5542.077	Closed	Open	15.6	264
9/15/2024	7:45:00	7.2	0.42714	0.2	5548.469	Closed	Open	15.5	264
9/15/2024	8:00:00	7.2	0.42336	1.2	5551.69	Closed	Open	15.5	264
9/15/2024	8:15:00	7.1	0.42336	0.4	5557.927	Closed	Open	15.5	264

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/15/2024	8:30:00	7.1	0.42714	0.2	5564.126	Closed	Open	15.5	264
9/15/2024	8:45:00	7.2	0.41958	0.2	5570.333	Closed	Open	15.5	264
9/15/2024	9:00:00	7	0.42336	0.3	5576.487	Closed	Open	15.5	266
9/15/2024	9:15:00	7.3	0.42336	0.2	5582.603	Closed	Open	15.5	261
9/15/2024	9:30:00	7	0.43092	0.4	5588.749	Closed	Open	15.5	266
9/15/2024	9:45:00	7.2	0.42714	1.1	5594.91	Closed	Open	15.4	261
9/15/2024	10:00:00	7	0.41958	1.2	5601.038	Closed	Open	15.3	266
9/15/2024	10:15:00	7.2	0.41958	1.5	5607.176	Closed	Open	15.4	264
9/15/2024	10:30:00	7.1	0.41958	1.7	5613.311	Closed	Open	15.4	263
9/15/2024	10:45:00	7.1	0.4158	2.1	5619.435	Closed	Open	15.5	266
9/15/2024	11:00:00	7.2	0.4158	2.5	5625.581	Closed	Open	15.5	261
9/15/2024	11:15:00	7.1	0.41958	4	5631.712	Closed	Open	15.6	264
9/15/2024	11:30:00	7.2	0.41958	3.9	5637.379	Closed	Open	15.9	263

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23th**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/15/2024	11:45:00	7.3	0.40824	6.2	5641.601	Open	Closed	16.1	262
9/15/2024	12:00:00	7	0.41202	6.3	5641.601	Open	Closed	16	263
9/15/2024	12:15:00	7	0.4158	6.6	5641.601	Open	Closed	16.4	266
9/15/2024	12:30:00	7	0.40824	6.3	5641.601	Open	Closed	16.7	267
9/15/2024	12:45:00	7.1	0	30.3	5641.601	Open	Closed	16.8	265
9/15/2024	13:00:00	7.4	0	22.7	5641.601	Open	Closed	16.6	265
9/15/2024	13:15:00	7.4	0	22.4	5641.601	Open	Closed	17	265
9/15/2024	13:30:00	7.4	0	21.4	5641.601	Open	Closed	17.3	263
9/15/2024	13:45:00	7.2	0.34776	16.9	5641.601	Open	Closed	16.4	267
9/15/2024	14:00:00	7.1	0.35154	17.6	5641.601	Open	Closed	16.4	266
9/15/2024	14:15:00	7.3	0.35532	35.9	5641.601	Open	Closed	16.6	264
9/15/2024	14:30:00	7	0.35532	9	5641.601	Open	Closed	16.6	263
9/15/2024	14:45:00	7.2	0.3591	10.5	5641.601	Open	Closed	16.8	264

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/15/2024	15:00:00	7.4	0	9.8	5641.601	Open	Closed	17.1	262
9/15/2024	15:15:00	7.4	0	8.8	5641.601	Open	Closed	17.6	264
9/15/2024	15:30:00	7.3	0	9.3	5641.601	Open	Closed	18.1	264
9/15/2024	15:45:00	7.3	0.37422	10.5	5641.601	Open	Closed	18.9	264
9/15/2024	16:00:00	7	0.37044	6.5	5641.601	Open	Closed	17.3	269
9/15/2024	16:15:00	7.4	0.37422	0.1	5641.692	Open	Closed	17.4	264
9/15/2024	16:30:00	7	0.40068	9.5	5641.692	Open	Closed	17.3	269
9/15/2024	16:45:00	7.3	0.40446	7.6	5641.692	Open	Closed	17.5	266
9/15/2024	17:00:00	7.1	0	7.6	5641.692	Open	Closed	17.8	266
9/15/2024	17:15:00	7	0	8.2	5641.692	Open	Closed	17.8	266
9/15/2024	17:30:00	6.9	0	7.1	5641.692	Open	Closed	18.1	272
9/15/2024	17:45:00	7	0.40824	5.9	5641.692	Open	Closed	17.4	272
9/15/2024	18:00:00	7.3	0.41202	5.8	5641.692	Open	Closed	17.4	267

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/15/2024	18:15:00	7	0.4725	9.6	5641.692	Open	Closed	17.3	272
9/15/2024	18:30:00	7.2	0.46494	13.7	5641.692	Open	Closed	17.2	267
9/15/2024	18:45:00	7.1	0.50652	2.7	5647.868	Closed	Open	17.5	270
9/15/2024	19:00:00	7.1	0.49518	2.6	5655.984	Closed	Open	17.9	273
9/15/2024	19:15:00	7.1	0.4914	2.9	5663.468	Closed	Open	18	273
9/15/2024	19:30:00	7.1	0.48762	3.4	5670.953	Closed	Open	18.2	273
9/15/2024	19:45:00	7.1	0.48384	2.7	5678.395	Closed	Open	18.3	273
9/15/2024	20:00:00	7.1	0.48762	2.9	5685.88	Closed	Open	18.4	273
9/15/2024	20:15:00	7.1	0.48762	2.9	5694.551	Closed	Open	18.5	272
9/15/2024	20:30:00	7.1	0.48384	2.1	5701.971	Closed	Open	18.6	272
9/15/2024	20:45:00	7.1	0.48762	2.7	5709.418	Closed	Open	18.6	273
9/15/2024	21:00:00	7.1	0.48006	2.5	5716.83	Closed	Open	18.6	274
9/15/2024	21:15:00	7.1	0.48006	2.7	5724.266	Closed	Open	18.6	273

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**September 9th to September 15th**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 23rd**

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature	Discharge Conductivity
9/15/2024	21:30:00	7.1	0.4725	2.4	5731.474	Closed	Open	18.6	275
9/15/2024	21:45:00	7.1	0.17388	1.6	5735.575	Closed	Open	18.6	275
9/15/2024	22:00:00	7.1	0.1701	1.9	5738.297	Closed	Open	18.5	276
9/15/2024	22:15:00	7.1	0	2.3	5738.581	Open	Closed	18.5	276
9/15/2024	22:30:00	7.1	0	2.2	5738.581	Open	Closed	18.4	274
9/15/2024	22:45:00	7.1	0	2.1	5738.581	Open	Closed	18.3	274
9/15/2024	23:00:00	7.1	0	2.4	5738.581	Open	Closed	18.2	276
9/15/2024	23:15:00	7.1	0.10584	2.2	5738.581	Open	Closed	18.1	276
9/15/2024	23:30:00	7.1	0	2.3	5738.581	Open	Closed	18.1	277
9/15/2024	23:45:00	7.1	0.44982	2.2	5738.581	Open	Closed	18	276

Appendix B: Photos

Photo 1: No visible sheen observed in the WTP tank, September 9th

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

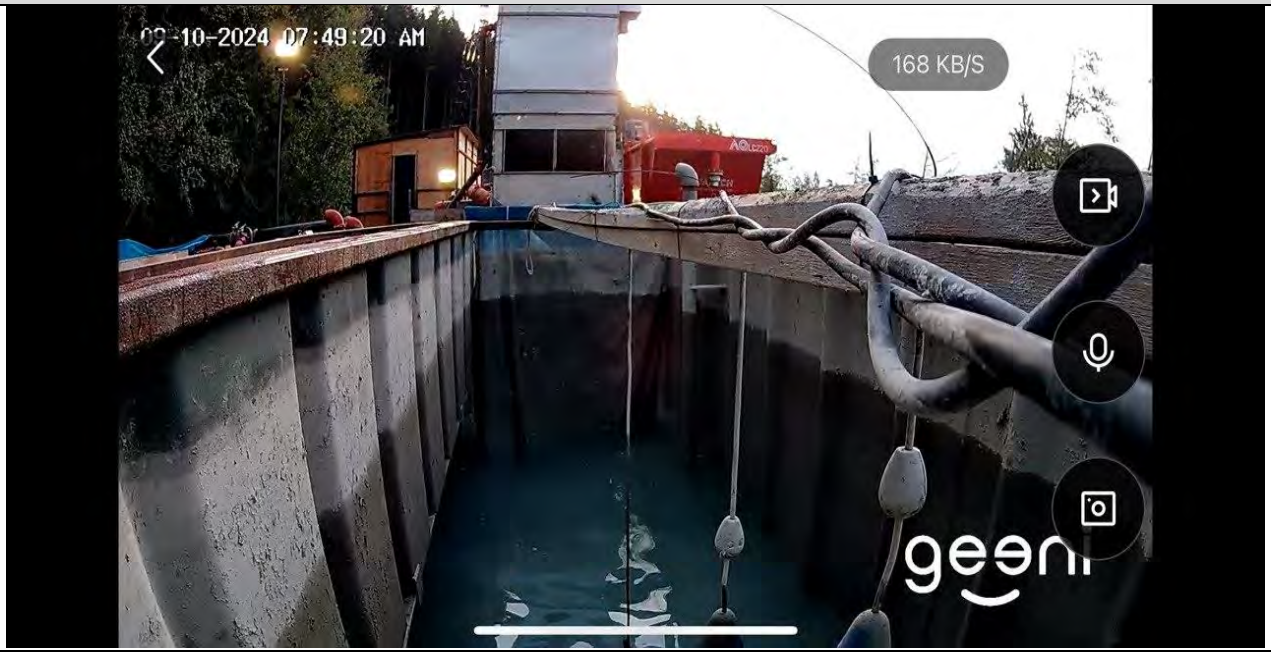

Photo 3: No visible sheen observed in the WTP water, September 11th

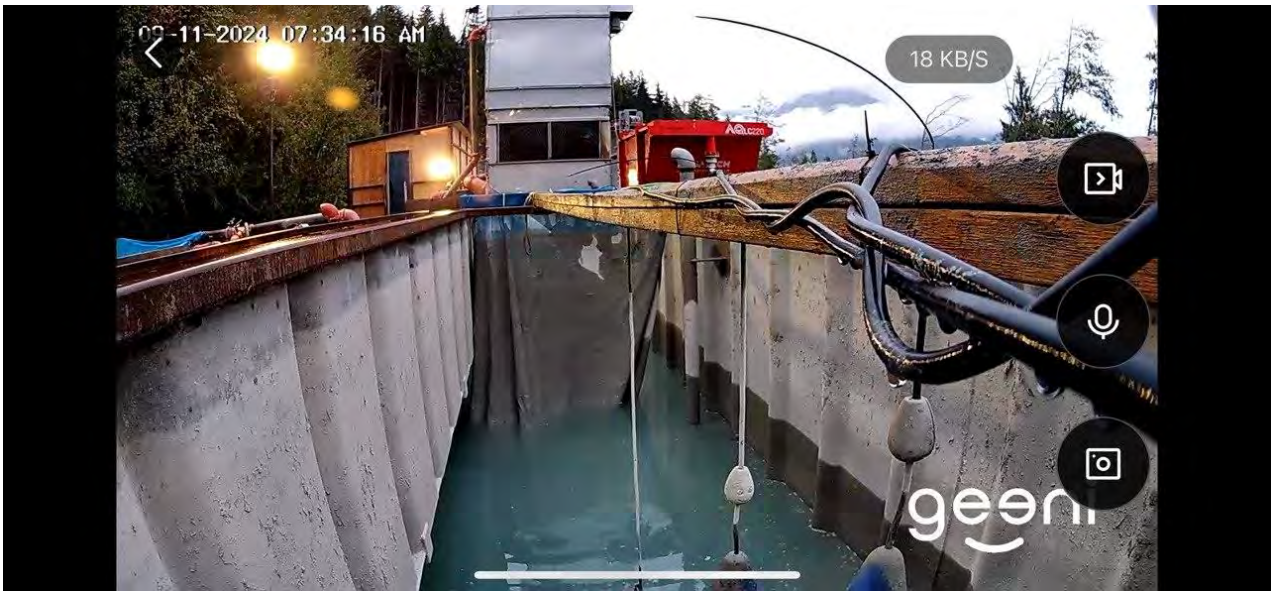

Photo 4: No visible sheen observed in the WTP water, September 12th

Photo 5: No visible sheen observed in the WTP water, September 13th

Photo 6: No visible sheen observed in the WTP water, September 14th

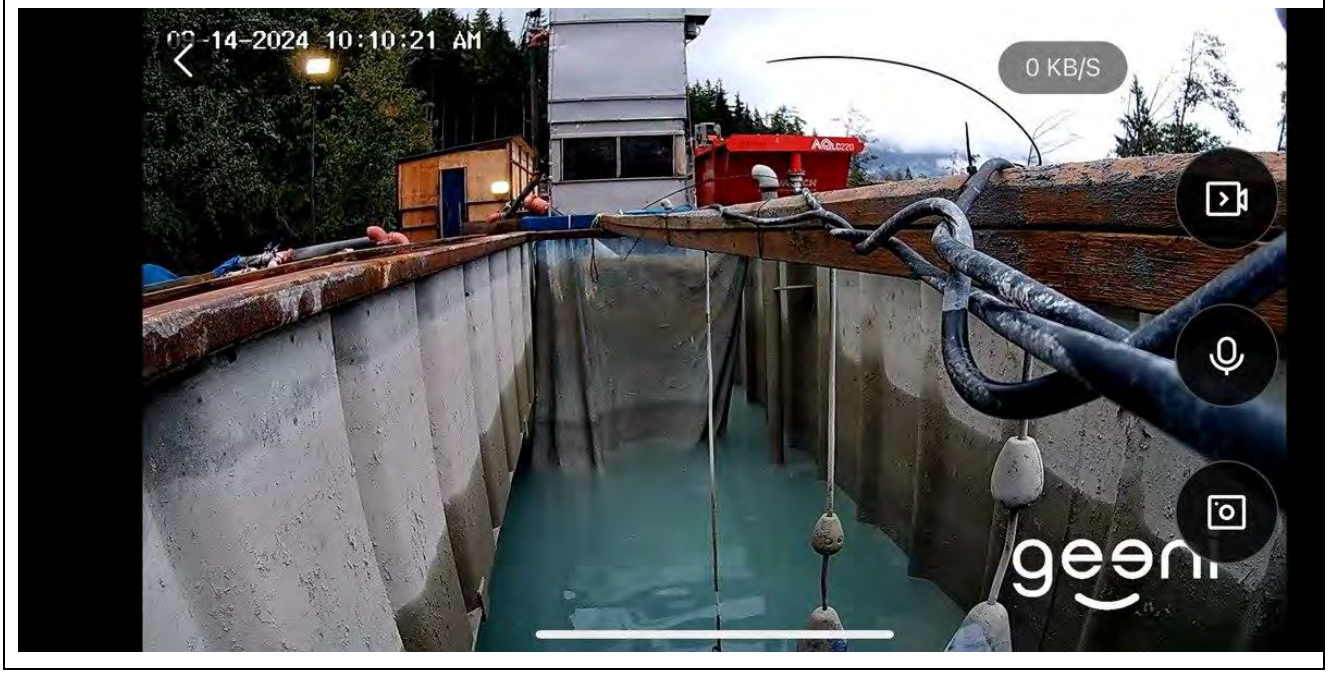

Photo 7: No visible sheen observed in the WTP water, September 15th


Appendix D: Woodfibre Site Receiving Environment Documentation

Woodfibre Site Receiving Environment Sample Analysis

TRITON Environmental Consultants	Sample ID	Reviewed and signed off by:	COLLEGE OF APPLIED BIOLOGISTS Farshad Shafiei RPBio 3781 CAB		Farshad Shafiei Ph.D., R.P.Bio.	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					VA24C3623-001	VA24C3623-002					
	Date Sampled					10-Sep-2024	10-Sep-2024					
	Time Sampled					09:51	11:37					
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	7.12	7.89		If natural pH < 6.5, no statisticaly significant decrease from background. No restriction in increase except in areas with unique flora or fauna. Unrestricted change permitted within range of 6.5 to 9.0. If natural pH > 9.0, no statistically significant increase from background. Refer to BC Water Quality Guidelines for more information.		Unrestricted change within this range (for protection of mollusc embryo development).	
Temperature (field)	°C	Short-term daily temperature guideline is 19°C for streams with unknown fish distribution Max +/- from BKG 1°C [4]	-	Short-term daily temperature guideline is 19°C for streams with unknown fish distribution Max +/- from BKG 1°C [4]	-	16.2	16.6		Guideline is species-dependent. Short-term daily temperature guideline is 19°C for streams with unknown fish distribution. Refer to footnote 4 for background temperature range for East Creek. Refer to BC Water Quality Guidelines for more information Hourly rate of change not to exceed 1°C. Calculation: US value +/- 1 = guideline range		Guideline for marine waters are based on natural ambient conditions. Max and min. 1°C change from natural condition. Natural temperature cycle characteristic of the site should not be altered in amplitude or frequency by human activities. Max rate of any human-induced temperature change not to exceed 0.5°C hourly. treams with unknown fish distribution. Refer to footnote 4 for background temperature range for East Creek. Calculation: US value +/- 1 = guideline range	
Conductivity (field)	µS/cm	-	-	-	-	41	134					
Turbidity (field)	NTU	Varies with background, see note Guideline = 8	Varies with background, see note Guideline = 3.87 5-week discrete sampling average = 1.81 (DS)	Varies with background, see note Guideline = 8	Varies with background, see note Guideline = 3.87 5-week discrete sampling average = 1.81 (DS)	0.03	0.73		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	8.61	7.67	DO from WLNG DS was manually sampled with YSI	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	-	-	-	-	9.9	45.8					
Total Dissolved Solids	mg/L	-	-	-	-	27	91					
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 = 3.00 (DS)	Varies with background, see note Guideline = 28	Varies with background, see note Guideline = 8.00 5-week discrete sampling average = 3.00 (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 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	-	-	-	-	2.29	0.6			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	9.8	52.6	Water treatment process has been increasing the total Alkalinity levels based on the levels seen at US1 site. Although this is not causing harm, but the treatment facility should be informed and asked to keep the levels like that of observed at US1. The WLNG EOP and DS1 sample has low sensitivity to acid inputs (i.e. high buffering capacity).		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 = 18.3	Varies with pH and temperature. See note. Guideline = 1.65	Varies with pH and temperature. See note. Guideline = 92	Varies with pH, temperature and salinity. See note. Guideline = 5.3	0.0114	< 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	0.75	1.48				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 Guideline =0.404	-	1.5	-	0.022	0.146		Guideline has interim status. Guideline is calculated with the following equation: Guideline = [-51.73 + 92.57 log10 (hardness)] * 0.01			
Nitrate (as N)	mg/L	32.8	3 5-week field average = 1.50 (US), 0.75 (DS)	-	3.7 5-week field average = 1.50 (US), 0.75 (DS)	0.0183	0.142					
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	0.0011		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	-	-	-	-	0.09	0.175					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.006	0.0075			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 = 218	-	-	2.75	5.83			Guidelines for hardness ranges below: Hardness 0 - 30: 128 Hardness 31 - 75: 218 Hardness 76 - 180: 309 Hardness 181 - 250: 429		
Total Metals												
Aluminum (Al)-Total	mg/L	-	Varies with pH, DOC, hardness Guideline = 0.179 5-week field average = 0.100 (US), 0.047 (DS)	-	-	0.0586	0.0377			Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated with the following equation: Guideline = (EXP((0.645 * LN(DOC)) + (2.255 * LN(hardness)) + (1.995 * pH) + (-0.284 * (LN(hardness) * pH))-9.898)/3/1000) If hardness or DOC is below the hardness range, the minimum hardness or DOC will be applied in the calculation.		
Antimony (Sb)-Total	mg/L	0.25	0.074	-	-	< 0.00010	0.00028					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.00015	0.00037					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.0053	0.0136			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	-	-	-	-	< 0.000050	< 0.000050					
Boron (B)-Total	mg/L	-	1.2	-	1.2	< 0.010	0.015					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	0.0000061	0.0000116					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	3.34	16.6					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000013	0.000021					
Chromium (Cr) - Total	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Chromium (Cr(III))-Total	mg/L	-	0.0089	-	0.056	< 0.00050	< 0.00050			Working guideline status		Working guideline status
Chromium (Cr(VI))-Total	mg/L	-	0.0025	-	0.0015	< 0.00050	< 0.00050			Working guideline status		Working guideline status
Cobalt (Co)-Total	mg/L	0.11	0.004	-	-	< 0.00010	< 0.00010					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002 5-week field average = 0.0013 (US), 0.0009 (DS)	0.00062	< 0.00050					
Iron (Fe)-Total	mg/L	1	-	-	-	0.085	0.033					
Lead (Pb)-Total	mg/L	Varies with hardness. See Note. Guideline = 0.004	Varies with hardness. See Note. Guideline = 0.004	0.14	0.002	< 0.000050	< 0.000050		Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline is 0.003 where hardness ≤8mg/L. Guideline uses equation EXP[1.273*on(hardness)-1.460] where hardness is 8-360 mg/L. Lowest value for guideline is 0.003 mg/L.	Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline equation EXP[1.273*on(hardness)-4.704] applies to samples with hardness 8-360 mg/L.		
Lithium (Li)-Total	mg/L	-	-	-	-	< 0.0010	0.0036					
Magnesium (Mg)-Total	mg/L	-	-	-	-	0.378	1.06					
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 0.82	Varies with hardness Guideline = 0.77	-	-	0.0023	0.0022		Guideline varies with hardness. The guideline is calculated using the following equation: Guideline = (0.0044 * hardness + 0.605) Guideline applies to samples with hardness 25-259 mg/L. Lowest value for guideline is 0.77 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.	Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. The guideline is calculated using the following formula: Guideline = (0.01102 * hardness + 0.54) Guideline applies to samples with hardness 37-450 mg/L. Lowest value for guideline is 0.81 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.		
Mercury (Hg)-Total	mg/L	-	Varies with methyl mercury Guideline = N/A	-	-	< 0.000005	< 0.000005			When MeHg ≤ 0.5% of total Hg, guideline is equal to 0.02 mg/L Guideline = 0.1/[MeHg/totalHg]. When MeHg ≤ 0.5% of total Hg, guideline is equal to 0.02 mg/L		
Molybdenum (Mo)-Total	mg/L	46	7.6	-	-	0.000591	0.0108					
Nickel (Ni)-Total	mg/L	-	Varies with hardness Guideline = 0.025	-	0.0083	< 0.00050	< 0.00050			Working guideline status. Guideline varies with hardness. Refer to BC Water Quality Guidelines for more information. Hardness 0 ≤ 60: 0.025 Hardness > 60 ≤ 180: Guideline = (EXP((0.76 * (LN(hardness)) + 1.06))/1000) Hardness ≥ 180: 0.15		Working guideline status
Phosphorus (P)-Total	mg/L	-	0.005 to 0.015	-	-	< 0.050	< 0.050			Guideline only applies to lakes with salmonid species being the dominant fish species. Guideline is for reference only and does not apply to site.		
Potassium (K)-Total	mg/L	-	-	-	-	0.309	2.21					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00092	0.00408					
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 guideliens for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guideliens and sampling guidance.		Guideline for marine aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guideliens for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guideliens and sampling guidance.
Silicon (Si)-Total	mg/L	-	-	-	-	5.17	5.79					
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	-	-	-	-	1.94	4.02					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0177	0.0473					
Sulfur (S)-Total	mg/L	-	-	-	-	0.86	2.08					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.0008	-	-	< 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	-	-	-	-	0.00071	0.00048					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00010	0.00023					
Uranium (U)-Total	mg/L	-	0.0085	-	-	0.000065	0.000998			Working guideline status		
Vanadium (V)-Total	mg/L	-	-	-	0.050	< 0.00050	< 0.00050					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	0.010	< 0.0030	< 0.0030					
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0375	0.0225					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.00010	0.00029					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00012	0.00034					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00451	0.013					
Beryllium (Be)-Dissolved	mg/L	-	-	-	-	< 0.000100	< 0.000100					
Bismuth (Bi)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Boron (B)-Dissolved	mg/L	-	-	-	-	< 0.010	0.017					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note Guideline = 0.000054	Varies with hardness, see note Guideline = 0.000096	-	-	< 0.0000050	0.000005		Guideline is hardness dependent. Guideline is appilcable to water hardness between 7.0 and 455 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(1.03 * (LN(hardness)) - 5.274)/1000) Lowest value for guideline is 0.000018 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.	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 guiedeline is 0.00004. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.		
Calcium (Ca)-Dissolved	mg/L	-	Categorical, see note	-	-	3.16	17.2	The upstream location has high sensitivity to acid inputs (i.e. low buffering capacity), while the downstream location has low sensitivity to acid inputs.		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	0.000024					
Chromium (Cr)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Cobalt (Co)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note Guideline = 0.002	Guideline varies with other parameters, see note Guideline = 0.0011 5-week field average = 0.0011 (US), 0.0007 (DS)	-	-	0.00051	0.00035		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	-	-	-	0.057	< 0.010					
Lead (Pb)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	< 0.0010	0.0037					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.335	1					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00135	0.00085					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.000526	0.0113					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	0.306	2.29					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00076	0.00393					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.00005	< 0.00005					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	4.72	5.38					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	1.82	3.99					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0162	0.0506					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	< 0.50	1.58					
Tellurium (Te)-Dissolved	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Thorium (Th)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Tin (Sn)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Titanium (Ti)-Dissolved	mg/L	-	-	-	-	< 0.00030	< 0.00030					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	< 0.00010	0.00024					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.000064	0.0011					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness Guideline = 0.009	Varies with pH, DOC, hardness Guideline = 0.0063 5-week field average = 0.0016 (US), 0.0024 (DS)	-	-	< 0.0010	0.002		Guideline varies with DOC and hardness. Guideline is calculated using the following formula: Guideline = (EXP((0.833 * (LN(hardness))) + (0.24 * (LN(DOC))) + 0.526)/2/1000) If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.	Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated using the following formula: Guideline = (EXP((0.974 * (LN(hardness))) - (0.815 * pH) + (0.398 * (LN(DOC))) + 4.625)/2/1000) Guideline only applies to water with pH between 6.5 and 8.13, DOC between 0.3 and 22.9 mg/L, anmd hardness between 23.4 and 399 mg/L. If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.		
Zirconium (Zr)-Dissolved	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Applied Guideline:		**British Columbia Approved and Working Water Quality Guidelines (NOV 2023) - BCAWWQG - Freshwater Aquatic Life** **British Columbia Approved and Working Water Quality Guidelines (NOV 2023) - BCAWWQG - Marine Aquatic Life**										
Color Key:	**Exceeds both FAL and MAL Guidelines**	**Exceeds FAL Short term Guideline**	***Exceeds FAL Long term Guideline***	**Exceeds MAL Short term Guideline**	***Exceeds MAL Long term Guideline***							
Color Key:		**Exceeds FAL Short and Long-Term Guideline**		**Exceeds MAL Short and Long-term Guidelines**								

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

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

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

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

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

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

Parameters Used to Calculate Guidelines

Analyte	Units	Measurement method	Values: WLNG US1 (Upstream)	Values: WLNG DS 1 (Downstream)
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations	7.12	7.89
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations	16.2	16.6
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations	0.03	0.73
Hardness (as CaCO3) (total)	mg/L	Laboratory tested total hardness taken at each respective sample site on the day of sampling used in guideline calculations	9.9	45.8
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations	2.29	0.6
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations	9.8	52.6
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations	0.75	1.48

Woodfibre Site Receiving Environment Lab Documentation

ALS Canada Ltd.

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CERTIFICATE OF ANALYSIS

Work Order	: **VA24C3623**	Page	: 1 of 6
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 10-Sep-2024 18:15
PO	: 11964 - Task 20- Phase 3C - 4C	Date Analysis Commenced	: 12-Sep-2024
C-O-C number	: ----	Issue Date	: 20-Sep-2024 15:47
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 Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
		Metals, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Inorganics, Waterloo, Ontario
		Metals, Waterloo, Ontario
		Inorganics, Calgary, Alberta
		Metals, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		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*
-	no units
°C	degrees celsius
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

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

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

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

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	10-Sep-2024 09:51	10-Sep-2024 11:37	----	----	----
						VA24C3623-001	VA24C3623-002	--------	--------	--------
						Result	Result	----	----	----
Field Tests										
Conductivity, field	----	EF001/VA	0.10	µS/cm		41.000	134.00	----	----	----
pH, field	----	EF001/VA	0.10	pH units		7.12	7.89	----	----	----
Temperature, field	----	EF001/VA	0.10	°C		16.2	16.6	----	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		9.27	47.1	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		9.90	45.8	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		27	91	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		<3.0	<3.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		9.8	52.6	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.0114	<0.0050	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L		0.75	1.48	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		0.022	0.146	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		0.0183	0.142	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L		<0.0010	0.0011	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L		0.090	0.175	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.0060	0.0075	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		2.75	5.83	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/CG	0.50	mg/L		2.29	0.60	----	----	----
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		0.0586	0.0377	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		<0.00010	0.00028	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	10-Sep-2024 09:51	10-Sep-2024 11:37	----	----	----
						VA24C3623-001	VA24C3623-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00015	0.00037	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00530	0.0136	----	----	----
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	0.015	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		0.0000061	0.0000116	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		3.34	16.6	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000013	0.000021	----	----	----
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		0.00062	<0.00050	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.085	0.033	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		<0.0010	0.0036	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		0.378	1.06	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.00230	0.00220	----	----	----
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		0.000591	0.0108	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		0.309	2.21	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00092	0.00408	----	----	----
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		5.17	5.79	----	----	----
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		1.94	4.02	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0177	0.0473	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		0.86	2.08	----	----	----
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	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	10-Sep-2024 09:51	10-Sep-2024 11:37	----	----	----
						VA24C3623-001	VA24C3623-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
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		0.00071	0.00048	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00010	0.00023	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.000065	0.000998	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		<0.0030	<0.0030	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0375	0.0225	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		<0.00010	0.00029	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00012	0.00034	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00451	0.0130	----	----	----
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	0.017	----	----	----
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		3.16	17.2	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000010	0.000024	----	----	----
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		0.00051	0.00035	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.057	<0.010	----	----	----
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	0.0037	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		0.335	1.00	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00135	0.00085	----	----	----
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		0.000526	0.0113	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	10-Sep-2024 09:51	10-Sep-2024 11:37	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C3623-001	VA24C3623-002	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	<0.050	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		0.306	2.29	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00076	0.00393	----	----	----
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		4.72	5.38	----	----	----
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		1.82	3.99	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0162	0.0506	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		<0.50	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		<0.00010	0.00024	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.000064	0.00110	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		<0.0010	0.0020	----	----	----
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	: **VA24C3623**	Page	: 1 of 15
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 10-Sep-2024 18:15
PO	: 11964 - Task 20- Phase 3C - 4C	Issue Date	: 20-Sep-2024 15:47
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 Matrix Spike outliers occur.
- Laboratory Control Sample (LCS) outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Laboratory Control Sample (LCS) Recoveries								
Total Metals	QC-1650417-002	----	Phosphorus, total	7723-14-0	E420	123 % MES	80.0-120%	Recovery greater than upper control limit
Dissolved Metals	QC-1650399-002	----	Sulfur, dissolved	7704-34-9	E421	77.7 % MES	80.0-120%	Recovery less than lower control limit

Result Qualifiers

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

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG DS 1	E298	10-Sep-2024	13-Sep-2024	28 days	3 days	✓	14-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG US 1	E298	10-Sep-2024	13-Sep-2024	28 days	3 days	✓	14-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG DS 1	E235.Br-L	10-Sep-2024	12-Sep-2024	28 days	2 days	✓	12-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG US 1	E235.Br-L	10-Sep-2024	12-Sep-2024	28 days	2 days	✓	12-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG DS 1	E235.Cl	10-Sep-2024	12-Sep-2024	28 days	2 days	✓	12-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG US 1	E235.Cl	10-Sep-2024	12-Sep-2024	28 days	2 days	✓	12-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG DS 1	E235.F	10-Sep-2024	12-Sep-2024	28 days	2 days	✓	12-Sep-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 : Fluoride in Water by IC										
HDPE										
WLNG US 1	E235.F	10-Sep-2024	12-Sep-2024	28 days	2 days	✓	12-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
WLNG DS 1	E235.NO3-L	10-Sep-2024	12-Sep-2024	3 days	2 days	✓	12-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
WLNG US 1	E235.NO3-L	10-Sep-2024	12-Sep-2024	3 days	2 days	✓	12-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
WLNG DS 1	E235.NO2-L	10-Sep-2024	12-Sep-2024	3 days	2 days	✓	12-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
WLNG US 1	E235.NO2-L	10-Sep-2024	12-Sep-2024	3 days	2 days	✓	12-Sep-2024	3 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
WLNG DS 1	E235.SO4	10-Sep-2024	12-Sep-2024	28 days	2 days	✓	12-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
WLNG US 1	E235.SO4	10-Sep-2024	12-Sep-2024	28 days	2 days	✓	12-Sep-2024	28 days	2 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
WLNG DS 1	E366	10-Sep-2024	13-Sep-2024	28 days	3 days	✓	15-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
WLNG US 1	E366	10-Sep-2024	13-Sep-2024	28 days	3 days	✓	15-Sep-2024	28 days	5 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG DS 1	E372-U	10-Sep-2024	13-Sep-2024	28 days	3 days	✓	14-Sep-2024	28 days	4 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG US 1	E372-U	10-Sep-2024	13-Sep-2024	28 days	3 days	✓	14-Sep-2024	28 days	4 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
WLNG DS 1	E509	10-Sep-2024	19-Sep-2024	28 days	9 days	✓	19-Sep-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
WLNG US 1	E509	10-Sep-2024	19-Sep-2024	28 days	9 days	✓	19-Sep-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
WLNG DS 1	E421	10-Sep-2024	19-Sep-2024	180 days	9 days	✓	20-Sep-2024	180 days	10 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
WLNG US 1	E421	10-Sep-2024	19-Sep-2024	180 days	9 days	✓	20-Sep-2024	180 days	10 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
WLNG DS 1	EF001	10-Sep-2024	----	----	----		13-Sep-2024	----	3 days	
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial - total (lab preserved)										
WLNG US 1	EF001	10-Sep-2024	----	----	----		13-Sep-2024	----	3 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG DS 1	E358-L	10-Sep-2024	17-Sep-2024	28 days	7 days	✓	19-Sep-2024	28 days	9 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG US 1	E358-L	10-Sep-2024	17-Sep-2024	28 days	7 days	✓	19-Sep-2024	28 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG DS 1	E290	10-Sep-2024	12-Sep-2024	14 days	2 days	✓	14-Sep-2024	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG US 1	E290	10-Sep-2024	12-Sep-2024	14 days	2 days	✓	14-Sep-2024	14 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG DS 1	E162	10-Sep-2024	----	----	----		17-Sep-2024	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG US 1	E162	10-Sep-2024	----	----	----		17-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG DS 1	E160	10-Sep-2024	----	----	----		17-Sep-2024	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG US 1	E160	10-Sep-2024	----	----	----		17-Sep-2024	7 days	7 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
WLNG DS 1	E532	10-Sep-2024	----	----	----		13-Sep-2024	28 days	3 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
WLNG US 1	E532	10-Sep-2024	----	----	----		13-Sep-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 (lab preserved)										
WLNG DS 1	E508	10-Sep-2024	18-Sep-2024	28 days	8 days	✓	18-Sep-2024	28 days	8 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
WLNG US 1	E508	10-Sep-2024	18-Sep-2024	28 days	8 days	✓	18-Sep-2024	28 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
WLNG DS 1	E420	10-Sep-2024	18-Sep-2024	180 days	8 days	✓	19-Sep-2024	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
WLNG US 1	E420	10-Sep-2024	18-Sep-2024	180 days	8 days	✓	19-Sep-2024	180 days	9 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG DS 1	E395	10-Sep-2024	----	----	----		12-Sep-2024	7 days	2 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG US 1	E395	10-Sep-2024	----	----	----		12-Sep-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	1647776	1	5	20.0	5.0	✓
Ammonia by Fluorescence	E298	1649938	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1647772	1	3	33.3	5.0	✓
Chloride in Water by IC	E235.Cl	1647767	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1659985	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1650399	0	19	0.0	5.0	×
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1656506	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	1647770	1	7	14.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1647768	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1647769	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1647771	1	10	10.0	5.0	✓
TDS by Gravimetry	E162	1656707	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1650301	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1658055	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1650417	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1649935	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1649936	1	9	11.1	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1647386	1	7	14.2	5.0	✓
TSS by Gravimetry	E160	1656684	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1647776	1	5	20.0	5.0	✓
Ammonia by Fluorescence	E298	1649938	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1647772	1	3	33.3	5.0	✓
Chloride in Water by IC	E235.Cl	1647767	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1659985	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1650399	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1656506	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	1647770	1	7	14.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1647768	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1647769	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1647771	1	10	10.0	5.0	✓
TDS by Gravimetry	E162	1656707	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1650301	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1658055	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1650417	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1649935	1	8	12.5	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1649936	1	9	11.1	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1647386	1	7	14.2	5.0	✓
TSS by Gravimetry	E160	1656684	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1647776	1	5	20.0	5.0	✓
Ammonia by Fluorescence	E298	1649938	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1647772	1	3	33.3	5.0	✓
Chloride in Water by IC	E235.Cl	1647767	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1659985	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1650399	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1656506	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	1647770	1	7	14.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1647768	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1647769	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1647771	1	10	10.0	5.0	✓
TDS by Gravimetry	E162	1656707	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1650301	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1658055	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1650417	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1649935	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1649936	1	9	11.1	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1647386	1	7	14.2	5.0	✓
TSS by Gravimetry	E160	1656684	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1649938	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1647772	1	3	33.3	5.0	✓
Chloride in Water by IC	E235.Cl	1647767	1	11	9.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1659985	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1650399	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1656506	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	1647770	1	7	14.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1647768	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1647769	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1647771	1	10	10.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1650301	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1658055	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1650417	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1649935	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1649936	1	9	11.1	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Sulfide by Colourimetry (Automated Flow)	E395	1647386	1	7	14.2	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 - Calgary	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 - Calgary	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	: **VA24C3623**	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	: 10-Sep-2024 18:15
PO	: 11964 - Task 20- Phase 3C - 4C	Date Analysis Commenced	: 12-Sep-2024
C-O-C number	: ----	Issue Date	: 20-Sep-2024 15:47
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Waterloo Inorganics, Waterloo, Ontario
		Waterloo Metals, Waterloo, Ontario
		Calgary Inorganics, Calgary, Alberta
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		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: 1647776)											
VA24C3631-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	173	173	0.0578%	20%	----
Physical Tests (QC Lot: 1656684)											
FJ2402724-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1656707)											
FJ2402724-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	162	160	2	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1647767)											
VA24C3623-001	WLNG US 1	Chloride	16887-00-6	E235.Cl	0.50	mg/L	0.75	0.75	0.005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1647768)											
VA24C3623-001	WLNG US 1	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0183	0.0241	0.0059	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1647769)											
VA24C3623-001	WLNG US 1	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: 1647770)											
VA24C3623-001	WLNG US 1	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.022	0.021	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1647771)											
VA24C3623-001	WLNG US 1	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	2.75	2.74	0.01	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1647772)											
VA24C3623-001	WLNG US 1	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1649935)											
VA24C3623-001	WLNG US 1	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.090	0.088	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1649936)											
VA24C3895-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0022	0.0025	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1649938)											
YL2401433-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0397	0.0379	0.0018	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1656506)											
FJ2402706-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.30	2.43	0.13	Diff <2x LOR	----
Total Sulfides (QC Lot: 1647386)											
VA24C3596-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0075	mg/L	0.0743	0.0746	0.0002	Diff <2x LOR	----
Total Metals (QC Lot: 1650417)											
VA24C3623-001	WLNG US 1	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0586	0.0573	2.31%	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: 1650417) - continued											
VA24C3623-001	WLNG US 1	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00015	0.00016	0.00002	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.00530	0.00519	1.99%	20%	----
		Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000061	0.0000056	0.0000005	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	3.34	3.46	3.68%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000013	0.000012	0.0000004	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	0.00062	0.00061	0.000008	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.085	0.084	0.001	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	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	0.378	0.372	1.57%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00230	0.00221	4.32%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000591	0.000582	1.52%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	0.309	0.308	0.0009	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00092	0.00090	0.00001	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	5.17	5.07	1.95%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	1.94	1.99	2.44%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0177	0.0183	3.19%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	0.86	0.89	0.02	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	0.00071	0.00127	0.00056	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	0.000065	0.000068	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: 1650417) - continued											
VA24C3623-001	WLNG US 1	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: 1658055)											
VA24C3583-005	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1659985)											
VA24C3620-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1650301)											
VA24C3563-015	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: 1647776)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1656684)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1656707)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1647767)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1647768)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1647769)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1647770)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1647771)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1647772)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1649935)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1649936)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1649938)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1656506)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1647386)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1650417)						
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: 1650417) - 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: 1658055)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1650399)						
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: 1650399) - 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: 1659985)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1650301)						
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: 1647776)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	99.3	85.0	115	----
Physical Tests (QCLot: 1656684)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	98.5	85.0	115	----
Physical Tests (QCLot: 1656707)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	109	85.0	115	----
Anions and Nutrients (QCLot: 1647767)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1647768)									
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: 1647769)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1647770)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1647771)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1647772)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.3	85.0	115	----
Anions and Nutrients (QCLot: 1649935)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	93.3	75.0	125	----
Anions and Nutrients (QCLot: 1649936)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	92.5	80.0	120	----
Anions and Nutrients (QCLot: 1649938)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	101	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1656506)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	81.2	80.0	120	----
Total Sulfides (QCLot: 1647386)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	105	80.0	120	----
Total Metals (QCLot: 1650417)									

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: 1650417) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	110	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	106	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	105	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	102	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	101	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	105	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	103	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	102	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	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	96.0	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	104	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	103	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	105	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	99.2	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	# 123	80.0	120	MES
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	99.2	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	99.4	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	103	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	97.0	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	105	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	94.5	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	103	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	96.8	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	98.6	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	97.1	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: 1650417) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	99.5	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	103	80.0	120	----
Total Metals (QCLot: 1658055)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	91.6	80.0	120	----
Dissolved Metals (QCLot: 1650399)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	95.0	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	92.6	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	98.7	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	94.4	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	100	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	100	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	98.7	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	94.5	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	97.3	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	95.9	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	97.0	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	95.4	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	94.3	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	96.0	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	97.7	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	94.0	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	97.0	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	94.2	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	96.7	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	94.1	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	95.6	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.4	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	94.7	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	95.2	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	99.0	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	89.6	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	99.8	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	97.1	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	# 77.7	80.0	120	MES

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: 1650399) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	87.6	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	96.3	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	98.4	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	95.2	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	86.9	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	91.7	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.4	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	95.8	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	96.9	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	95.8	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	98.6	80.0	120	----
Speciated Metals (QCLot: 1650301)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	99.3	80.0	120	----

Qualifiers

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

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: 1647767)										
VA24C3623-002	WLNG DS 1	Chloride	16887-00-6	E235.Cl	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1647768)										
VA24C3623-002	WLNG DS 1	Nitrate (as N)	14797-55-8	E235.NO3-L	2.54 mg/L	2.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1647769)										
VA24C3623-002	WLNG DS 1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.519 mg/L	0.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1647770)										
VA24C3623-002	WLNG DS 1	Fluoride	16984-48-8	E235.F	1.05 mg/L	1 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1647771)										
VA24C3623-002	WLNG DS 1	Sulfate (as SO4)	14808-79-8	E235.SO4	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1647772)										
VA24C3623-002	WLNG DS 1	Bromide	24959-67-9	E235.Br-L	0.499 mg/L	0.5 mg/L	99.8	75.0	125	----
Anions and Nutrients (QCLot: 1649935)										
VA24C3623-002	WLNG DS 1	Nitrogen, total	7727-37-9	E366	0.375 mg/L	0.4 mg/L	93.8	70.0	130	----
Anions and Nutrients (QCLot: 1649936)										
VA24C3936-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0472 mg/L	0.05 mg/L	94.3	70.0	130	----
Anions and Nutrients (QCLot: 1649938)										
YL2401433-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1656506)										
FJ2402706-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	5.13 mg/L	5 mg/L	103	70.0	130	----
Total Sulfides (QCLot: 1647386)										
VA24C3596-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.177 mg/L	0.2 mg/L	88.7	75.0	125	----
Total Metals (QCLot: 1650417)										
VA24C3623-002	WLNG DS 1	Aluminum, total	7429-90-5	E420	0.199 mg/L	0.2 mg/L	99.7	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0193 mg/L	0.02 mg/L	96.7	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0198 mg/L	0.02 mg/L	99.3	70.0	130	----
		Barium, total	7440-39-3	E420	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0395 mg/L	0.04 mg/L	98.8	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00961 mg/L	0.01 mg/L	96.1	70.0	130	----
		Boron, total	7440-42-8	E420	0.097 mg/L	0.1 mg/L	97.4	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00395 mg/L	0.004 mg/L	98.8	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0102 mg/L	0.01 mg/L	102	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0378 mg/L	0.04 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
Total Metals (QCLot: 1650417) - continued										
VA24C3623-002	WLNG DS 1	Cobalt, total	7440-48-4	E420	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	----
		Copper, total	7440-50-8	E420	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		Iron, total	7439-89-6	E420	1.89 mg/L	2 mg/L	94.4	70.0	130	----
		Lead, total	7439-92-1	E420	0.0190 mg/L	0.02 mg/L	95.3	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0944 mg/L	0.1 mg/L	94.4	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0182 mg/L	0.02 mg/L	91.3	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0382 mg/L	0.04 mg/L	95.6	70.0	130	----
		Phosphorus, total	7723-14-0	E420	10.7 mg/L	10 mg/L	107	70.0	130	----
		Potassium, total	7440-09-7	E420	3.89 mg/L	4 mg/L	97.3	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0190 mg/L	0.02 mg/L	95.0	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Silicon, total	7440-21-3	E420	9.49 mg/L	10 mg/L	94.9	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	19.2 mg/L	20 mg/L	96.2	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0411 mg/L	0.04 mg/L	103	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00382 mg/L	0.004 mg/L	95.5	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0196 mg/L	0.02 mg/L	98.3	70.0	130	----
		Tin, total	7440-31-5	E420	0.0196 mg/L	0.02 mg/L	98.1	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0371 mg/L	0.04 mg/L	92.7	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0187 mg/L	0.02 mg/L	93.4	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00387 mg/L	0.004 mg/L	96.8	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0966 mg/L	0.1 mg/L	96.6	70.0	130	----
		Zinc, total	7440-66-6	E420	0.380 mg/L	0.4 mg/L	95.1	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
Total Metals (QCLot: 1658055)										
VA24C3583-006	Anonymous	Mercury, total	7439-97-6	E508	0.0000899 mg/L	0 mg/L	89.9	70.0	130	----
Dissolved Metals (QCLot: 1650399)										
FJ2402707-029	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.193 mg/L	0.2 mg/L	96.7	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0185 mg/L	0.02 mg/L	92.4	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0376 mg/L	0.04 mg/L	94.1	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00916 mg/L	0.01 mg/L	91.6	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.094 mg/L	0.1 mg/L	94.2	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00392 mg/L	0.004 mg/L	98.0	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00946 mg/L	0.01 mg/L	94.6	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0392 mg/L	0.04 mg/L	97.9	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1650399) - continued										
FJ2402707-029	Anonymous	Copper, dissolved	7440-50-8	E421	0.0188 mg/L	0.02 mg/L	93.8	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.90 mg/L	2 mg/L	95.1	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0181 mg/L	0.02 mg/L	90.4	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0893 mg/L	0.1 mg/L	89.3	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0386 mg/L	0.04 mg/L	96.5	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	4.01 mg/L	4 mg/L	100	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0389 mg/L	0.04 mg/L	97.4	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	8.66 mg/L	10 mg/L	86.6	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00373 mg/L	0.004 mg/L	93.2	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	1.95 mg/L	2 mg/L	97.4	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	19.2 mg/L	20 mg/L	95.8	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0388 mg/L	0.04 mg/L	97.1	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00351 mg/L	0.004 mg/L	87.7	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0189 mg/L	0.02 mg/L	94.5	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0376 mg/L	0.04 mg/L	94.1	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0177 mg/L	0.02 mg/L	88.5	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00379 mg/L	0.004 mg/L	94.7	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0977 mg/L	0.1 mg/L	97.7	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.390 mg/L	0.4 mg/L	97.6	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0377 mg/L	0.04 mg/L	94.3	70.0	130	----
Dissolved Metals (QCLot: 1659985)										
VA24C3620-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000980 mg/L	0 mg/L	98.0	70.0	130	----
Speciated Metals (QCLot: 1650301)										
VA24C3563-015	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0394 mg/L	0.04 mg/L	98.6	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:	
	he final report
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 Report Format: ☑ ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fa
Email 2
Email 3
Select Invoic
Email 1 or Fa
Email 2

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: 18 - Sept - 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:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only): C3623

ALS Contact: Sampler:

Analysis Request

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total metals + mercury	Dissolved metals + mercury	Total hexavalent chromium	Total trivalent chromium	TSS	TDS	Nutrients (ammonia, ammonium, total nitrogen, total phosphorus)	Total sulfide (low) (as H2S), Unionized Sulfide (low)	Anions scan (Br, Cl, F, NO2, NO3, SO4)	General parameters (alkalinity)	DOC	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
						F					P	P			F/P			
	WLNG US 1	10-Sep-24	09:51	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 7.12 cond: 41 µS/cm temp: 16.2 °C																	
	WLNG DS 1	10-Sep-24	11:37	Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 7.89 cond: 134 µS/cm temp: 16.6 °C																	
	~~Duplicate~~			~~Water~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~		~~N~~	~~9~~
	~~Field Blank~~			~~Water~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~		~~N~~	~~9~~
	~~Trip Blank~~			~~Water~~	~~R~~		~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~			~~N~~	~~9~~

Environmental Division
Vancouver
Work Order Reference
VA24C3623

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 below

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			
				17			

RELEASE (client use)

10 Sept 24 Time: 17:07

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Sept 10 Time: 6:15 pm

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

2024-9-10-Chycoski-D5A70

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	09/10/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.668727 -123.248676
Temperature(c):	Low 15 High 21	**Permit:**	PE 110136
Weather Conditions:	Clear	**Ground Conditions:**	Dry

Observations

Time: 11:37:00 **Flow Volume (visual):** low

Notes: DO: 7.67 mg/L, Salinity: 0.08 ppt, ORP: 224.6 mV. DS sonde is out due to nearby construction so WQ parameters above were taken manually with YSI.

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

Photos

Photo: 3

Location: EAS DS 1

Description: DS view

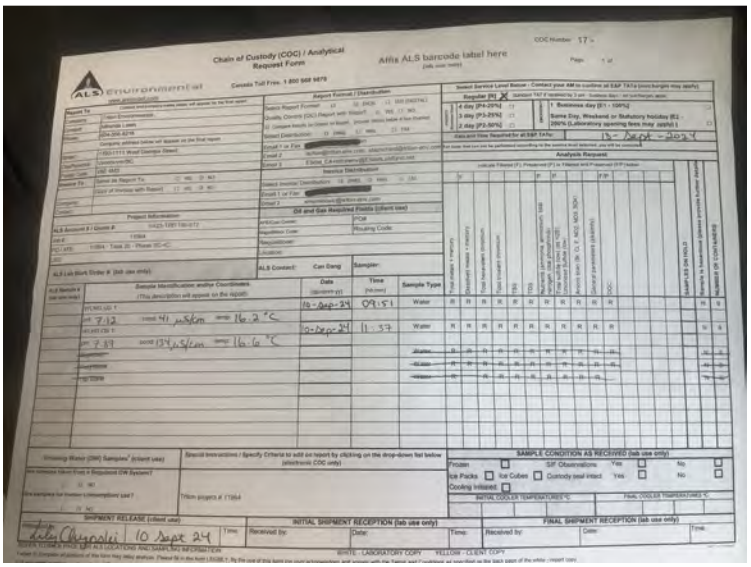

Photo: 4

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

2024-9-10-Chycoski-76194

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	09/10/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.669455 -123.25087
Temperature(c):	Low 15 High 21	**Permit:**	PE 110136
Weather Conditions:	Clear	**Ground Conditions:**	Dry

Observations

Time: 09:51:00 **Flow Volume (visual):** low

Notes:

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

Samples Collected - Parameters

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

2024-9-10-Chycoski-76194

Photos

Photo: 1

Location: EAS US 1

Description: US view

Photo: 2

Location: EAS US 1

Description: Across view

Photos

Photo: 3

Location: EAS US 1

Description: DS view

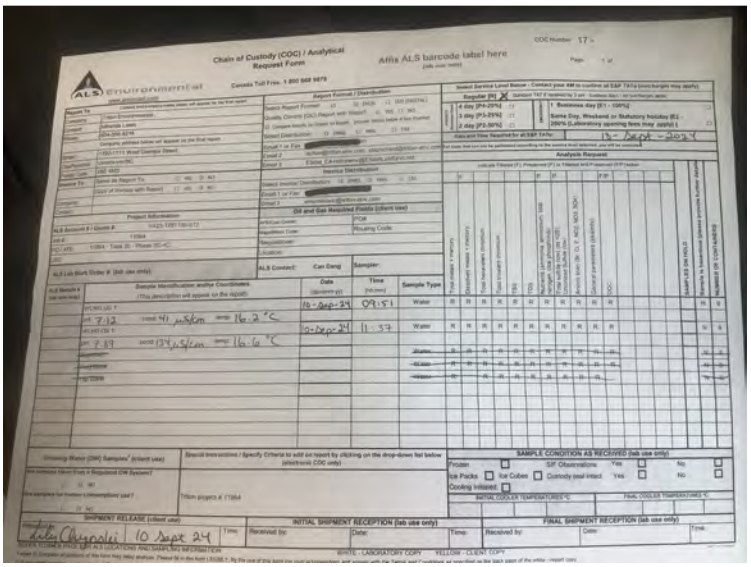

Photo: 4

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:			

EGP-STU-003 (WLNG US) 2024-09-09 to 2024-09-15

Received	Temperature C	Specific Conductivity µS/cm	Salinity PSU	pH pH	ORP mV	Dissolved Oxygen Concentration mg/L	Turbidity NTU
9/15/2024 23:50	14.17	24.47	0.01	7.16	426.4	8.86	0.43
9/15/2024 23:40	14.2	24.59	0.01	7.13	427.16	8.85	0.44
9/15/2024 23:30	14.22	24.68	0.01	7.13	427.66	8.85	0.45
9/15/2024 23:20	14.24	24.61	0.01	7.13	426.95	8.83	0.44
9/15/2024 23:10	14.27	24.53	0.01	7.13	427.39	8.81	0.43
9/15/2024 23:00	14.3	24.79	0.01	7.15	425.37	8.84	0.41
9/15/2024 22:50	14.33	24.7	0.01	7.18	423.91	8.81	0.45
9/15/2024 22:40	14.36	24.79	0.01	7.12	426.44	8.8	0.43
9/15/2024 22:30	14.39	24.77	0.01	7.18	423.86	8.81	0.43
9/15/2024 22:20	14.42	24.87	0.01	7.12	425.83	8.82	0.43
9/15/2024 22:10	14.45	24.66	0.01	7.15	425.54	8.78	0.47
9/15/2024 22:00	14.47	24.83	0.01	7.13	426.18	8.79	0.47
9/15/2024 21:50	14.5	24.86	0.01	7.16	424.53	8.77	0.44
9/15/2024 21:40	14.53	24.96	0.01	7.14	424.45	8.79	0.46
9/15/2024 21:30	14.55	24.77	0.01	7.16	423.9	8.76	0.48
9/15/2024 21:20	14.58	24.94	0.01	7.13	424.55	8.75	0.46
9/15/2024 21:10	14.6	25.01	0.01	7.17	422.85	8.75	0.45
9/15/2024 21:00	14.63	24.99	0.01	7.13	423.8	8.75	0.46
9/15/2024 20:50	14.65	24.71	0.01	7.21	420.35	8.72	0.45
9/15/2024 20:40	14.68	24.99	0.01	7.13	424.01	8.72	0.48
9/15/2024 20:30	14.7	24.98	0.01	7.16	422.71	8.74	0.46
9/15/2024 20:20	14.72	24.96	0.01	7.13	423.26	8.73	0.49
9/15/2024 20:10	14.74	24.91	0.01	7.15	422.23	8.73	0.45
9/15/2024 20:00	14.77	24.98	0.01	7.14	421.78	8.71	3.91
9/15/2024 19:50	14.79	24.98	0.01	7.17	420.12	8.7	0.5
9/15/2024 19:40	14.82	25	0.01	7.14	420.73	8.73	0.48
9/15/2024 19:30	14.84	25	0.01	7.15	420.62	8.7	0.47
9/15/2024 19:20	14.86	25.01	0.01	7.14	420.16	8.72	0.47
9/15/2024 19:10	14.89	24.88	0.01	7.16	418.95	8.73	0.47
9/15/2024 19:00	14.91	25.03	0.01	7.15	418.62	8.73	0.47
9/15/2024 18:50	14.93	24.97	0.01	7.17	417.55	8.73	0.5
9/15/2024 18:40	14.95	24.96	0.01	7.15	417.31	8.72	0.45
9/15/2024 18:30	14.97	24.94	0.01	7.14	418.3	8.74	0.46
9/15/2024 18:20	14.99	24.96	0.01	7.15	416.48	8.73	0.47
9/15/2024 18:10	15.01	24.94	0.01	7.22	412.76	8.73	0.46
9/15/2024 18:00	15.03	24.91	0.01	7.17	414.58	8.75	0.48
9/15/2024 17:50	15.04	24.95	0.01	7.18	413.61	8.77	0.5
9/15/2024 17:40	15.05	24.9	0.01	7.17	412.7	8.75	0.49
9/15/2024 17:30	15.06	24.74	0.01	7.21	411.21	8.77	0.48
9/15/2024 17:20	15.05	24.93	0.01	7.18	411.04	8.77	0.48
9/15/2024 17:10	15.05	24.74	0.01	7.2	410.65	8.78	0.46
9/15/2024 17:00	15.05	24.89	0.01	7.2	410.45	8.78	0.49
9/15/2024 16:50	15.06	24.81	0.01	7.21	410.04	8.81	0.48

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9/15/2024 16:40	15.07	24.86	0.01	7.21	409.45	8.81	0.48
9/15/2024 16:30	15.08	24.68	0.01	7.21	409.5	8.81	0.48
9/15/2024 16:20	15.1	24.95	0.01	7.22	407.51	8.84	0.48
9/15/2024 16:10	15.13	24.97	0.01	7.23	407.35	8.84	0.46
9/15/2024 16:00	15.16	24.9	0.01	7.23	405.94	8.84	0.47
9/15/2024 15:50	15.19	24.91	0.01	7.25	405.44	8.89	0.49
9/15/2024 15:40	15.21	24.96	0.01	7.24	403.5	8.9	0.48
9/15/2024 15:30	15.23	24.93	0.01	7.3	400.55	8.93	0.49
9/15/2024 15:20	15.24	24.89	0.01	7.27	401.13	8.94	0.47
9/15/2024 15:10	15.23	24.7	0.01	7.29	400.48	8.97	0.48
9/15/2024 15:00	15.2	25.07	0.01	7.27	400.46	8.99	0.5
9/15/2024 14:50	15.15	24.57	0.01	7.28	400.47	9.01	0.46
9/15/2024 14:40	15.11	24.97	0.01	7.27	399.37	9.01	0.5
9/15/2024 14:30	15.07	24.85	0.01	7.3	397.88	9.04	0.47
9/15/2024 14:20	15.05	25	0.01	7.27	398.08	9.06	0.5
9/15/2024 14:10	15.02	24.97	0.01	7.26	398.94	9.07	0.61
9/15/2024 14:00	15	25.06	0.01	7.27	396.62	9.08	0.48
9/15/2024 13:50	14.97	25.05	0.01	7.28	396.67	9.13	0.47
9/15/2024 13:40	14.96	25.04	0.01	7.27	395.65	9.11	0.49
9/15/2024 13:30	14.92	24.86	0.01	7.28	395.43	9.13	0.47
9/15/2024 13:20	14.88	25.16	0.01	7.28	394.67	9.16	0.48
9/15/2024 13:10	14.82	25.17	0.01	7.31	393.96	9.17	0.47
9/15/2024 13:00	14.76	25.15	0.01	7.28	395.65	9.17	0.44
9/15/2024 12:50	14.71	25.2	0.01	7.29	394.76	9.19	0.45
9/15/2024 12:40	14.68	25.32	0.01	7.27	394.91	9.2	0.45
9/15/2024 12:30	14.66	25.29	0.01	7.28	395.19	9.2	0.47
9/15/2024 12:20	14.68	25.4	0.01	7.28	393.92	9.21	0.48
9/15/2024 12:10	14.7	25.07	0.01	7.29	393.34	9.23	0.45
9/15/2024 12:00	14.74	25.45	0.01	7.3	392.19	9.25	0.48
9/15/2024 11:50	14.73	25.39	0.01	7.33	391.4	9.23	0.47
9/15/2024 11:40	14.73	25.52	0.01	7.3	392.64	9.26	0.47
9/15/2024 11:30	14.73	25.41	0.01	7.29	393.63	9.28	0.46
9/15/2024 11:20	14.76	25.46	0.01	7.3	393.1	9.27	0.55
9/15/2024 11:10	14.73	25.44	0.01	7.3	394.19	9.32	0.46
9/15/2024 11:00	14.7	25.51	0.01	7.3	395.68	9.32	0.44
9/15/2024 10:50	14.6	25.63	0.01	7.31	397.52	9.3	0.47
9/15/2024 10:40	14.5	25.6	0.01	7.3	400.08	9.35	0.44
9/15/2024 10:30	14.36	25.62	0.01	7.31	401.89	9.32	0.45
9/15/2024 10:20	14.2	25.7	0.01	7.29	405.14	9.34	0.45
9/15/2024 10:10	14.05	25.68	0.01	7.28	407.59	9.34	0.42
9/15/2024 10:00	13.91	25.69	0.01	7.25	410.19	9.31	0.41
9/15/2024 9:50	13.77	25.77	0.01	7.24	412.35	9.28	0.4
9/15/2024 9:40	13.73	25.97	0.01	7.23	413.5	9.26	0.4
9/15/2024 9:30	13.69	25.87	0.01	7.25	414.45	9.28	0.41
9/15/2024 9:20	13.66	25.93	0.01	7.22	416.85	9.25	0.4
9/15/2024 9:10	13.61	26.1	0.01	7.25	417.19	9.23	0.63
9/15/2024 9:00	13.58	26.21	0.01	7.21	419.57	9.23	0.43

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9/15/2024 8:50	13.54	26.12	0.01	7.2	421.42	9.2	0.41
9/15/2024 8:40	13.52	26.33	0.01	7.2	421.2	9.19	0.4
9/15/2024 8:30	13.52	26.19	0.01	7.2	422.13	9.21	0.42
9/15/2024 8:20	13.5	26.32	0.01	7.19	422.81	9.15	0.4
9/15/2024 8:10	13.5	26.47	0.01	7.18	423.93	9.09	0.38
9/15/2024 8:00	13.49	26.64	0.01	7.18	423.48	9.11	0.39
9/15/2024 7:50	13.5	26.58	0.01	7.21	422.71	9.12	0.41
9/15/2024 7:40	13.5	26.8	0.01	7.17	424.45	9.09	0.42
9/15/2024 7:30	13.5	26.74	0.01	7.2	423.37	9.07	0.4
9/15/2024 7:20	13.51	26.88	0.01	7.17	424.43	9.07	0.46
9/15/2024 7:10	13.51	26.59	0.01	7.19	424.02	9.05	0.39
9/15/2024 7:00	13.52	26.96	0.01	7.16	424.73	9.06	0.42
9/15/2024 6:50	13.52	27.12	0.01	7.21	422.29	9.04	0.42
9/15/2024 6:40	13.53	27.19	0.01	7.17	424.22	9.04	0.39
9/15/2024 6:30	13.54	27.28	0.01	7.15	425.2	9.03	0.55
9/15/2024 6:20	13.55	27.36	0.01	7.16	423.68	9.04	0.41
9/15/2024 6:10	13.55	27.04	0.01	7.19	422.43	9.03	0.39
9/15/2024 6:00	13.56	27.39	0.01	7.16	423.71	9.04	0.41
9/15/2024 5:50	13.57	27.44	0.01	7.15	424.53	9.02	0.41
9/15/2024 5:40	13.58	27.51	0.01	7.16	423.56	9.02	0.4
9/15/2024 5:30	13.59	27.6	0.01	7.17	423.16	9.02	0.39
9/15/2024 5:20	13.59	27.85	0.01	7.16	422.54	9.01	0.41
9/15/2024 5:10	13.6	27.42	0.01	7.17	422.34	8.99	0.4
9/15/2024 5:00	13.61	27.97	0.01	7.17	421.79	9.03	0.4
9/15/2024 4:50	13.62	27.8	0.01	7.15	422.71	9	0.4
9/15/2024 4:40	13.63	28.13	0.01	7.16	421.51	9.02	0.41
9/15/2024 4:30	13.64	28.13	0.01	7.19	420.18	9.01	0.42
9/15/2024 4:20	13.65	28.4	0.01	7.17	420.31	9.01	0.43
9/15/2024 4:10	13.66	28.29	0.01	7.18	420.47	8.98	0.39
9/15/2024 4:00	13.67	28.64	0.01	7.17	419.4	9	0.44
9/15/2024 3:50	13.68	28.38	0.01	7.21	418.22	8.99	0.42
9/15/2024 3:40	13.69	28.89	0.01	7.18	418.75	9.01	0.43
9/15/2024 3:30	13.7	28.83	0.01	7.18	419.49	8.99	0.74
9/15/2024 3:20	13.71	29.09	0.01	7.17	418.8	9	0.46
9/15/2024 3:10	13.71	29.2	0.01	7.17	418.93	9	0.42
9/15/2024 3:00	13.72	29.41	0.01	7.17	417.84	8.99	0.43
9/15/2024 2:50	13.72	29.3	0.01	7.2	416.69	9	0.41
9/15/2024 2:40	13.73	29.75	0.01	7.18	416.67	9	0.43
9/15/2024 2:30	13.74	29.87	0.01	7.17	417.23	9	0.42
9/15/2024 2:20	13.74	29.97	0.01	7.17	416.32	9	0.43
9/15/2024 2:10	13.75	30.18	0.01	7.24	412.82	8.98	0.42
9/15/2024 2:00	13.76	30.39	0.01	7.17	415.66	9.01	0.43
9/15/2024 1:50	13.77	30.56	0.01	7.19	414.99	8.97	0.41
9/15/2024 1:40	13.78	31	0.02	7.19	413.81	8.98	0.42
9/15/2024 1:30	13.79	30.83	0.01	7.17	414.85	8.99	0.41
9/15/2024 1:20	13.8	31.44	0.02	7.18	413.07	8.99	0.42
9/15/2024 1:10	13.81	31.45	0.02	7.22	411.23	8.96	0.41

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9/15/2024 1:00	13.83	31.96	0.02	7.18	412.67	8.97	0.41
9/15/2024 0:50	13.84	32.01	0.02	7.2	411.52	8.97	0.43
9/15/2024 0:40	13.85	32.46	0.02	7.18	411.87	8.98	0.45
9/15/2024 0:30	13.86	32.88	0.02	7.22	409.7	8.98	0.43
9/15/2024 0:20	13.88	33.26	0.02	7.19	410.09	8.96	0.42
9/15/2024 0:10	13.9	33.49	0.02	7.2	409.38	8.95	0.42
9/15/2024 0:00	13.91	34.09	0.02	7.19	408.85	8.96	0.42
9/14/2024 23:50	13.93	34.39	0.02	7.22	406.79	8.96	0.47
9/14/2024 23:40	13.95	34.91	0.02	7.2	407.14	8.94	0.43
9/14/2024 23:30	13.96	35.4	0.02	7.21	406.32	8.95	0.43
9/14/2024 23:20	13.97	36.01	0.02	7.21	405.59	8.94	0.43
9/14/2024 23:10	13.99	36.58	0.02	7.21	404.94	8.94	0.4
9/14/2024 23:00	14.01	37.48	0.02	7.22	404.04	8.95	0.43
9/14/2024 22:50	14.02	38.06	0.02	7.2	404.9	8.95	0.41
9/14/2024 22:40	14.04	39	0.02	7.21	403.06	8.94	0.45
9/14/2024 22:30	14.06	40.06	0.02	7.22	402.75	8.95	0.45
9/14/2024 22:20	14.08	41.06	0.02	7.22	401.37	8.93	0.43
9/14/2024 22:10	14.09	42.45	0.02	7.24	399.65	8.93	0.42
9/14/2024 22:00	14.12	43.87	0.02	7.23	399.07	8.92	0.45
9/14/2024 21:50	14.14	45.14	0.02	7.23	399	8.94	0.45
9/14/2024 21:40	14.16	47.01	0.02	7.23	397.89	8.91	0.45
9/14/2024 21:30	14.18	48.59	0.02	7.25	397.17	8.92	0.43
9/14/2024 21:20	14.21	50.82	0.03	7.25	396.29	8.91	0.44
9/14/2024 21:10	14.24	53.05	0.03	7.26	395.14	8.9	0.45
9/14/2024 21:00	14.28	55.59	0.03	7.25	394.43	8.89	0.51
9/14/2024 20:50	14.31	58.18	0.03	7.26	393.34	8.88	0.45
9/14/2024 20:40	14.35	61.49	0.03	7.26	391.92	8.87	0.44
9/14/2024 20:30	14.37	63.47	0.03	7.26	391.62	8.88	0.44
9/14/2024 20:20	14.41	67.01	0.03	7.27	390.12	8.86	0.46
9/14/2024 20:10	14.43	69.67	0.04	7.28	389.25	8.85	0.44
9/14/2024 20:00	14.47	73.38	0.04	7.29	387.47	8.86	0.46
9/14/2024 19:50	14.5	77.03	0.04	7.29	386.52	8.85	0.45
9/14/2024 19:40	14.53	81.92	0.04	7.31	384.61	8.86	0.44
9/14/2024 19:30	14.55	85.64	0.04	7.31	384.3	8.86	0.43
9/14/2024 19:20	14.58	92.79	0.05	7.33	382.45	8.84	0.45
9/14/2024 19:10	14.61	99.05	0.05	7.34	381.4	8.85	0.45
9/14/2024 19:00	14.63	106.06	0.06	7.34	380.13	8.87	0.48
9/14/2024 18:50	14.65	112.86	0.06	7.34	379.94	8.88	0.49
9/14/2024 18:40	14.67	123.55	0.07	7.36	378.67	8.87	0.49
9/14/2024 18:30	14.69	132.86	0.07	7.37	378.93	8.86	0.49
9/14/2024 18:20	14.7	144.73	0.08	7.38	377.93	8.87	0.5
9/14/2024 18:10	14.72	154.72	0.08	7.39	377.89	8.88	0.52
9/14/2024 18:00	14.74	170.84	0.09	7.4	377.05	8.87	0.51
9/14/2024 17:50	14.75	182.4	0.1	7.39	377.44	8.84	0.57
9/14/2024 17:40	14.77	198.55	0.11	7.4	377.21	8.82	0.59
9/14/2024 17:30	14.78	212.32	0.11	7.4	378.05	8.84	0.6
9/14/2024 17:20	14.79	227.27	0.12	7.41	378.17	8.84	0.61

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9/14/2024 17:10	14.8	235.77	0.13	7.4	378.99	8.86	0.89
9/14/2024 17:00	14.79	240.86	0.13	7.39	381.65	8.85	0.6
9/14/2024 16:50	14.79	218.81	0.12	7.37	383.53	8.88	0.57
9/14/2024 16:40	14.79	168.98	0.09	7.34	386.52	8.9	0.51
9/14/2024 16:30	14.79	97.52	0.05	7.29	389.13	8.92	0.51
9/14/2024 16:20	14.8	46.9	0.02	7.27	388.41	8.95	0.47
9/14/2024 16:10	14.8	40.31	0.02	7.26	388.06	8.97	0.5
9/14/2024 16:00	14.81	38.63	0.02	7.25	387.23	8.96	0.52
9/14/2024 15:50	14.81	36.61	0.02	7.26	386.85	8.9	0.5
9/14/2024 15:40	14.84	35.69	0.02	7.23	387.29	8.82	0.5
9/14/2024 15:30	14.88	34.8	0.02	7.25	387.62	8.8	0.51
9/14/2024 15:20	14.93	35.59	0.02	7.23	389.55	8.79	0.52
9/14/2024 15:10	14.96	35.78	0.02	7.22	390.53	8.79	0.5
9/14/2024 15:00	15.01	36.35	0.02	7.26	387.58	8.84	0.5
9/14/2024 14:50	15.04	36.16	0.02	7.29	385.81	8.89	0.48
9/14/2024 14:40	15.07	37.11	0.02	7.31	383.85	8.94	0.49
9/14/2024 14:30	15.1	36.86	0.02	7.35	380.75	9.02	0.47
9/14/2024 14:20	15.12	37.89	0.02	7.34	381.54	9.06	0.47
9/14/2024 14:10	15.07	38.05	0.02	7.33	382.22	9.07	0.48
9/14/2024 14:00	14.97	38.73	0.02	7.31	382.71	9.04	0.74
9/14/2024 13:50	14.88	38.77	0.02	7.3	383.49	8.98	0.45
9/14/2024 13:40	14.88	39.97	0.02	7.3	382.41	8.99	0.48
9/14/2024 13:30	14.88	40.09	0.02	7.31	381.73	9.01	0.54
9/14/2024 13:20	14.86	41.36	0.02	7.3	381.47	8.97	0.5
9/14/2024 13:10	14.86	42.13	0.02	7.31	380	9	0.48
9/14/2024 13:00	14.85	43.24	0.02	7.3	379.28	8.97	0.48
9/14/2024 12:50	14.85	44.06	0.02	7.31	378.64	9.02	0.48
9/14/2024 12:40	14.85	44.99	0.02	7.31	377.16	9.01	0.47
9/14/2024 12:30	14.85	45.55	0.02	7.33	375.14	9.06	0.5
9/14/2024 12:20	14.85	47.25	0.02	7.33	374.04	9.06	0.48
9/14/2024 12:10	14.82	47.78	0.02	7.33	373.91	9.02	0.47
9/14/2024 12:00	14.82	49.35	0.02	7.33	372.19	9.04	0.48
9/14/2024 11:50	14.81	50.24	0.03	7.33	371.9	9.06	0.47
9/14/2024 11:40	14.78	51.98	0.03	7.33	369.69	9.07	0.47
9/14/2024 11:30	14.78	53.31	0.03	7.35	367.65	9.12	0.52
9/14/2024 11:20	14.75	54.93	0.03	7.34	366.67	9.09	0.47
9/14/2024 11:10	14.73	56.25	0.03	7.34	366.22	9.12	0.46
9/14/2024 11:00	14.66	58.49	0.03	7.33	366.05	9.06	0.48
9/14/2024 10:50	14.65	59.86	0.03	7.34	364.66	9.06	0.47
9/14/2024 10:40	14.66	62.18	0.03	7.34	363.45	9.1	0.46
9/14/2024 10:30	14.65	63.57	0.03	7.34	362.67	9.08	0.45
9/14/2024 10:20	14.57	66.3	0.03	7.32	362.74	9.04	0.44
9/14/2024 10:10	14.56	67.77	0.03	7.32	362.03	9.05	0.46
9/14/2024 10:00	14.53	70.9	0.04	7.32	361.22	9	0.43
9/14/2024 9:50	14.52	72.93	0.04	7.32	358.62	9	0.45
9/14/2024 9:40	14.52	75.92	0.04	7.33	357.69	9.01	0.46
9/14/2024 9:30	14.51	78.43	0.04	7.34	355.46	9.02	0.45

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9/14/2024 9:20	14.5	81.17	0.04	7.32	354.9	9.02	0.45
9/14/2024 9:10	14.48	83.49	0.04	7.33	353.55	8.98	0.45
9/14/2024 9:00	14.47	88.04	0.05	7.32	352.72	8.96	0.45
9/14/2024 8:50	14.46	90.19	0.05	7.32	351.6	8.98	0.45
9/14/2024 8:40	14.45	95.15	0.05	7.33	350.49	8.94	0.45
9/14/2024 8:30	14.44	98.7	0.05	7.32	349.77	8.92	0.44
9/14/2024 8:20	14.44	102.69	0.05	7.32	347.74	8.9	0.44
9/14/2024 8:10	14.43	106.05	0.06	7.33	347.42	8.91	0.44
9/14/2024 8:00	14.44	111.72	0.06	7.33	346.44	8.88	0.52
9/14/2024 7:50	14.44	115.23	0.06	7.33	346.68	8.89	0.45
9/14/2024 7:40	14.44	121.48	0.06	7.33	344.32	8.88	0.46
9/14/2024 7:30	14.44	126.89	0.07	7.34	347.11	8.88	0.48
9/14/2024 7:20	14.45	133.32	0.07	7.34	346.33	8.88	0.48
9/14/2024 7:10	14.45	139.66	0.07	7.35	344.57	8.89	0.44
9/14/2024 7:00	14.46	148.37	0.08	7.36	341.74	8.88	0.49
9/14/2024 6:50	14.46	157.03	0.08	7.37	339.06	8.87	0.58
9/14/2024 6:40	14.47	166.96	0.09	7.37	335.53	8.86	0.5
9/14/2024 6:30	14.48	176.92	0.09	7.38	333.36	8.88	0.67
9/14/2024 6:20	14.48	189.01	0.1	7.39	330.93	8.86	0.69
9/14/2024 6:10	14.49	198.02	0.11	7.39	329.76	8.88	0.54
9/14/2024 6:00	14.49	212.11	0.11	7.4	327.18	8.88	0.6
9/14/2024 5:50	14.49	220.8	0.12	7.41	327.16	8.86	0.6
9/14/2024 5:40	14.5	236.94	0.13	7.42	324.58	8.89	0.61
9/14/2024 5:30	14.51	249.11	0.13	7.42	324.03	8.86	0.63
9/14/2024 5:20	14.51	264.82	0.14	7.43	322.34	8.87	0.68
9/14/2024 5:10	14.51	273.11	0.15	7.43	323.84	8.85	0.68
9/14/2024 5:00	14.51	287.22	0.15	7.43	322.42	8.88	0.69
9/14/2024 4:50	14.51	284.43	0.15	7.43	324.97	8.86	1.11
9/14/2024 4:40	14.51	282.81	0.15	7.42	323.66	8.86	0.83
9/14/2024 4:30	14.51	288.48	0.15	7.42	325.41	8.85	1.01
9/14/2024 4:20	14.52	305.61	0.16	7.43	324.62	8.85	0.93
9/14/2024 4:10	14.52	325.66	0.18	7.43	325.16	8.85	0.81
9/14/2024 4:00	14.52	351.79	0.19	7.44	324.73	8.83	0.88
9/14/2024 3:50	14.52	364.48	0.2	7.44	327.16	8.84	1.02
9/14/2024 3:40	14.52	364.31	0.2	7.44	326.59	8.84	0.87
9/14/2024 3:30	14.52	341.52	0.18	7.42	329.19	8.84	0.88
9/14/2024 3:20	14.52	336.13	0.18	7.42	328.34	8.85	1.03
9/14/2024 3:10	14.51	338.79	0.18	7.41	331.43	8.83	1.07
9/14/2024 3:00	14.51	346.74	0.19	7.41	331.46	8.82	1.04
9/14/2024 2:50	14.51	343.3	0.19	7.4	334.71	8.83	1.02
9/14/2024 2:40	14.51	335.68	0.18	7.4	334.79	8.83	0.92
9/14/2024 2:30	14.52	324.64	0.17	7.39	339.52	8.83	1.01
9/14/2024 2:20	14.52	324.23	0.17	7.39	340.9	8.83	0.95
9/14/2024 2:10	14.52	323.43	0.17	7.38	345.52	8.82	0.99
9/14/2024 2:00	14.52	326.83	0.18	7.37	348.17	8.82	1.33
9/14/2024 1:50	14.53	320.87	0.17	7.37	350.82	8.81	1.15
9/14/2024 1:40	14.53	337.96	0.18	7.37	351.9	8.83	1.06

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9/14/2024 1:30	14.54	361.97	0.2	7.37	356.64	8.8	1.08
9/14/2024 1:20	14.54	391.26	0.21	7.37	360.37	8.79	1.14
9/14/2024 1:10	14.54	405.77	0.22	7.36	364.66	8.79	1.12
9/14/2024 1:00	14.54	411.84	0.22	7.35	366.63	8.76	1.05
9/14/2024 0:50	14.55	413.73	0.22	7.35	370.28	8.76	1.01
9/14/2024 0:40	14.55	442.59	0.24	7.35	373.81	8.75	1.01
9/14/2024 0:30	14.54	456.19	0.25	7.34	377.88	8.76	0.88
9/14/2024 0:20	14.52	441.25	0.24	7.31	382.59	8.74	1.12
9/14/2024 0:10	14.51	390.41	0.21	7.29	385.1	8.78	0.81
9/14/2024 0:00	14.5	302.72	0.16	7.25	390.01	8.79	0.74
9/13/2024 23:50	14.49	173.14	0.09	7.19	396.68	8.83	0.61
9/13/2024 23:40	14.49	64.75	0.03	7.16	398.48	8.82	4.68
9/13/2024 23:30	14.5	48.67	0.02	7.16	399.53	8.83	0.68
9/13/2024 23:20	14.51	51.74	0.03	7.16	401.19	8.8	0.78
9/13/2024 23:10	14.51	54.48	0.03	7.14	404.79	8.79	4.23
9/13/2024 23:00	14.53	56.72	0.03	7.13	407.28	8.77	0.74
9/13/2024 22:50	14.54	56.95	0.03	7.15	410.06	8.78	0.65
9/13/2024 22:40	14.55	56.76	0.03	7.14	412.42	8.78	0.58
9/13/2024 22:30	14.57	52.58	0.03	7.17	412.17	8.77	0.46
9/13/2024 22:20	14.58	48.81	0.02	7.14	413.99	8.75	0.46
9/13/2024 22:10	14.58	41.58	0.02	7.15	413.16	8.77	0.44
9/13/2024 22:00	14.59	35.47	0.02	7.13	414.24	8.77	0.47
9/13/2024 21:50	14.6	28.84	0.01	7.13	414.24	8.77	0.47
9/13/2024 21:40	14.61	25.68	0.01	7.13	413.08	8.76	0.47
9/13/2024 21:30	14.62	24.49	0.01	7.18	410.71	8.76	0.46
9/13/2024 21:20	14.63	24.73	0.01	7.13	412.77	8.75	0.52
9/13/2024 21:10	14.64	24.56	0.01	7.14	412.03	8.74	0.48
9/13/2024 21:00	14.66	24.84	0.01	7.14	411.91	8.72	0.49
9/13/2024 20:50	14.66	24.82	0.01	7.22	407.36	8.73	0.47
9/13/2024 20:40	14.68	24.92	0.01	7.13	412.09	8.71	0.48
9/13/2024 20:30	14.69	24.91	0.01	7.14	411.08	8.71	0.47
9/13/2024 20:20	14.7	24.93	0.01	7.12	411.55	8.71	0.49
9/13/2024 20:10	14.71	24.59	0.01	7.16	409.03	8.7	0.48
9/13/2024 20:00	14.72	24.8	0.01	7.12	410.42	8.7	0.48
9/13/2024 19:50	14.73	24.63	0.01	7.19	406.49	8.7	0.52
9/13/2024 19:40	14.75	24.65	0.01	7.11	410.39	8.72	0.56
9/13/2024 19:30	14.76	24.58	0.01	7.16	407.3	8.71	0.51
9/13/2024 19:20	14.77	24.6	0.01	7.13	408.54	8.72	0.54
9/13/2024 19:10	14.79	24.48	0.01	7.15	407.87	8.72	0.57
9/13/2024 19:00	14.81	24.52	0.01	7.13	409.03	8.71	0.6
9/13/2024 18:50	14.83	23.88	0.01	7.16	409.11	8.74	0.55
9/13/2024 18:40	14.84	24.1	0.01	7.14	411.06	8.73	0.55
9/13/2024 18:30	14.85	24.01	0.01	7.18	409.91	8.74	5.87
9/13/2024 18:20	14.87	24.02	0.01	7.15	411.05	8.76	0.46
9/13/2024 18:20	14.87	24.02	0.01	7.15	411.05	8.76	0.46
9/13/2024 18:10	14.88	23.95	0.01	7.23	406.54	8.76	0.51
9/13/2024 18:00	14.9	24.01	0.01	7.16	409.59	8.77	0.46

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9/13/2024 17:50	14.9	23.97	0.01	7.19	407.63	8.77	0.49
9/13/2024 17:40	14.91	24.11	0.01	7.17	407.89	8.81	0.49
9/13/2024 17:30	14.92	23.97	0.01	7.19	406.74	8.8	0.51
9/13/2024 17:20	14.93	24.14	0.01	7.17	407.46	8.82	0.65
9/13/2024 17:10	14.93	24.19	0.01	7.18	406.93	8.8	0.49
9/13/2024 17:00	14.93	24.34	0.01	7.17	407.84	8.76	0.49
9/13/2024 16:50	14.93	24.06	0.01	7.15	408.42	8.73	0.49
9/13/2024 16:40	14.94	24.31	0.01	7.15	407.83	8.75	0.49
9/13/2024 16:30	14.94	24.19	0.01	7.17	406.12	8.76	0.53
9/13/2024 16:20	14.95	24.14	0.01	7.15	407.11	8.75	0.48
9/13/2024 16:10	14.96	24	0.01	7.17	405.96	8.72	0.48
9/13/2024 16:00	14.96	24.02	0.01	7.15	406.51	8.75	0.5
9/13/2024 15:50	14.97	23.79	0.01	7.15	406.48	8.75	0.57
9/13/2024 15:40	14.98	23.92	0.01	7.14	405.78	8.75	0.48
9/13/2024 15:30	14.99	23.78	0.01	7.17	404.2	8.76	0.51
9/13/2024 15:20	15	23.73	0.01	7.17	404.03	8.76	0.54
9/13/2024 15:10	15.01	23.47	0.01	7.16	405.22	8.8	0.55
9/13/2024 15:00	15.02	23.47	0.01	7.15	406.26	8.79	0.63
9/13/2024 14:50	15.03	23.27	0.01	7.21	403.14	8.78	0.52
9/13/2024 14:40	15.04	23.12	0.01	7.17	404.24	8.8	0.56
9/13/2024 14:30	15.05	22.91	0.01	7.18	404.11	8.82	0.53
9/13/2024 14:20	15.06	22.83	0.01	7.18	404.03	8.82	0.54
9/13/2024 14:10	15.06	22.69	0.01	7.2	402.77	8.83	0.51
9/13/2024 14:00	15.07	22.58	0.01	7.19	403.97	8.85	0.51
9/13/2024 13:50	15.08	22.41	0.01	7.23	403.56	8.88	0.53
9/13/2024 13:40	15.1	22.47	0.01	7.23	404.03	8.9	0.49
9/13/2024 13:30	15.1	22.37	0.01	7.24	403	8.92	0.5
9/13/2024 13:20	15.13	22.31	0.01	7.23	402.33	8.96	0.49
9/13/2024 13:10	15.14	22.27	0.01	7.26	400.97	9.01	0.46
9/13/2024 13:00	15.12	22.28	0.01	7.25	400.1	8.99	0.49
9/13/2024 12:50	15.11	22.26	0.01	7.26	399.13	9	0.47
9/13/2024 12:40	15.12	22.31	0.01	7.25	398.81	9.03	0.48
9/13/2024 12:30	15.12	22.24	0.01	7.29	396.76	9.01	0.49
9/13/2024 12:20	15.13	22.27	0.01	7.27	396.52	9.06	0.49
9/13/2024 12:10	15.13	22.16	0.01	7.28	396.24	9.06	0.53
9/13/2024 12:10	15.13	22.16	0.01	7.28	396.24	9.06	0.53
9/13/2024 12:00	15.16	22.27	0.01	7.29	393.52	9.07	0.47
9/13/2024 11:50	15.19	22.01	0.01	7.3	393.87	9.13	0.51
9/13/2024 11:40	15.18	22.22	0.01	7.28	393.92	9.14	0.47
9/13/2024 11:30	15.18	21.79	0.01	7.31	393.24	9.13	0.48
9/13/2024 11:20	15.19	22.23	0.01	7.31	393.07	9.15	0.49
9/13/2024 11:10	15.21	21.85	0.01	7.33	393.51	9.22	0.48
9/13/2024 11:00	15.15	22.23	0.01	7.32	394.14	9.2	0.5
9/13/2024 10:50	15.08	22.19	0.01	7.33	395.22	9.2	0.5
9/13/2024 10:40	15.03	22.21	0.01	7.3	396.69	9.18	0.47
9/13/2024 10:30	14.98	22.25	0.01	7.31	397.44	9.17	0.48
9/13/2024 10:20	14.95	22.3	0.01	7.29	397.92	9.2	0.47

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9/13/2024 10:10	14.83	22.29	0.01	7.27	400.91	9.17	0.45
9/13/2024 10:00	14.73	22.4	0.01	7.26	401.05	9.15	0.48
9/13/2024 9:50	14.67	22.26	0.01	7.27	402.38	9.14	0.47
9/13/2024 9:40	14.66	22.45	0.01	7.24	403.56	9.1	0.49
9/13/2024 9:30	14.65	22.43	0.01	7.22	405.24	9.11	0.46
9/13/2024 9:20	14.6	22.48	0.01	7.19	407.02	9.07	0.46
9/13/2024 9:10	14.57	22.23	0.01	7.25	405.27	9.05	0.45
9/13/2024 9:00	14.56	22.57	0.01	7.21	407.69	9.05	0.48
9/13/2024 8:50	14.53	22.38	0.01	7.2	409.41	9.01	0.45
9/13/2024 8:40	14.51	22.64	0.01	7.17	410.65	9	0.45
9/13/2024 8:30	14.5	22.6	0.01	7.2	411.06	8.99	0.45
9/13/2024 8:20	14.5	22.65	0.01	7.16	412.49	8.97	0.45
9/13/2024 8:10	14.5	22.3	0.01	7.16	415.19	8.93	0.47
9/13/2024 8:00	14.5	22.69	0.01	7.15	415	8.93	0.47
9/13/2024 7:50	14.51	22.61	0.01	7.18	413.57	8.92	0.45
9/13/2024 7:40	14.52	22.8	0.01	7.14	415.43	8.89	0.53
9/13/2024 7:30	14.53	22.75	0.01	7.13	417.18	8.85	0.47
9/13/2024 7:20	14.54	22.84	0.01	7.14	415.92	8.84	0.46
9/13/2024 7:10	14.55	22.75	0.01	7.13	417.31	8.84	0.44
9/13/2024 7:00	14.56	22.85	0.01	7.12	416.83	8.81	0.48
9/13/2024 6:50	14.57	22.61	0.01	7.15	416.08	8.78	0.46
9/13/2024 6:40	14.59	22.97	0.01	7.13	416.63	8.79	0.45
9/13/2024 6:30	14.61	22.69	0.01	7.15	416.2	8.79	0.45
9/13/2024 6:20	14.63	22.99	0.01	7.11	418.01	8.79	0.48
9/13/2024 6:10	14.65	22.93	0.01	7.12	417.67	8.79	0.49
9/13/2024 6:00	14.68	22.97	0.01	7.13	416.99	8.79	0.47
9/13/2024 5:50	14.7	22.94	0.01	7.16	415.5	8.75	0.46
9/13/2024 5:40	14.72	23.05	0.01	7.11	417.7	8.77	0.46
9/13/2024 5:30	14.75	23.04	0.01	7.2	412.64	8.75	0.47
9/13/2024 5:20	14.77	23.03	0.01	7.11	416.87	8.74	0.5
9/13/2024 5:10	14.78	22.93	0.01	7.12	416.68	8.75	0.45
9/13/2024 5:00	14.81	23.04	0.01	7.13	415.49	8.73	0.46
9/13/2024 4:50	14.83	23.05	0.01	7.16	413.37	8.73	0.49
9/13/2024 4:40	14.86	23.08	0.01	7.13	414.2	8.73	0.49
9/13/2024 4:30	14.88	23.1	0.01	7.14	413.6	8.73	0.49
9/13/2024 4:20	14.9	23.14	0.01	7.13	414.4	8.71	0.48
9/13/2024 4:10	14.92	23	0.01	7.13	414.76	8.72	0.47
9/13/2024 4:00	14.94	23.16	0.01	7.12	415.87	8.71	0.47
9/13/2024 3:50	14.95	23.04	0.01	7.14	414.71	8.71	0.49
9/13/2024 3:40	14.97	23.16	0.01	7.12	415.7	8.7	0.47
9/13/2024 3:30	14.98	22.93	0.01	7.15	414.43	8.7	0.49
9/13/2024 3:20	15.01	23.17	0.01	7.12	415.43	8.71	0.5
9/13/2024 3:10	15.02	23.21	0.01	7.12	416.08	8.7	0.49
9/13/2024 3:00	15.04	23.18	0.01	7.11	415.9	8.68	0.51
9/13/2024 2:50	15.06	23.15	0.01	7.13	415.95	8.7	0.47
9/13/2024 2:40	15.07	23.19	0.01	7.11	416.51	8.68	0.48
9/13/2024 2:30	15.07	23.15	0.01	7.12	416.62	8.68	0.48

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9/13/2024 2:20	15.08	23.21	0.01	7.12	415.83	8.68	0.47
9/13/2024 2:10	15.08	23.05	0.01	7.16	414.08	8.66	0.5
9/13/2024 2:00	15.09	23.17	0.01	7.12	415.97	8.64	0.49
9/13/2024 1:50	15.1	23.14	0.01	7.12	416.52	8.67	0.49
9/13/2024 1:40	15.11	23.24	0.01	7.13	414.6	8.65	0.49
9/13/2024 1:30	15.11	23.08	0.01	7.11	416.12	8.65	0.48
9/13/2024 1:20	15.12	23.17	0.01	7.11	415.55	8.65	0.5
9/13/2024 1:10	15.13	23.08	0.01	7.12	416.08	8.67	0.49
9/13/2024 1:00	15.14	23.18	0.01	7.12	414.73	8.66	0.49
9/13/2024 0:50	15.14	23.06	0.01	7.16	413.23	8.65	0.5
9/13/2024 0:40	15.15	23.22	0.01	7.11	415.24	8.65	0.5
9/13/2024 0:30	15.16	23.13	0.01	7.12	416.31	8.67	0.48
9/13/2024 0:20	15.17	23.22	0.01	7.1	416.36	8.64	0.51
9/13/2024 0:10	15.19	23.19	0.01	7.13	416.06	8.66	0.49
9/13/2024 0:00	15.2	23.25	0.01	7.1	416.4	8.63	0.53
9/12/2024 23:50	15.22	23.25	0.01	7.11	415.77	8.62	0.51
9/12/2024 23:40	15.24	23.29	0.01	7.11	415.62	8.62	0.51
9/12/2024 23:30	15.26	23.13	0.01	7.15	414.02	8.62	0.48
9/12/2024 23:20	15.28	23.22	0.01	7.12	415.43	8.61	0.5
9/12/2024 23:10	15.3	23.12	0.01	7.11	415.93	8.6	0.5
9/12/2024 23:00	15.31	23.2	0.01	7.13	414.22	8.6	0.52
9/12/2024 22:50	15.33	23.12	0.01	7.12	414.7	8.61	0.51
9/12/2024 22:40	15.35	23.23	0.01	7.11	414.29	8.59	0.54
9/12/2024 22:30	15.37	23.05	0.01	7.11	415.77	8.58	0.5
9/12/2024 22:20	15.4	23.23	0.01	7.12	413.75	8.6	0.52
9/12/2024 22:10	15.42	23.21	0.01	7.12	414.72	8.57	0.52
9/12/2024 22:00	15.44	23.24	0.01	7.13	412.69	8.57	0.54
9/12/2024 21:50	15.47	23.21	0.01	7.17	411.33	8.56	0.5
9/12/2024 21:40	15.49	23.26	0.01	7.13	413.24	8.57	1.83
9/12/2024 21:30	15.51	23.24	0.01	7.13	414.28	8.55	0.48
9/12/2024 21:20	15.53	23.26	0.01	7.11	414.28	8.54	0.76
9/12/2024 21:10	15.56	23.23	0.01	7.16	411.58	8.54	0.51
9/12/2024 21:00	15.59	23.31	0.01	7.12	412.57	8.52	0.82
9/12/2024 20:50	15.61	23.11	0.01	7.13	413.05	8.52	0.52
9/12/2024 20:40	15.64	23.25	0.01	7.13	412.81	8.52	0.52
9/12/2024 20:30	15.66	23.16	0.01	7.15	411.64	8.52	0.53
9/12/2024 20:20	15.69	23.28	0.01	7.14	411.86	8.53	0.57
9/12/2024 20:10	15.72	23.07	0.01	7.17	410.71	8.5	0.54
9/12/2024 20:00	15.75	23.26	0.01	7.13	412.02	8.5	0.6
9/12/2024 19:50	15.77	22.89	0.01	7.19	409.28	8.52	0.54
9/12/2024 19:40	15.8	23.25	0.01	7.14	410.9	8.5	0.58
9/12/2024 19:30	15.82	23.15	0.01	7.16	410.47	8.51	0.52
9/12/2024 19:20	15.85	23.21	0.01	7.16	409.55	8.52	0.6
9/12/2024 19:10	15.87	23.03	0.01	7.14	410.92	8.53	0.52
9/12/2024 19:00	15.9	23.04	0.01	7.15	409.81	8.52	0.52
9/12/2024 18:50	15.92	23.06	0.01	7.17	408.46	8.53	0.54
9/12/2024 18:40	15.94	23.12	0.01	7.16	408.82	8.53	0.62

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9/12/2024 18:30	15.96	22.97	0.01	7.21	405.9	8.55	0.51
9/12/2024 18:20	15.99	23.04	0.01	7.17	407.33	8.55	0.55
9/12/2024 18:10	16	22.95	0.01	7.18	406.79	8.56	0.53
9/12/2024 18:00	16.02	22.95	0.01	7.18	406.85	8.57	0.8
9/12/2024 17:50	16.03	22.85	0.01	7.18	406.68	8.57	0.54
9/12/2024 17:40	16.05	22.83	0.01	7.18	406.09	8.56	0.53
9/12/2024 17:30	16.06	22.67	0.01	7.21	404.74	8.57	0.53
9/12/2024 17:20	16.08	22.86	0.01	7.2	405.1	8.56	0.54
9/12/2024 17:10	16.09	22.68	0.01	7.23	402.1	8.59	0.54
9/12/2024 17:00	16.11	22.83	0.01	7.19	403.94	8.6	0.55
9/12/2024 16:50	16.12	22.42	0.01	7.21	402.63	8.6	0.56
9/12/2024 16:40	16.14	22.67	0.01	7.22	401.47	8.63	0.56
9/12/2024 16:30	16.16	22.49	0.01	7.26	399.39	8.67	0.54
9/12/2024 16:20	16.18	22.55	0.01	7.24	399.37	8.71	0.54
9/12/2024 16:10	16.21	22.51	0.01	7.26	397.98	8.75	0.6
9/12/2024 16:00	16.22	22.57	0.01	7.27	397.44	8.79	0.59
9/12/2024 15:50	16.23	22.47	0.01	7.28	395.93	8.8	0.54
9/12/2024 15:40	16.21	22.43	0.01	7.27	396.63	8.78	0.54
9/12/2024 15:30	16.24	22.45	0.01	7.28	395.56	8.81	0.55
9/12/2024 15:20	16.19	22.35	0.01	7.28	394.1	8.84	0.55
9/12/2024 15:10	16.13	22.39	0.01	7.28	393.11	8.83	0.54
9/12/2024 15:00	16.12	22.48	0.01	7.28	393.41	8.83	0.53
9/12/2024 14:50	16.15	22.05	0.01	7.3	390.38	8.86	0.54
9/12/2024 14:40	16.17	22.43	0.01	7.3	390.04	8.88	0.55
9/12/2024 14:30	16.19	22.19	0.01	7.34	386.05	8.89	0.54
9/12/2024 14:20	16.21	22.38	0.01	7.3	387.32	8.88	0.54
9/12/2024 14:10	16.25	22.39	0.01	7.31	385.64	8.9	0.53
9/12/2024 14:00	16.25	22.4	0.01	7.3	385.7	8.9	0.53
9/12/2024 13:50	16.26	22.25	0.01	7.29	386.73	8.91	0.54
9/12/2024 13:40	16.23	22.48	0.01	7.3	384.63	8.9	0.53
9/12/2024 13:30	16.21	22.24	0.01	7.3	384.8	8.93	0.53
9/12/2024 13:20	16.18	22.41	0.01	7.31	385.37	8.96	0.53
9/12/2024 13:10	16.09	22.27	0.01	7.3	385.36	9	0.54
9/12/2024 13:00	16.06	22.47	0.01	7.31	386.2	9.01	0.51
9/12/2024 12:50	16.02	22.34	0.01	7.32	384.57	9	0.55
9/12/2024 12:40	16.02	22.5	0.01	7.31	385.8	8.99	0.54
9/12/2024 12:30	15.96	22.37	0.01	7.36	383.06	9.04	0.55
9/12/2024 12:20	15.93	22.53	0.01	7.31	383.93	9.02	0.53
9/12/2024 12:10	16.03	22.35	0.01	7.33	382.93	9	0.54
9/12/2024 12:00	16.06	22.57	0.01	7.31	383.33	9.03	0.54
9/12/2024 11:50	16.03	22.2	0.01	7.35	383.11	9.06	0.54
9/12/2024 11:40	16.02	22.5	0.01	7.34	383.75	9.06	0.55
9/12/2024 11:30	15.99	22.33	0.01	7.35	383.17	9.07	0.53
9/12/2024 11:20	15.97	22.41	0.01	7.33	385.29	9.1	0.52
9/12/2024 11:10	15.92	22.48	0.01	7.32	386.83	9.08	0.53
9/12/2024 11:00	15.86	22.51	0.01	7.34	385.91	9.09	0.56
9/12/2024 10:50	15.76	22.35	0.01	7.35	387.61	9.11	0.51

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9/12/2024 10:40	15.6	22.48	0.01	7.32	391.41	9.11	0.53
9/12/2024 10:30	15.47	22.33	0.01	7.34	392.18	9.14	0.51
9/12/2024 10:20	15.38	22.43	0.01	7.3	396.11	9.14	0.49
9/12/2024 10:10	15.19	22.1	0.01	7.31	398.46	9.13	0.51
9/12/2024 10:00	15.02	22.44	0.01	7.26	402.12	9.13	0.49
9/12/2024 9:50	14.91	22.47	0.01	7.24	404.69	9.09	0.46
9/12/2024 9:40	14.86	22.49	0.01	7.23	405.31	9.05	0.47
9/12/2024 9:30	14.86	22.49	0.01	7.22	407.13	9.09	0.47
9/12/2024 9:20	14.8	22.56	0.01	7.23	407.39	9.07	0.46
9/12/2024 9:10	14.72	22.65	0.01	7.21	411.46	9.01	0.45
9/12/2024 9:00	14.7	22.64	0.01	7.2	411.55	8.97	0.47
9/12/2024 8:50	14.68	22.68	0.01	7.2	412.61	8.93	0.47
9/12/2024 8:40	14.67	22.77	0.01	7.22	412.53	8.92	0.46
9/12/2024 8:30	14.67	22.39	0.01	7.17	414.44	8.87	0.47
9/12/2024 8:20	14.67	22.84	0.01	7.15	414.7	8.85	0.45
9/12/2024 8:10	14.67	22.82	0.01	7.2	415.34	8.84	0.47
9/12/2024 8:00	14.67	22.89	0.01	7.14	415.21	8.81	0.45
9/12/2024 7:50	14.67	22.76	0.01	7.18	414.65	8.82	0.47
9/12/2024 7:40	14.67	22.91	0.01	7.13	416.12	8.8	0.47
9/12/2024 7:30	14.67	22.91	0.01	7.15	416.32	8.79	0.48
9/12/2024 7:20	14.67	22.89	0.01	7.14	416.36	8.78	0.47
9/12/2024 7:10	14.67	22.85	0.01	7.16	415.55	8.77	0.46
9/12/2024 7:00	14.68	22.9	0.01	7.12	416.47	8.76	0.47
9/12/2024 6:50	14.68	22.93	0.01	7.19	413.5	8.74	0.48
9/12/2024 6:40	14.69	22.98	0.01	7.15	415.83	8.75	0.47
9/12/2024 6:30	14.69	22.54	0.01	7.13	416.58	8.75	0.46
9/12/2024 6:20	14.7	22.98	0.01	7.12	416.08	8.75	0.48
9/12/2024 6:10	14.7	22.91	0.01	7.18	414.06	8.76	0.49
9/12/2024 6:00	14.71	22.98	0.01	7.13	415.65	8.75	0.48
9/12/2024 5:50	14.71	22.6	0.01	7.18	414.56	8.75	0.46
9/12/2024 5:40	14.72	23.01	0.01	7.14	416.38	8.74	0.51
9/12/2024 5:30	14.73	22.77	0.01	7.17	414.9	8.73	0.51
9/12/2024 5:20	14.74	23.04	0.01	7.13	416.22	8.73	0.48
9/12/2024 5:10	14.74	22.81	0.01	7.16	416.22	8.74	0.49
9/12/2024 5:00	14.75	23.05	0.01	7.11	417.41	8.7	0.47
9/12/2024 4:50	14.76	22.72	0.01	7.21	417.09	8.72	0.47
9/12/2024 4:40	14.77	23.07	0.01	7.17	416.76	8.73	0.49
9/12/2024 4:30	14.77	23.07	0.01	7.15	416.41	8.72	0.5
9/12/2024 4:20	14.78	23.08	0.01	7.18	416.38	8.73	0.51
9/12/2024 4:10	14.79	23	0.01	7.18	415.04	8.71	0.48
9/12/2024 4:00	14.8	23.08	0.01	7.18	415.74	8.71	0.62
9/12/2024 3:50	14.81	23	0.01	7.16	415.55	8.71	0.48
9/12/2024 3:40	14.83	23.07	0.01	7.16	416.5	8.72	0.5
9/12/2024 3:30	14.84	23.03	0.01	7.16	415.58	8.7	0.48
9/12/2024 3:20	14.86	23.09	0.01	7.16	416.58	8.69	0.47
9/12/2024 3:10	14.87	23.07	0.01	7.23	415.18	8.69	0.77
9/12/2024 3:00	14.89	23.12	0.01	7.16	415.62	8.69	0.47

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9/12/2024 2:50	14.89	22.97	0.01	7.18	414.96	8.7	0.47
9/12/2024 2:40	14.91	23.14	0.01	7.13	415.81	8.7	0.48
9/12/2024 2:30	14.92	22.98	0.01	7.15	415.27	8.69	0.55
9/12/2024 2:20	14.93	23.09	0.01	7.13	416.47	8.69	0.66
9/12/2024 2:10	14.94	22.89	0.01	7.18	414.85	8.7	0.5
9/12/2024 2:00	14.95	23.13	0.01	7.12	417	8.67	0.49
9/12/2024 1:50	14.96	23.11	0.01	7.2	412.46	8.68	0.48
9/12/2024 1:40	14.97	23.14	0.01	7.18	416.01	8.68	0.47
9/12/2024 1:30	14.98	23.17	0.01	7.2	415.93	8.66	0.46
9/12/2024 1:20	14.99	23.21	0.01	7.15	413.99	8.65	0.51
9/12/2024 1:10	14.99	22.9	0.01	7.12	416.24	8.67	0.52
9/12/2024 1:00	15	23.2	0.01	7.12	415.58	8.67	0.73
9/12/2024 0:50	15	22.83	0.01	7.19	413.65	8.67	0.5
9/12/2024 0:40	15.01	23.19	0.01	7.13	416.47	8.66	0.57
9/12/2024 0:30	15.01	23.13	0.01	7.15	417.1	8.66	0.73
9/12/2024 0:20	15.02	23.15	0.01	7.16	417.33	8.65	0.47
9/12/2024 0:10	15.02	22.88	0.01	7.19	416.71	8.65	0.59
9/12/2024 0:00	15.03	23.21	0.01	7.16	417.21	8.65	0.55
9/11/2024 23:50	15.03	23.08	0.01	7.21	414.14	8.64	0.48
9/11/2024 23:40	15.05	23.25	0.01	7.12	417.63	8.64	0.48
9/11/2024 23:30	15.06	23.17	0.01	7.15	417.46	8.65	0.51
9/11/2024 23:20	15.07	23.25	0.01	7.14	417.1	8.62	0.86
9/11/2024 23:10	15.08	23.19	0.01	7.19	415.04	8.63	0.55
9/11/2024 23:00	15.09	23.21	0.01	7.14	417.41	8.63	0.5
9/11/2024 22:50	15.1	23.13	0.01	7.22	415.45	8.62	0.47
9/11/2024 22:40	15.11	23.22	0.01	7.14	416.73	8.62	0.48
9/11/2024 22:30	15.12	23.15	0.01	7.21	415.04	8.63	0.5
9/11/2024 22:20	15.13	23.17	0.01	7.11	417.02	8.64	0.54
9/11/2024 22:10	15.14	23.22	0.01	7.19	415.11	8.62	0.47
9/11/2024 22:00	15.15	23.19	0.01	7.13	416.58	8.62	0.51
9/11/2024 21:50	15.16	23.12	0.01	7.2	415.59	8.62	0.49
9/11/2024 21:40	15.17	23.22	0.01	7.16	416.67	8.62	0.5
9/11/2024 21:30	15.18	23	0.01	7.21	413.81	8.61	0.49
9/11/2024 21:20	15.2	23.16	0.01	7.15	415.71	8.62	0.5
9/11/2024 21:10	15.21	23.04	0.01	7.18	412.66	8.61	0.5
9/11/2024 21:00	15.22	23.15	0.01	7.13	415.08	8.59	0.48
9/11/2024 20:50	15.23	23.01	0.01	7.19	414.52	8.6	0.5
9/11/2024 20:40	15.25	23.23	0.01	7.15	414.8	8.6	0.49
9/11/2024 20:30	15.26	23.14	0.01	7.2	412.6	8.6	0.49
9/11/2024 20:20	15.27	23.19	0.01	7.16	414.4	8.59	0.49
9/11/2024 20:10	15.28	23.02	0.01	7.2	413.6	8.59	0.52
9/11/2024 20:00	15.29	23.24	0.01	7.14	413.53	8.61	0.51
9/11/2024 19:50	15.31	22.96	0.01	7.22	411.36	8.6	0.49
9/11/2024 19:40	15.33	23.12	0.01	7.17	413.18	8.62	0.51
9/11/2024 19:30	15.35	23.05	0.01	7.22	409.88	8.6	0.5
9/11/2024 19:20	15.37	23	0.01	7.18	412.41	8.63	0.5
9/11/2024 19:10	15.39	23.02	0.01	7.22	413.49	8.64	0.48

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9/11/2024 19:00	15.41	23.07	0.01	7.18	411.9	8.66	1.04
9/11/2024 18:50	15.42	22.87	0.01	7.23	410.46	8.66	0.51
9/11/2024 18:40	15.42	22.99	0.01	7.21	409.6	8.67	0.54
9/11/2024 18:30	15.42	22.45	0.01	7.25	408.33	8.7	0.58
9/11/2024 18:20	15.43	22.97	0.01	7.22	409.74	8.71	0.5
9/11/2024 18:10	15.42	22.69	0.01	7.25	408.17	8.69	0.52
9/11/2024 18:00	15.42	22.97	0.01	7.19	410.16	8.67	2.7
9/11/2024 17:50	15.42	22.87	0.01	7.23	408.01	8.67	0.52
9/11/2024 17:40	15.44	22.93	0.01	7.28	408.44	8.67	0.5
9/11/2024 17:30	15.45	22.84	0.01	7.25	405.56	8.69	0.52
9/11/2024 17:20	15.47	22.86	0.01	7.24	407.55	8.73	0.55
9/11/2024 17:10	15.48	22.64	0.01	7.31	402.35	8.77	0.5
9/11/2024 17:00	15.49	22.7	0.01	7.25	405.57	8.78	0.51
9/11/2024 16:50	15.49	22.8	0.01	7.28	403.26	8.79	1.83
9/11/2024 16:40	15.48	22.79	0.01	7.25	405.83	8.77	0.49
9/11/2024 16:30	15.48	22.3	0.01	7.27	403.93	8.8	0.52
9/11/2024 16:20	15.48	22.64	0.01	7.26	403.74	8.8	0.5
9/11/2024 16:10	15.49	22.57	0.01	7.29	402.65	8.84	0.54
9/11/2024 16:00	15.49	22.63	0.01	7.27	402.31	8.85	0.5
9/11/2024 15:50	15.47	22.57	0.01	7.34	401.69	8.83	0.5
9/11/2024 15:40	15.46	22.64	0.01	7.29	402.11	8.86	0.5
9/11/2024 15:30	15.45	22.56	0.01	7.3	402.77	8.84	0.48
9/11/2024 15:20	15.44	22.58	0.01	7.32	402.54	8.87	0.53
9/11/2024 15:10	15.43	22.35	0.01	7.31	400.04	8.88	0.52
9/11/2024 15:00	15.42	22.61	0.01	7.31	403.57	8.86	0.53
9/11/2024 14:50	15.4	22.57	0.01	7.32	400.73	8.82	0.49
9/11/2024 14:40	15.4	22.65	0.01	7.29	402.58	8.81	0.51
9/11/2024 14:30	15.39	22.5	0.01	7.26	402.02	8.81	0.5
9/11/2024 14:20	15.4	22.57	0.01	7.24	402.27	8.8	0.49
9/11/2024 14:10	15.41	22.52	0.01	7.26	401.4	8.83	0.51
9/11/2024 14:00	15.42	22.51	0.01	7.26	402.3	8.86	0.51
9/11/2024 13:50	15.42	22.46	0.01	7.34	397.56	8.88	0.52
9/11/2024 13:40	15.42	22.54	0.01	7.28	398.15	8.88	0.57
9/11/2024 13:30	15.42	22.43	0.01	7.35	395.96	8.89	0.64
9/11/2024 13:20	15.42	22.52	0.01	7.27	397.69	8.9	0.5
9/11/2024 13:10	15.42	22.37	0.01	7.35	396.13	8.91	0.51
9/11/2024 13:00	15.41	22.54	0.01	7.36	396.53	8.92	0.69
9/11/2024 12:50	15.42	22.18	0.01	7.35	395.29	8.93	0.52
9/11/2024 12:40	15.43	22.43	0.01	7.28	395.58	8.97	0.52
9/11/2024 12:30	15.44	22.46	0.01	7.33	393.62	8.96	0.52
9/11/2024 12:20	15.48	22.48	0.01	7.32	393.31	9	0.57
9/11/2024 12:10	15.54	22.07	0.01	7.41	391.05	9.02	0.51
9/11/2024 12:00	15.55	22.48	0.01	7.41	392.67	9.06	0.52
9/11/2024 11:50	15.41	22.21	0.01	7.42	393.55	9.07	0.51
9/11/2024 11:40	15.32	22.48	0.01	7.35	396.02	9.06	0.52
9/11/2024 11:30	15.24	22.4	0.01	7.34	395.98	9.06	0.49
9/11/2024 11:20	15.17	22.53	0.01	7.37	398.44	9.02	0.46

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9/11/2024 11:10	15.11	22.3	0.01	7.38	396.52	9.02	0.48
9/11/2024 11:00	15.06	22.6	0.01	7.31	401.16	8.97	0.48
9/11/2024 10:50	15.03	22.6	0.01	7.31	401.64	8.95	0.47
9/11/2024 10:40	15	22.7	0.01	7.22	403.81	8.91	0.48
9/11/2024 10:30	14.98	22.66	0.01	7.23	405.08	8.92	0.5
9/11/2024 10:20	14.96	22.63	0.01	7.26	405.13	8.9	0.93
9/11/2024 10:10	14.94	22.64	0.01	7.22	405.67	8.92	0.47
9/11/2024 10:00	14.93	22.8	0.01	7.22	405.63	8.88	1.03
9/11/2024 9:50	14.91	22.71	0.01	7.21	406	8.87	0.48
9/11/2024 9:40	14.9	22.77	0.01	7.22	407.43	8.83	0.66
9/11/2024 9:30	14.89	22.81	0.01	7.33	401.58	8.84	0.48
9/11/2024 9:20	14.89	22.85	0.01	7.24	407.52	8.84	0.48
9/11/2024 9:10	14.88	22.49	0.01	7.21	406.52	8.85	0.48
9/11/2024 9:00	14.88	22.85	0.01	7.18	408.79	8.81	0.47
9/11/2024 8:50	14.87	22.91	0.01	7.26	405.66	8.82	0.48
9/11/2024 8:40	14.87	23.02	0.01	7.18	408.75	8.8	0.48
9/11/2024 8:30	14.86	23	0.01	7.24	407.15	8.78	0.47
9/11/2024 8:20	14.86	23.07	0.01	7.18	410.36	8.77	0.48
9/11/2024 8:10	14.86	23.06	0.01	7.18	408.96	8.73	0.47
9/11/2024 8:00	14.86	23.12	0.01	7.16	411.31	8.71	0.47
9/11/2024 7:50	14.87	23.14	0.01	7.24	407.82	8.69	0.48
9/11/2024 7:40	14.88	23.31	0.01	7.17	410.74	8.66	0.48
9/11/2024 7:30	14.88	23	0.01	7.27	408.25	8.65	0.48
9/11/2024 7:20	14.9	23.34	0.01	7.16	411.37	8.64	0.47
9/11/2024 7:10	14.91	23.01	0.01	7.16	409.08	8.64	0.48
9/11/2024 7:00	14.92	23.34	0.01	7.13	410.06	8.65	0.48
9/11/2024 6:50	14.93	23.42	0.01	7.24	406.73	8.63	0.47
9/11/2024 6:40	14.95	23.48	0.01	7.17	409.33	8.6	0.47
9/11/2024 6:30	14.96	23.46	0.01	7.21	406.3	8.63	0.48
9/11/2024 6:20	14.98	23.51	0.01	7.16	408.11	8.59	0.49
9/11/2024 6:10	14.99	23.54	0.01	7.18	406.71	8.57	0.5
9/11/2024 6:00	15.01	23.59	0.01	7.13	407.59	8.6	0.5
9/11/2024 5:50	15.02	23.63	0.01	7.14	407.78	8.59	0.5
9/11/2024 5:40	15.04	23.63	0.01	7.17	406.58	8.57	0.48
9/11/2024 5:30	15.06	23.39	0.01	7.18	405.38	8.57	0.49
9/11/2024 5:20	15.08	23.68	0.01	7.16	407.64	8.58	3.68
9/11/2024 5:10	15.1	23.53	0.01	7.21	405.15	8.56	0.49
9/11/2024 5:00	15.12	23.63	0.01	7.12	406.82	8.56	0.54
9/11/2024 4:50	15.14	23.63	0.01	7.2	403.22	8.55	0.51
9/11/2024 4:40	15.16	23.66	0.01	7.19	405.8	8.55	0.5
9/11/2024 4:30	15.18	23.66	0.01	7.15	404.51	8.54	0.51
9/11/2024 4:20	15.21	23.72	0.01	7.14	405.45	8.53	0.5
9/11/2024 4:10	15.23	23.48	0.01	7.19	402.84	8.53	0.5
9/11/2024 4:00	15.26	23.67	0.01	7.12	406.38	8.54	0.52
9/11/2024 3:50	15.28	23.59	0.01	7.18	403.91	8.53	0.51
9/11/2024 3:40	15.31	23.65	0.01	7.15	405.47	8.52	0.67
9/11/2024 3:30	15.33	23.61	0.01	7.23	400.93	8.54	0.51

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9/11/2024 3:20	15.35	23.67	0.01	7.16	405.8	8.51	0.52
9/11/2024 3:10	15.37	23.52	0.01	7.15	405.29	8.51	0.51
9/11/2024 3:00	15.4	23.67	0.01	7.13	405.43	8.5	0.52
9/11/2024 2:50	15.43	23.65	0.01	7.16	404.08	8.49	0.52
9/11/2024 2:40	15.45	23.69	0.01	7.18	404.66	8.47	0.54
9/11/2024 2:30	15.47	23.46	0.01	7.21	402.63	8.49	0.5
9/11/2024 2:20	15.5	23.61	0.01	7.13	406.59	8.5	0.5
9/11/2024 2:10	15.52	23.4	0.01	7.17	406.92	8.5	0.51
9/11/2024 2:00	15.55	23.61	0.01	7.15	407.03	8.48	0.52
9/11/2024 1:50	15.56	23.54	0.01	7.14	406.47	8.52	0.54
9/11/2024 1:40	15.6	23.57	0.01	7.13	405.7	8.47	0.51
9/11/2024 1:30	15.62	23.59	0.01	7.18	405.81	8.49	0.5
9/11/2024 1:20	15.66	23.66	0.01	7.15	405.15	8.48	0.52
9/11/2024 1:10	15.68	23.62	0.01	7.18	403.34	8.46	0.53
9/11/2024 1:00	15.72	23.7	0.01	7.14	405.99	8.43	0.51
9/11/2024 0:50	15.74	23.67	0.01	7.24	401.47	8.44	0.51
9/11/2024 0:40	15.78	23.74	0.01	7.15	404.6	8.42	0.52
9/11/2024 0:30	15.81	23.63	0.01	7.23	401.89	8.42	0.53
9/11/2024 0:20	15.84	23.77	0.01	7.14	405.84	8.41	0.54
9/11/2024 0:10	15.87	23.74	0.01	7.18	404.3	8.42	0.55
9/11/2024 0:00	15.89	23.77	0.01	7.14	407.16	8.41	0.57
9/10/2024 23:50	15.9	23.54	0.01	7.21	404.25	8.41	0.54
9/10/2024 23:40	15.93	23.62	0.01	7.15	409.22	8.44	0.55
9/10/2024 23:30	15.94	23.28	0.01	7.17	409.07	8.42	0.57
9/10/2024 23:20	15.96	23.6	0.01	7.16	409.03	8.45	0.6
9/10/2024 23:10	15.97	23.59	0.01	7.17	409.11	8.42	0.55
9/10/2024 23:00	15.99	23.62	0.01	7.16	409.86	8.43	0.55
9/10/2024 22:50	16.01	23.37	0.01	7.16	408.17	8.42	0.53
9/10/2024 22:40	16.03	23.7	0.01	7.12	410.31	8.4	0.53
9/10/2024 22:30	16.04	23.5	0.01	7.2	406.7	8.42	0.55
9/10/2024 22:20	16.06	23.7	0.01	7.15	410.44	8.4	0.56
9/10/2024 22:10	16.07	23.54	0.01	7.23	408.04	8.38	0.55
9/10/2024 22:00	16.09	23.69	0.01	7.14	410.14	8.39	0.55
9/10/2024 21:50	16.11	23.68	0.01	7.2	408.67	8.38	0.55
9/10/2024 21:40	16.12	23.72	0.01	7.14	409.97	8.38	0.54
9/10/2024 21:30	16.14	23.33	0.01	7.18	409.61	8.38	0.55
9/10/2024 21:20	16.16	23.57	0.01	7.14	410.21	8.39	0.54
9/10/2024 21:10	16.17	23.63	0.01	7.21	408.4	8.37	0.55
9/10/2024 21:00	16.19	23.7	0.01	7.15	409.66	8.39	0.57
9/10/2024 20:50	16.2	23.48	0.01	7.18	408.45	8.36	0.53
9/10/2024 20:40	16.22	23.61	0.01	7.15	409.15	8.38	0.56
9/10/2024 20:30	16.24	23.5	0.01	7.2	406.74	8.37	10.72
9/10/2024 20:20	16.26	23.63	0.01	7.14	408.73	8.36	0.56
9/10/2024 20:10	16.27	23.48	0.01	7.22	406.7	8.37	0.63
9/10/2024 20:00	16.29	23.49	0.01	7.14	408.42	8.36	0.56
9/10/2024 19:50	16.31	23.38	0.01	7.21	404.43	8.36	0.56
9/10/2024 19:40	16.33	23.48	0.01	7.14	408.36	8.37	0.56

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9/10/2024 19:30	16.34	23.34	0.01	7.22	406.35	8.37	0.55
9/10/2024 19:20	16.36	23.51	0.01	7.17	407.16	8.37	1.97
9/10/2024 19:10	16.38	23.39	0.01	7.25	403.39	8.39	0.56
9/10/2024 19:00	16.4	23.39	0.01	7.14	406.68	8.39	0.56
9/10/2024 18:50	16.41	23.19	0.01	7.21	402.76	8.4	0.56
9/10/2024 18:40	16.43	23.36	0.01	7.16	404.77	8.41	0.58
9/10/2024 18:30	16.44	23.16	0.01	7.21	401.82	8.44	0.57
9/10/2024 18:20	16.46	23.35	0.01	7.2	403.45	8.43	0.57
9/10/2024 18:10	16.47	23.31	0.01	7.28	399.84	8.43	0.56
9/10/2024 18:00	16.48	23.26	0.01	7.17	402.21	8.43	0.56
9/10/2024 17:50	16.49	23	0.01	7.24	399.22	8.46	0.57
9/10/2024 17:40	16.51	23.2	0.01	7.22	401.56	8.45	0.58
9/10/2024 17:30	16.51	23.07	0.01	7.23	400.18	8.47	0.58
9/10/2024 17:20	16.53	23.1	0.01	7.21	400.06	8.47	0.56
9/10/2024 17:10	16.54	23.15	0.01	7.2	400.13	8.47	0.58
9/10/2024 17:00	16.55	23.14	0.01	7.21	398.52	8.47	0.59
9/10/2024 16:50	16.56	23.03	0.01	7.24	396.58	8.5	0.57
9/10/2024 16:40	16.58	23.06	0.01	7.24	397.16	8.48	0.57
9/10/2024 16:30	16.62	23.02	0.01	7.22	397.67	8.49	0.56
9/10/2024 16:20	16.66	22.91	0.01	7.25	396.27	8.5	0.59
9/10/2024 16:10	16.71	22.74	0.01	7.33	391.98	8.54	0.58
9/10/2024 16:00	16.78	22.9	0.01	7.25	394.8	8.57	0.59
9/10/2024 15:50	16.8	22.8	0.01	7.27	393.41	8.59	0.58
9/10/2024 15:40	16.82	22.78	0.01	7.28	392.55	8.58	0.59
9/10/2024 15:30	16.84	22.77	0.01	7.34	389.5	8.61	0.58
9/10/2024 15:20	16.85	22.69	0.01	7.29	390.16	8.65	0.59
9/10/2024 15:10	16.81	22.62	0.01	7.37	386.29	8.66	0.59
9/10/2024 15:00	16.78	22.8	0.01	7.33	388.63	8.7	0.58
9/10/2024 14:50	16.75	22.5	0.01	7.33	385.37	8.7	0.59
9/10/2024 14:40	16.7	22.78	0.01	7.3	387.42	8.7	0.57
9/10/2024 14:30	16.7	22.66	0.01	7.35	385.42	8.74	0.59
9/10/2024 14:20	16.68	22.65	0.01	7.32	385.64	8.75	0.57
9/10/2024 14:10	16.7	22.63	0.01	7.38	382.54	8.82	0.57
9/10/2024 14:00	16.68	22.62	0.01	7.33	383.71	8.78	0.58
9/10/2024 13:50	16.65	22.71	0.01	7.36	381.13	8.83	0.57
9/10/2024 13:40	16.61	22.68	0.01	7.38	381.87	8.83	0.54
9/10/2024 13:30	16.57	22.51	0.01	7.36	379.65	8.87	0.56
9/10/2024 13:20	16.52	22.67	0.01	7.36	381.67	8.86	0.58
9/10/2024 13:10	16.47	22.47	0.01	7.35	380.06	8.89	0.56
9/10/2024 13:00	16.4	22.73	0.01	7.33	382.27	8.87	0.55
9/10/2024 12:50	16.36	22.68	0.01	7.4	380.84	8.91	0.56
9/10/2024 12:40	16.32	22.65	0.01	7.32	383.75	8.9	0.54
9/10/2024 12:30	16.32	22.58	0.01	7.31	383.4	8.95	0.56
9/10/2024 12:20	16.31	22.6	0.01	7.37	382.21	8.94	0.56
9/10/2024 12:10	16.3	22.62	0.01	7.35	382.07	8.96	0.55
9/10/2024 12:00	16.28	22.54	0.01	7.31	382.68	8.96	0.55
9/10/2024 11:50	16.22	22.54	0.01	7.32	383.65	8.99	0.55

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9/10/2024 11:40	16.14	22.54	0.01	7.32	384.24	9.01	0.53
9/10/2024 11:30	16.05	22.39	0.01	7.32	383.81	9.01	0.53
9/10/2024 11:20	16.03	22.49	0.01	7.33	382.51	9.01	0.55
9/10/2024 11:10	15.94	22.36	0.01	7.33	384.11	9.03	0.52
9/10/2024 11:00	16	22.46	0.01	7.31	385.51	9.01	0.53
9/10/2024 10:50	15.97	22.36	0.01	7.32	386.14	9.03	0.55
9/10/2024 10:40	15.85	22.57	0.01	7.3	389.34	9.06	0.51
9/10/2024 10:30	15.69	22.36	0.01	7.3	392.07	9.04	0.51
9/10/2024 10:20	15.58	22.53	0.01	7.29	394.92	9.04	0.51
9/10/2024 10:10	15.51	22.46	0.01	7.29	396.1	9.04	0.48
9/10/2024 10:00	15.4	22.51	0.01	7.25	400.67	8.99	0.47
9/10/2024 9:50	15.25	22.62	0.01	7.24	402.05	8.96	0.49
9/10/2024 9:40	15.2	22.66	0.01	7.22	403.3	8.94	0.48
9/10/2024 9:30	15.18	22.58	0.01	7.22	403.17	8.97	0.49
9/10/2024 9:20	15.19	22.64	0.01	7.22	403.17	8.97	0.48
9/10/2024 9:10	15.15	22.63	0.01	7.23	403.35	8.94	0.5
9/10/2024 9:00	15.12	22.71	0.01	7.21	405.53	8.94	0.49
9/10/2024 8:50	15.09	22.69	0.01	7.22	406.98	8.92	0.49
9/10/2024 8:40	15.07	22.82	0.01	7.18	409.13	8.87	0.49
9/10/2024 8:30	15.07	22.61	0.01	7.19	408.6	8.86	0.48
9/10/2024 8:20	15.06	22.9	0.01	7.16	410.07	8.82	0.5
9/10/2024 8:10	15.06	22.84	0.01	7.16	411.69	8.82	0.51
9/10/2024 8:00	15.06	22.91	0.01	7.16	411.24	8.79	0.5
9/10/2024 7:50	15.06	22.81	0.01	7.16	411.7	8.79	0.5
9/10/2024 7:40	15.07	23.02	0.01	7.15	412.12	8.77	0.49
9/10/2024 7:30	15.07	22.93	0.01	7.19	410.09	8.74	0.48
9/10/2024 7:20	15.08	23.02	0.01	7.14	412.33	8.73	0.49
9/10/2024 7:10	15.09	23.02	0.01	7.13	412.64	8.72	0.49
9/10/2024 7:00	15.1	23.11	0.01	7.12	412.69	8.72	0.5
9/10/2024 6:50	15.12	22.91	0.01	7.15	411.26	8.7	0.49
9/10/2024 6:40	15.14	23.14	0.01	7.13	412.06	8.67	0.48
9/10/2024 6:30	15.16	22.98	0.01	7.17	409.95	8.69	0.5
9/10/2024 6:20	15.18	23.14	0.01	7.12	411.9	8.67	0.5
9/10/2024 6:10	15.2	23.13	0.01	7.16	409.83	8.67	0.51
9/10/2024 6:00	15.22	23.06	0.01	7.13	411.02	8.67	0.51
9/10/2024 5:50	15.24	23.01	0.01	7.17	408.26	8.65	0.49
9/10/2024 5:40	15.26	23.24	0.01	7.12	410.84	8.67	0.5
9/10/2024 5:30	15.27	23.08	0.01	7.14	415.21	8.67	0.52
9/10/2024 5:20	15.29	23.11	0.01	7.13	410.55	8.65	0.51
9/10/2024 5:10	15.31	22.95	0.01	7.17	408.83	8.65	0.52
9/10/2024 5:00	15.33	23.21	0.01	7.13	410.09	8.63	0.5
9/10/2024 4:50	15.36	23.04	0.01	7.14	410.1	8.65	0.56
9/10/2024 4:40	15.38	23.22	0.01	7.13	410.52	8.64	0.53
9/10/2024 4:30	15.39	23.12	0.01	7.14	410.13	8.63	0.5
9/10/2024 4:20	15.41	23.29	0.01	7.13	409.69	8.62	0.51
9/10/2024 4:10	15.43	23.1	0.01	7.13	410.22	8.62	0.5
9/10/2024 4:00	15.44	23.29	0.01	7.13	410.82	8.6	0.53

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9/10/2024 3:50	15.46	23.24	0.01	7.14	410.2	8.62	0.5
9/10/2024 3:40	15.48	23.37	0.01	7.12	410.4	8.61	0.51
9/10/2024 3:30	15.49	23.17	0.01	7.13	411.01	8.61	0.52
9/10/2024 3:20	15.51	23.39	0.01	7.12	410.19	8.6	0.52
9/10/2024 3:10	15.53	23.18	0.01	7.13	410.17	8.58	0.54
9/10/2024 3:00	15.55	23.38	0.01	7.13	409.82	8.59	0.52
9/10/2024 2:50	15.56	23.33	0.01	7.14	409.29	8.58	0.49
9/10/2024 2:40	15.59	23.43	0.01	7.13	409.79	8.59	0.53
9/10/2024 2:40	15.59	23.43	0.01	7.13	409.79	8.59	0.53
9/10/2024 2:30	15.61	22.94	0.01	7.21	405.61	8.58	0.5
9/10/2024 2:20	15.63	23.4	0.01	7.12	410.24	8.59	0.54
9/10/2024 2:10	15.65	23.23	0.01	7.16	408.37	8.58	0.54
9/10/2024 2:00	15.67	23.47	0.01	7.12	409.84	8.57	0.51
9/10/2024 1:50	15.68	23.29	0.01	7.17	408.07	8.56	0.5
9/10/2024 1:40	15.7	23.45	0.01	7.12	410.27	8.55	0.52
9/10/2024 1:30	15.72	23.3	0.01	7.16	407.42	8.54	0.51
9/10/2024 1:20	15.75	23.47	0.01	7.13	408.57	8.54	0.53
9/10/2024 1:10	15.77	23.09	0.01	7.15	408.53	8.54	0.52
9/10/2024 1:00	15.8	23.51	0.01	7.13	408.92	8.54	0.53
9/10/2024 0:50	15.83	23.45	0.01	7.14	408.14	8.52	0.52
9/10/2024 0:40	15.86	23.46	0.01	7.12	408.36	8.51	0.54
9/10/2024 0:30	15.89	23.49	0.01	7.14	407.52	8.52	0.54
9/10/2024 0:20	15.92	23.6	0.01	7.13	407.8	8.49	0.54
9/10/2024 0:10	15.94	23.41	0.01	7.15	406.77	8.5	0.52
9/10/2024 0:00	15.97	23.62	0.01	7.13	408.55	8.49	0.53
9/9/2024 23:50	16	23.39	0.01	7.14	407.83	8.49	0.52
9/9/2024 23:40	16.03	23.63	0.01	7.12	407.77	8.47	0.56
9/9/2024 23:30	16.06	23.56	0.01	7.12	407.56	8.45	0.55
9/9/2024 23:20	16.09	23.65	0.01	7.11	407.3	8.46	1.1
9/9/2024 23:10	16.12	23.49	0.01	7.13	406.3	8.46	0.55
9/9/2024 23:00	16.15	23.71	0.01	7.11	406.57	8.45	0.54
9/9/2024 22:50	16.19	23.46	0.01	7.14	404.86	8.45	0.54
9/9/2024 22:40	16.22	23.73	0.01	7.12	405.05	8.45	0.56
9/9/2024 22:30	16.25	23.55	0.01	7.11	406.33	8.43	0.57
9/9/2024 22:20	16.28	23.63	0.01	7.13	404.94	8.42	0.57
9/9/2024 22:10	16.31	23.63	0.01	7.13	405.09	8.4	0.57
9/9/2024 22:00	16.35	23.73	0.01	7.13	404.91	8.41	0.54
9/9/2024 21:50	16.38	23.52	0.01	7.13	405.12	8.41	0.56
9/9/2024 21:40	16.41	23.77	0.01	7.12	405.09	8.41	0.56
9/9/2024 21:30	16.44	23.54	0.01	7.13	404.77	8.39	0.56
9/9/2024 21:20	16.47	23.72	0.01	7.13	403.95	8.39	0.56
9/9/2024 21:10	16.5	23.49	0.01	7.14	403.8	8.39	0.57
9/9/2024 21:00	16.53	23.62	0.01	7.13	403.41	8.37	0.57
9/9/2024 20:50	16.56	23.61	0.01	7.14	402.75	8.37	0.57
9/9/2024 20:40	16.59	23.69	0.01	7.14	401.77	8.37	0.56
9/9/2024 20:30	16.62	23.39	0.01	7.15	401.27	8.34	0.57
9/9/2024 20:20	16.65	23.63	0.01	7.14	401.83	8.36	0.57

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9/9/2024 20:10	16.68	23.43	0.01	7.12	402.45	8.34	0.58
9/9/2024 20:00	16.7	23.6	0.01	7.14	400.78	8.35	0.56
9/9/2024 19:50	16.74	23.33	0.01	7.15	400.33	8.37	0.57
9/9/2024 19:40	16.77	23.67	0.01	7.15	399.58	8.35	0.59
9/9/2024 19:30	16.79	23.35	0.01	7.16	398.74	8.37	0.58
9/9/2024 19:20	16.83	23.5	0.01	7.16	398.29	8.37	0.6
9/9/2024 19:10	16.86	23.28	0.01	7.18	396.94	8.37	0.56
9/9/2024 19:00	16.89	23.56	0.01	7.16	396.49	8.38	0.59
9/9/2024 18:50	16.91	23.35	0.01	7.19	395.62	8.38	0.57
9/9/2024 18:40	16.94	23.49	0.01	7.14	395.85	8.39	0.59
9/9/2024 18:30	16.96	23.08	0.01	7.18	395.49	8.42	0.6
9/9/2024 18:20	16.99	23.26	0.01	7.2	394.31	8.43	0.59
9/9/2024 18:10	17	23.11	0.01	7.19	395.1	8.45	0.6
9/9/2024 18:00	17.02	23.29	0.01	7.2	394.31	8.44	0.6
9/9/2024 17:50	17.03	23.1	0.01	7.2	393.51	8.44	0.6
9/9/2024 17:40	17.06	23.13	0.01	7.21	392.33	8.44	0.61
9/9/2024 17:30	17.07	22.95	0.01	7.21	392.82	8.5	0.61
9/9/2024 17:20	17.1	23.2	0.01	7.22	392.16	8.5	0.6
9/9/2024 17:10	17.11	23.07	0.01	7.24	392.62	8.48	0.6
9/9/2024 17:00	17.13	23.2	0.01	7.22	392.35	8.51	0.6
9/9/2024 16:50	17.16	22.74	0.01	7.27	390.71	8.5	0.6
9/9/2024 16:40	17.2	23.02	0.01	7.23	392.49	8.51	0.62
9/9/2024 16:30	17.22	22.84	0.01	7.3	389.1	8.51	0.61
9/9/2024 16:20	17.28	23.1	0.01	7.24	391.11	8.54	0.63
9/9/2024 16:10	17.32	22.93	0.01	7.28	389.18	8.56	0.61
9/9/2024 16:00	17.37	23.08	0.01	7.26	390.01	8.59	0.63
9/9/2024 15:50	17.38	23.02	0.01	7.28	388.07	8.59	0.62
9/9/2024 15:40	17.43	22.97	0.01	7.27	388.01	8.57	0.62
9/9/2024 15:30	17.48	22.74	0.01	7.28	387.01	8.61	0.63
9/9/2024 15:20	17.47	23	0.01	7.28	385.98	8.64	0.62
9/9/2024 15:10	17.5	22.76	0.01	7.32	383.1	8.61	0.62
9/9/2024 15:00	17.47	23.05	0.01	7.29	384.85	8.61	0.62
9/9/2024 14:50	17.45	22.9	0.01	7.32	383.31	8.65	2.3
9/9/2024 14:40	17.45	22.94	0.01	7.28	384.14	8.67	0.62
9/9/2024 14:30	17.43	23	0.01	7.31	381.45	8.67	0.63
9/9/2024 14:20	17.47	23.01	0.01	7.29	381	8.7	0.62
9/9/2024 14:10	17.46	22.7	0.01	7.33	378.3	8.71	0.6
9/9/2024 14:00	17.5	23.02	0.01	7.31	378.56	8.73	0.64
9/9/2024 13:50	17.47	22.88	0.01	7.34	377.86	8.74	0.62
9/9/2024 13:40	17.45	23	0.01	7.33	377.4	8.75	0.61
9/9/2024 13:30	17.39	22.85	0.01	7.34	376.97	8.77	0.61
9/9/2024 13:20	17.38	23.01	0.01	7.33	378.2	8.79	0.61
9/9/2024 13:10	17.36	22.84	0.01	7.33	379.47	8.83	0.61
9/9/2024 13:00	17.28	22.98	0.01	7.34	380.03	8.84	0.6
9/9/2024 12:50	17.15	22.78	0.01	7.32	382.45	8.83	0.59
9/9/2024 12:40	17.09	22.93	0.01	7.32	382.55	8.84	0.6
9/9/2024 12:30	17.13	22.76	0.01	7.34	382.98	8.87	0.61

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9/9/2024 12:20	17.06	22.89	0.01	7.34	383.24	8.87	0.6
9/9/2024 12:10	16.92	22.74	0.01	7.34	385.54	8.89	0.58
9/9/2024 12:00	16.71	22.89	0.01	7.33	388.11	8.87	0.56
9/9/2024 11:50	16.55	22.69	0.01	7.35	388.48	8.81	0.56
9/9/2024 11:40	16.52	22.95	0.01	7.29	391.45	8.85	0.57
9/9/2024 11:30	16.47	22.83	0.01	7.28	392.81	8.79	0.56
9/9/2024 11:20	16.48	22.96	0.01	7.28	391.24	8.78	0.55
9/9/2024 11:10	16.48	22.83	0.01	7.27	393.27	8.79	0.56
9/9/2024 11:00	16.54	22.99	0.01	7.29	391.1	8.82	0.57
9/9/2024 10:50	16.61	22.87	0.01	7.31	389.75	8.84	0.57
9/9/2024 10:40	16.54	23.1	0.01	7.28	392.26	8.82	0.56
9/9/2024 10:30	16.57	23.04	0.01	7.3	391.96	8.87	0.57
9/9/2024 10:20	16.5	23.13	0.01	7.28	395.07	8.85	0.55
9/9/2024 10:10	16.27	23.03	0.01	7.32	394.82	8.77	0.53
9/9/2024 10:00	16.23	23.31	0.01	7.22	401.31	8.73	0.57
9/9/2024 9:50	16.19	23.19	0.01	7.22	401.57	8.68	0.55
9/9/2024 9:40	16.2	23.39	0.01	7.22	401.58	8.71	0.55
9/9/2024 9:30	16.19	23.37	0.01	7.25	400.1	8.67	0.54
9/9/2024 9:20	16.18	23.51	0.01	7.19	403.78	8.68	0.55
9/9/2024 9:10	16.16	23.36	0.01	7.22	402.51	8.64	0.55
9/9/2024 9:00	16.16	23.5	0.01	7.19	403.98	8.66	0.55
9/9/2024 8:50	16.15	23.34	0.01	7.19	404.72	8.63	0.54
9/9/2024 8:40	16.15	23.49	0.01	7.18	405.19	8.61	0.57
9/9/2024 8:30	16.14	23.56	0.01	7.18	405.16	8.56	0.56
9/9/2024 8:20	16.14	23.64	0.01	7.16	406.59	8.58	0.55
9/9/2024 8:10	16.13	23.47	0.01	7.21	404.13	8.56	0.51
9/9/2024 8:00	16.13	23.61	0.01	7.15	407.59	8.54	0.57
9/9/2024 7:50	16.13	23.5	0.01	7.18	406.81	8.52	0.53
9/9/2024 7:40	16.12	23.66	0.01	7.12	409.68	8.52	0.54
9/9/2024 7:30	16.12	23.62	0.01	7.13	409.6	8.5	0.55
9/9/2024 7:20	16.12	23.68	0.01	7.14	409.07	8.49	0.53
9/9/2024 7:10	16.13	23.66	0.01	7.14	409.02	8.49	0.54
9/9/2024 7:00	16.13	23.72	0.01	7.12	409.55	8.48	0.54
9/9/2024 6:50	16.14	23.64	0.01	7.16	407.82	8.46	0.55
9/9/2024 6:40	16.14	23.76	0.01	7.12	409.51	8.47	0.56
9/9/2024 6:30	16.15	23.68	0.01	7.14	408.08	8.47	0.54
9/9/2024 6:20	16.15	23.69	0.01	7.12	409.17	8.45	0.57
9/9/2024 6:10	16.16	23.67	0.01	7.14	408.26	8.48	0.55
9/9/2024 6:00	16.17	23.76	0.01	7.12	409.27	8.47	0.54
9/9/2024 5:50	16.17	23.28	0.01	7.12	409.64	8.46	0.52
9/9/2024 5:40	16.18	23.78	0.01	7.11	410.04	8.46	0.55
9/9/2024 5:30	16.18	23.67	0.01	7.09	411.28	8.48	0.53
9/9/2024 5:20	16.19	23.7	0.01	7.1	409.11	8.47	0.55
9/9/2024 5:10	16.19	23.69	0.01	7.13	408.17	8.46	0.55
9/9/2024 5:00	16.2	23.77	0.01	7.11	408.54	8.46	0.55
9/9/2024 4:50	16.2	23.73	0.01	7.13	407.95	8.45	0.55
9/9/2024 4:40	16.21	23.76	0.01	7.11	408.22	8.44	0.53

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9/9/2024 4:30	16.22	23.75	0.01	7.13	407.2	8.45	0.55
9/9/2024 4:20	16.23	23.82	0.01	7.1	408.05	8.44	0.56
9/9/2024 4:10	16.23	23.64	0.01	7.1	408.03	8.46	0.56
9/9/2024 4:00	16.24	23.69	0.01	7.11	406.89	8.44	0.56
9/9/2024 3:50	16.24	23.6	0.01	7.11	407.99	8.43	0.54
9/9/2024 3:40	16.25	23.81	0.01	7.1	407.12	8.45	0.56
9/9/2024 3:30	16.26	23.62	0.01	7.13	406.13	8.43	3.43
9/9/2024 3:20	16.27	23.67	0.01	7.11	407.26	8.45	0.56
9/9/2024 3:10	16.28	23.67	0.01	7.1	408.2	8.43	0.54
9/9/2024 3:00	16.29	23.82	0.01	7.11	406.88	8.44	0.57
9/9/2024 2:50	16.29	23.61	0.01	7.13	406.08	8.42	0.55
9/9/2024 2:40	16.3	23.79	0.01	7.1	407.06	8.41	0.58
9/9/2024 2:30	16.31	23.55	0.01	7.12	406.53	8.42	0.54
9/9/2024 2:20	16.32	23.8	0.01	7.1	407.04	8.41	0.56
9/9/2024 2:10	16.33	23.7	0.01	7.14	405.52	8.41	0.55
9/9/2024 2:00	16.34	23.74	0.01	7.1	407.41	8.41	0.57
9/9/2024 1:50	16.35	23.55	0.01	7.11	407.34	8.43	0.56
9/9/2024 1:40	16.36	23.76	0.01	7.1	407.09	8.41	0.56
9/9/2024 1:30	16.37	23.72	0.01	7.21	408.18	8.39	0.56
9/9/2024 1:20	16.39	23.69	0.01	7.1	407.38	8.4	0.57
9/9/2024 1:10	16.4	23.67	0.01	7.17	403.9	8.4	0.56
9/9/2024 1:00	16.41	23.76	0.01	7.1	407.1	8.42	0.57
9/9/2024 0:50	16.41	23.72	0.01	7.14	405.15	8.4	0.55
9/9/2024 0:40	16.43	23.82	0.01	7.11	406.08	8.4	0.57
9/9/2024 0:30	16.44	23.7	0.01	7.15	404.79	8.37	0.53
9/9/2024 0:20	16.45	23.84	0.01	7.11	406.24	8.39	0.57
9/9/2024 0:10	16.46	23.57	0.01	7.13	405.44	8.36	0.56
9/9/2024 0:00	16.48	23.86	0.01	7.11	406.47	8.36	0.55