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	2024-08-26	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	2023-08-26	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 22nd further downstream (not the permitted location) as it was discovered there was a subsurface flow output from East Creek where a sonde could be installed. The original location is still dry. It was observed that the sonde data had some inaccuracies as the turbidity seemed to creep up over days.
- Woodfibre water treatment plant was sampled on August 30th as when the QP went to site on August 27th there was no treated water to sample.
- Triton sampled end of pipe samples from the end of pipe.
- Included in Appendix C is data from the Water Treatment Plant and data from using a YSI downstream while discharging to document receiving environment as 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	2024-08-26	Yes-Appendix C	0 m^3
Woodfibre	2024-08-27	Yes-Appendix C	0 m^3
Woodfibre	2024-08-28	Yes-Appendix C	290 m^3
Woodfibre	2024-08-29	Yes-Appendix C	53 m^3
Woodfibre	2024-08-30	Yes-Appendix C	136 m^3
Woodfibre	2024-08-31	Yes-Appendix C	302 m^3
Woodfibre	2024-09-01	Yes-Appendix C	229 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	2024-08-27	Yes *	Full set of lab sample results, photo and documentation are provided in Appendix D.

Table 5: Downstream Monitoring Information

	Date of Lab Sample	Real Time Monitored	Results
Woodfibre Downstream	2024-08-27	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. 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:			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					VA24C1792-001	VA24C1792-002					
	Date Sampled					26-Aug-2024	26-Aug-2024					
	Time Sampled					09:00	09:41					
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	6.9	7.02		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		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	-	-	-	-	48	61					
Turbidity (field)	NTU	Varies with background, see note Guideline = 80.5	Varies with background, see note Guideline = 165 5-week discrete sampling average = 178 (DS)	Varies with background, see note Guideline = 80.5	Varies with background, see note Guideline = 165 5-week discrete sampling average = 178 (DS)	73.2	74.6		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	10.94	10.13		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	-	-	-	-	17.2	17					
Total Dissolved Solids	mg/L	-	-	-	-	34	31					
Total Suspended Solids	mg/L	Varies with background, see note Guideline = 41.9	Varies with background, see note Guideline = 168.8 5-week discrete sampling average = 165.48 (DS)	Varies with background, see note Guideline = 41.9	Varies with background, see note Guideline = 168.8 5-week discrete sampling average = 165.48 (DS)	31.9	**52.5**	**TSS at the downstream location exceeds the short-term BCWG for FAL.** However, this should not be deemed a reportable exceedance because the discharge from BCR has not begun. Therefore, the high total TSS is likely due to natural varibility.	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.	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 >	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	-	-	-	-	0.61	0.61			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	10.8	9.3	The upstream location has moderate sensitivity to acid inputs (i.e. medium buffering capacity), while the downstream location has 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 = 1.8	Varies with pH, temperature and salinity. See note. Guideline = 131	Varies with pH, temperature and salinity. See note. Guideline = 20	0.069	0.051		Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 27D in BC WQG for guideline values.	Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 27C in BC WQG for guideline values.	Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 27F in BC WQG for guideline values.	Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 27E in BC WQG for guideline values.
Bromide	mg/L	-	-	-	-	< 0.050	< 0.050					
Chloride	mg/L	600	150	> 110% of background	< 90% of background	1.34	1.21				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 = 0.626	-	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	0.0206	0.0175					
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	-	-	-	-	0.107	0.1					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.0708	0.083			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	-	-	3.53	3.04			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 = 0.022 5-week field average = **5.40** (US), **6.85** (DS)	-	-	***2.8***	***3.13***	**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. 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	0.00028	0.00032					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.0336	0.0388			Working guideline status		
Beryllium (Be)-Total	mg/L	-	0.00013	-	0.100	< 0.00010	< 0.00010			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	0.0000095	0.0000112					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	5.13	4.7					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000088	0.000112					
Chromium (Cr) - Total	mg/L	-	-	-	-	0.00064	0.00111					
Chromium (Cr(III))-Total	mg/L	-	0.0089	-	0.056	0.00064	0.00111			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	-	-	0.00057	0.00089					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002	***0.0036***	***0.0041***	**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. Therefore, the high total Cu concentration may be characteristic of the Squamish River and the local geology.				
Iron (Fe)-Total	mg/L	1	-	-	-	**1.35**	**1.86**	**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 = 0.0087	Varies with hardness. See Note. Guideline = 0.0037	0.14	0.002	0.000379	0.000421		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	-	-	-	-	0.0016	0.0018					
Magnesium (Mg)-Total	mg/L	-	-	-	-	1.06	1.27					
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 0.715	Varies with hardness Guideline = 0.768	-	-	0.0377	0.0503		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	-	-	0.000469	0.000438					
Nickel (Ni)-Total	mg/L	-	Varies with hardness Guideline = 0.025	-	0.0083	0.00085	0.00112			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	-	-	0.098	0.116			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	-	-	-	-	1.07	1.19					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00261	0.00324					
Selenium (Se)-Total	mg/L	-	0.002	-	0.002	< 0.000050	< 0.000050			Guideline for freshwater aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on 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	-	-	-	-	8.02	7.89					
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	< 0.000010	0.000012		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	-	-	-	-	2.33	2.13					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0463	0.0458					
Sulfur (S)-Total	mg/L	-	-	-	-	1.02	0.8					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.0008	-	-	0.000016	0.000021			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	-	-	-	-	0.00012	0.00019					
Tin (Sn)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Titanium (Ti)-Total	mg/L	-	-	-	-	0.0773	0.12					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Total	mg/L	-	0.0085	-	-	0.000063	0.000083			Working guideline status		
Vanadium (V)-Total	mg/L	-	-	-	0.050	0.00389	0.00519					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	Guideline = 0.010 5-week field average = **0.026** (US), **0.020** (DS)	*0.0051*	*0.0074*	**Total Zn exceeds the BCWQ MAL long-term guidelines at both upstream and downstream locations.** However, this should not be deemed a reportable exceedance because the background total Zn concentration at the upstream location exceeds the BCWG too. 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	-	-	-	-	0.00034	0.00034					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0385	0.0461					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00012	0.0001					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00374	0.00405					
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 = 0.000096	Varies with hardness, see note Guideline = 0.000064	-	-	< 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	-	-	3.65	3.2	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 = 0.0004	Guideline varies with other parameters, see note Guideline = 0.0002 5-week field average = **0.0015** (US), **0.0054** (DS)	-	-	**0.00036**	**0.00038**	**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	-	-	-	0.049	0.045					
Lead (Pb)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	< 0.0010	< 0.0010					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.464	0.393					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00752	0.00675					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.00042	0.000387					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	0.591	0.607					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00076	0.00084					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	3.26	2.73					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	1.73	1.4					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.025	0.0215					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	0.92	0.76					
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	-	-	-	-	0.00116	0.00162					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.000021	0.00002					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	0.00104	0.00084					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness Guideline = 0.008	Varies with pH, DOC, hardness Guideline = 0.004 5-week field average = 0.003 (DS)	-	-	0.0012	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 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: 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	7.02
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations				12.2	12.0
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations				73.20	74.60
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				17.2	17
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations				0.61	0.61
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations				10.8	9.3
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations				1.34	1.21

BCR Site Receiving Environment Lab Documentation

ALS Canada Ltd.

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CERTIFICATE OF ANALYSIS

Work Order	: **VA24C1792**	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	: 26-Aug-2024 11:25
PO	: 11964-Task 20-Phase 3C-4C	Date Analysis Commenced	: 27-Aug-2024
C-O-C number	: ----	Issue Date	: 06-Sep-2024 11:43
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*
	Lab Assistant	Metals, Burnaby, British Columbia
	Laboratory Analyst	Metals, Burnaby, British Columbia
	Analyst	Metals, Burnaby, British Columbia
	Department Manager - Metals	Metals, Burnaby, British Columbia
	Analyst	Inorganics, Burnaby, British Columbia
	Lab Analyst	Metals, Burnaby, British Columbia
	Lab Assistant	Inorganics, Burnaby, British Columbia
	Senior Analyst	Inorganics, Waterloo, Ontario
	Senior Analyst	Metals, Waterloo, Ontario
	Account Manager Assistant	Administration, Burnaby, British Columbia
	Supervisor - Inorganic	Inorganics, 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	26-Aug-2024 09:00	26-Aug-2024 09:41	----	----	----
						VA24C1792-001	VA24C1792-002	--------	--------	--------
						Result	Result	----	----	----
Field Tests										
Conductivity, field	----	EF001/VA	0.10	µS/cm		48.000	61.000	----	----	----
pH, field	----	EF001/VA	0.10	pH units		6.90	7.02	----	----	----
Temperature, field	----	EF001/VA	0.10	°C		12.2	12.0	----	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		11.0	9.61	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		17.2	17.0	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		34	31	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		31.9	52.5	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		10.8	9.3	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.0691	0.0509	----	----	----
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		1.34	1.21	----	----	----
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		0.0206	0.0175	----	----	----
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		0.107	0.100	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.0708	0.0830	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		3.53	3.04	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		0.61	0.61	----	----	----
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		2.80	3.13	----	----	----
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	26-Aug-2024 09:00	26-Aug-2024 09:41	----	----	----
						VA24C1792-001	VA24C1792-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00028	0.00032	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.0336	0.0388	----	----	----
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		0.0000095	0.0000112	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		5.13	4.70	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000088	0.000112	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		0.00064	0.00111	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		0.00057	0.00089	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00356	0.00405	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		1.35	1.86	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000379	0.000421	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0016	0.0018	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		1.06	1.27	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.0377	0.0503	----	----	----
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		0.000469	0.000438	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		0.00085	0.00112	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		0.098	0.116	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		1.07	1.19	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00261	0.00324	----	----	----
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		8.02	7.89	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	0.000012	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		2.33	2.13	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0463	0.0458	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		1.02	0.80	----	----	----
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		0.000016	0.000021	----	----	----

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	26-Aug-2024 09:00	26-Aug-2024 09:41	----	----	----
						VA24C1792-001	VA24C1792-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		0.00012	0.00019	----	----	----
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		0.0773	0.120	----	----	----
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		0.000063	0.000083	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.00389	0.00519	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		0.0051	0.0074	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		0.00034	0.00034	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0385	0.0461	----	----	----
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		0.00012	0.00010	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00374	0.00405	----	----	----
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		3.65	3.20	----	----	----
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		0.00036	0.00038	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.049	0.045	----	----	----
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		0.464	0.393	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00752	0.00675	----	----	----
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		0.000420	0.000387	----	----	----
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	26-Aug-2024 09:00	26-Aug-2024 09:41	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C1792-001	VA24C1792-002	--------	--------	--------
						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		0.591	0.607	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00076	0.00084	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		3.26	2.73	----	----	----
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		1.73	1.40	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0250	0.0215	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		0.92	0.76	----	----	----
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		0.00116	0.00162	----	----	----
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		0.000021	0.000020	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		0.00104	0.00084	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0012	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		0.00064	0.00111	----	----	----

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	: **VA24C1792**	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	: 26-Aug-2024 11:25
PO	: 11964-Task 20-Phase 3C-4C	Issue Date	: 06-Sep-2024 11:43
C-O-C number	: ----		
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

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

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

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

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

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU DS 1	E298	26-Aug-2024	30-Aug-2024	28 days	4 days	✓	30-Aug-2024	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU US 1	E298	26-Aug-2024	30-Aug-2024	28 days	4 days	✓	30-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU DS 1	E235.Br-L	26-Aug-2024	27-Aug-2024	28 days	1 days	✓	27-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU US 1	E235.Br-L	26-Aug-2024	27-Aug-2024	28 days	1 days	✓	27-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU DS 1	E235.Cl	26-Aug-2024	27-Aug-2024	28 days	1 days	✓	27-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU US 1	E235.Cl	26-Aug-2024	27-Aug-2024	28 days	1 days	✓	27-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE SQU DS 1	E235.F	26-Aug-2024	27-Aug-2024	28 days	1 days	✓	27-Aug-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	26-Aug-2024	27-Aug-2024	28 days	1 days	✓	27-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SQU DS 1	E235.NO3-L	26-Aug-2024	27-Aug-2024	3 days	1 days	✓	27-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SQU US 1	E235.NO3-L	26-Aug-2024	27-Aug-2024	3 days	1 days	✓	27-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SQU DS 1	E235.NO2-L	26-Aug-2024	27-Aug-2024	3 days	1 days	✓	27-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SQU US 1	E235.NO2-L	26-Aug-2024	27-Aug-2024	3 days	1 days	✓	27-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU DS 1	E235.SO4	26-Aug-2024	27-Aug-2024	28 days	1 days	✓	27-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU US 1	E235.SO4	26-Aug-2024	27-Aug-2024	28 days	1 days	✓	27-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU DS 1	E366	26-Aug-2024	30-Aug-2024	28 days	4 days	✓	31-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU US 1	E366	26-Aug-2024	30-Aug-2024	28 days	4 days	✓	31-Aug-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)										
SQU DS 1	E372-U	26-Aug-2024	30-Aug-2024	28 days	4 days	✓	31-Aug-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SQU US 1	E372-U	26-Aug-2024	30-Aug-2024	28 days	4 days	✓	31-Aug-2024	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SQU DS 1	E509	26-Aug-2024	01-Sep-2024	28 days	6 days	✓	01-Sep-2024	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
SQU US 1	E509	26-Aug-2024	01-Sep-2024	28 days	6 days	✓	01-Sep-2024	28 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SQU DS 1	E421	26-Aug-2024	03-Sep-2024	180 days	8 days	✓	04-Sep-2024	180 days	9 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
SQU US 1	E421	26-Aug-2024	03-Sep-2024	180 days	8 days	✓	04-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	26-Aug-2024	----	----	----		28-Aug-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	26-Aug-2024	----	----	----		28-Aug-2024	----	2 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
SQU DS 1	E358-L	26-Aug-2024	30-Aug-2024	28 days	4 days	✓	30-Aug-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
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
SQU US 1	E358-L	26-Aug-2024	30-Aug-2024	28 days	4 days	✓	30-Aug-2024	28 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
SQU DS 1	E290	26-Aug-2024	27-Aug-2024	14 days	1 days	✓	27-Aug-2024	14 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
SQU US 1	E290	26-Aug-2024	27-Aug-2024	14 days	1 days	✓	27-Aug-2024	14 days	1 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
SQU DS 1	E162	26-Aug-2024	----	----	----		31-Aug-2024	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
SQU US 1	E162	26-Aug-2024	----	----	----		31-Aug-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
SQU DS 1	E160	26-Aug-2024	----	----	----		31-Aug-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
SQU US 1	E160	26-Aug-2024	----	----	----		31-Aug-2024	7 days	5 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
SQU DS 1	E532	26-Aug-2024	----	----	----		29-Aug-2024	28 days	3 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
SQU US 1	E532	26-Aug-2024	----	----	----		29-Aug-2024	28 days	3 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved) SQU DS 1	E508	26-Aug-2024	05-Sep-2024	28 days	10 days	✓	05-Sep-2024	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved) SQU US 1	E508	26-Aug-2024	05-Sep-2024	28 days	10 days	✓	05-Sep-2024	28 days	10 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) SQU DS 1	E420	26-Aug-2024	03-Sep-2024	180 days	9 days	✓	05-Sep-2024	180 days	10 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) SQU US 1	E420	26-Aug-2024	03-Sep-2024	180 days	9 days	✓	05-Sep-2024	180 days	10 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) SQU DS 1	E395	26-Aug-2024	----	----	----		30-Aug-2024	7 days	4 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) SQU US 1	E395	26-Aug-2024	----	----	----		30-Aug-2024	7 days	4 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1618242	1	9	11.1	5.0	✓
Ammonia by Fluorescence	E298	1625801	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1618246	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1618245	1	10	10.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1628649	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1622094	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1625802	1	18	5.5	5.0	✓
Fluoride in Water by IC	E235.F	1618244	1	7	14.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1618247	1	7	14.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1618248	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1618249	1	13	7.6	5.0	✓
TDS by Gravimetry	E162	1627731	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1623729	1	4	25.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1633713	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1624616	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1625803	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1625804	1	17	5.8	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1625888	1	18	5.5	5.0	✓
TSS by Gravimetry	E160	1627744	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1618242	1	9	11.1	5.0	✓
Ammonia by Fluorescence	E298	1625801	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1618246	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1618245	1	10	10.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1628649	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1622094	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1625802	1	18	5.5	5.0	✓
Fluoride in Water by IC	E235.F	1618244	1	7	14.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1618247	1	7	14.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1618248	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1618249	1	13	7.6	5.0	✓
TDS by Gravimetry	E162	1627731	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1623729	1	4	25.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1633713	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1624616	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1625803	1	16	6.2	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1625804	1	17	5.8	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1625888	1	18	5.5	5.0	✓
TSS by Gravimetry	E160	1627744	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1618242	1	9	11.1	5.0	✓
Ammonia by Fluorescence	E298	1625801	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1618246	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1618245	1	10	10.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1628649	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1622094	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1625802	1	18	5.5	5.0	✓
Fluoride in Water by IC	E235.F	1618244	1	7	14.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1618247	1	7	14.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1618248	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1618249	1	13	7.6	5.0	✓
TDS by Gravimetry	E162	1627731	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1623729	1	4	25.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1633713	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1624616	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1625803	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1625804	1	17	5.8	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1625888	1	18	5.5	5.0	✓
TSS by Gravimetry	E160	1627744	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1625801	1	19	5.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1618246	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1618245	1	10	10.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1628649	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1622094	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1625802	1	18	5.5	5.0	✓
Fluoride in Water by IC	E235.F	1618244	1	7	14.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1618247	1	7	14.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1618248	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1618249	1	13	7.6	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1623729	1	4	25.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1633713	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1624616	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1625803	1	16	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1625804	1	17	5.8	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Sulfide by Colourimetry (Automated Flow)	E395	1625888	1	18	5.5	5.0	✓

Methodology References and Summaries

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

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Nitrogen by Colourimetry	E366 ALS Environmental - Vancouver	Water	Chinchilla Scientific Nitrate Method, 2011	Following digestion, total nitrogen is is determined colourimetrically using a discrete analyzer utilizing the vanadium chloride reduction method. This method of analysis is approved under US EPA 40 CFR Part 136 (May 2021).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methlyene blue colourimetric method. Results expressed "as H2S" if reported represent the maximum possible H2S concentration based on the total sulfide concentration in the sample. The H2S calculation converts Total Sulphide as (S2-) and reports it as Total Sulphide as (H2S)
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Hexavalent Chromium (Cr VI) by IC	E532 ALS Environmental - Waterloo	Water	APHA 3500-Cr C (Ion Chromatography)	Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection. Results are based on an un-filtered, field-preserved sample.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Un-ionized Total Hydrogen Sulfide (calculated)	EC395 ALS Environmental - Vancouver	Water	APHA 4500 -S H	Un-ionized sulfide is calculated using results from total sulfide analysis, pH, temperature, and ionic strength of the sample. Calculation of un-ionized sulfide using total sulfide concentrations may be biased high due to particulate forms of sulfide measured during total sulfide testing.
Total Trivalent Chromium (Cr III) by Calculation	EC535 ALS Environmental - Waterloo	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3 or Chloramine measurements provided by client and recorded on ALS report may affect the validity of results.

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

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

QUALITY CONTROL REPORT

Work Order	: **VA24C1792**	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	: 26-Aug-2024 11:25
PO	: 11964-Task 20-Phase 3C-4C	Date Analysis Commenced	: 27-Aug-2024
C-O-C number	: ----	Issue Date	: 06-Sep-2024 11:43
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*
	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
	Laboratory Analyst	Vancouver Metals, Burnaby, British Columbia
	Analyst	Vancouver Metals, Burnaby, British Columbia
	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
	Analyst	Vancouver Inorganics, Burnaby, British Columbia
	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
	Senior Analyst	Waterloo Inorganics, Waterloo, Ontario
	Senior Analyst	Waterloo Metals, Waterloo, Ontario
	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
	Supervisor - Inorganic	Waterloo Inorganics, 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: 1618242)											
VA24C1767-002	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	227	227	0.0881%	20%	----
Physical Tests (QC Lot: 1627731)											
FJ2402587-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	950	959	0.995%	20%	----
Physical Tests (QC Lot: 1627744)											
FJ2402587-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1618244)											
FJ2402555-001	Anonymous	Fluoride	16984-48-8	E235.F	0.100	mg/L	0.180	0.172	0.008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1618245)											
FJ2402555-001	Anonymous	Chloride	16887-00-6	E235.Cl	2.50	mg/L	<2.50	<2.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1618246)											
FJ2402555-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1618247)											
FJ2402555-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	3.20	3.19	0.282%	20%	----
Anions and Nutrients (QC Lot: 1618248)											
FJ2402555-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	0.0520	0.0516	0.699%	20%	----
Anions and Nutrients (QC Lot: 1618249)											
FJ2402555-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	353	351	0.444%	20%	----
Anions and Nutrients (QC Lot: 1625801)											
KS2403402-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0630	0.0618	1.85%	20%	----
Anions and Nutrients (QC Lot: 1625803)											
VA24C1938-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.377	0.376	0.261%	20%	----
Anions and Nutrients (QC Lot: 1625804)											
VA24C1792-001	SQU US 1	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0708	0.0712	0.465%	20%	----
Organic / Inorganic Carbon (QC Lot: 1625802)											
KS2403402-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	8.93	9.24	3.42%	20%	----
Total Sulfides (QC Lot: 1625888)											
VA24C1792-001	SQU US 1	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
Total Metals (QC Lot: 1624616)											
VA24C1259-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 1624616) - continued											
VA24C1259-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00413	0.00411	0.506%	20%	----
		Barium, total	7440-39-3	E420	0.0200	mg/L	<0.0200	<0.0200	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	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.000200	mg/L	<0.000200	<0.000200	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.100	mg/L	12.2	11.5	6.32%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000025	0.000023	0.000001	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00200	mg/L	<0.00200	<0.00200	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00100	mg/L	0.0207	0.0210	1.15%	20%	----
		Iron, total	7439-89-6	E420	0.030	mg/L	<0.030	<0.030	0	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.100	mg/L	1.58	1.57	0.876%	20%	----
		Manganese, total	7439-96-5	E420	0.00200	mg/L	0.00912	0.00910	0.00001	Diff <2x LOR	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00372	0.00370	0.540%	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	0.055	<0.050	0.005	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.100	mg/L	1.74	1.72	1.06%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00107	0.00102	0.00005	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	8.12	7.95	2.01%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	2.00	mg/L	7.72	7.88	0.166	Diff <2x LOR	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0482	0.0472	1.93%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	0.00042	0.00045	0.00003	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000100	mg/L	0.000229	0.000244	0.000015	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: 1624616) - continued											
VA24C1259-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00271	0.00273	0.00002	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0500	mg/L	<0.0500	<0.0500	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1633713)											
VA24C1615-002	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	0.0000053	0.0000003	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1622094)											
VA24C1753-003	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	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	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	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	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 1622094) - continued											
VA24C1753-003	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1628649)											
VA24C1498-009	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1623729)											
KS2403420-001	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: 1618242)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1627731)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1627744)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 1618244)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1618245)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1618246)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1618247)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1618248)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1618249)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1625801)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1625803)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1625804)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1625802)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1625888)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1624616)						
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: 1624616) - 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: 1633713)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1622094)						
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: 1622094) - 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: 1628649)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1623729)						
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: 1618242)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	100	85.0	115	----
Physical Tests (QCLot: 1627731)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	98.5	85.0	115	----
Physical Tests (QCLot: 1627744)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	86.1	85.0	115	----
Anions and Nutrients (QCLot: 1618244)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1618245)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1618246)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1618247)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1618248)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1618249)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1625801)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	94.4	85.0	115	----
Anions and Nutrients (QCLot: 1625803)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	91.4	75.0	125	----
Anions and Nutrients (QCLot: 1625804)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	91.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1625802)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	101	80.0	120	----
Total Sulfides (QCLot: 1625888)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	117	80.0	120	----
Total Metals (QCLot: 1624616)									

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: 1624616) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	104	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	101	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	107	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	93.6	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	104	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	90.4	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	99.2	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	101	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	104	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	102	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	105	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	92.1	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	106	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	119	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	100	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	111	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	113	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	94.2	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	99.1	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	99.8	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	91.0	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	96.3	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	97.5	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	98.6	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	107	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: 1624616) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	105	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	104	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Total Metals (QCLot: 1633713)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	98.8	80.0	120	----
Dissolved Metals (QCLot: 1622094)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	95.6	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	97.3	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	94.5	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	91.9	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	98.4	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	90.7	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	97.5	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	91.8	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	97.5	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	94.9	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	96.0	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	94.8	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	99.6	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	101	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	91.9	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	98.3	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	96.6	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	96.9	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	94.3	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	99.0	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	101	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	98.7	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	98.6	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	102	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	90.7	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	96.4	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	85.9	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: 1622094) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	94.8	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	101	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	99.3	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	95.4	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	91.3	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	96.2	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.6	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	96.2	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	96.6	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	91.5	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	101	80.0	120	----
Speciated Metals (QCLot: 1623729)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	99.8	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: 1618244)										
VA24C1657-001	Anonymous	Fluoride	16984-48-8	E235.F	20.1 mg/L	20 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1618245)										
VA24C1657-001	Anonymous	Chloride	16887-00-6	E235.Cl	1990 mg/L	2000 mg/L	99.7	75.0	125	----
Anions and Nutrients (QCLot: 1618246)										
VA24C1657-001	Anonymous	Bromide	24959-67-9	E235.Br-L	10.0 mg/L	10 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1618247)										
VA24C1657-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	49.6 mg/L	50 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 1618248)										
VA24C1657-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	9.64 mg/L	10 mg/L	96.4	75.0	125	----
Anions and Nutrients (QCLot: 1618249)										
VA24C1657-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	2080 mg/L	2000 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1625801)										
KS2403403-006	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.190 mg/L	0.2 mg/L	95.0	75.0	125	----
Anions and Nutrients (QCLot: 1625803)										
VA24C1938-002	Anonymous	Nitrogen, total	7727-37-9	E366	0.362 mg/L	0.4 mg/L	90.4	70.0	130	----
Anions and Nutrients (QCLot: 1625804)										
VA24C1792-002	SQU DS 1	Phosphorus, total	7723-14-0	E372-U	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1625802)										
KS2403403-006	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	4.91 mg/L	5 mg/L	98.2	70.0	130	----
Total Sulfides (QCLot: 1625888)										
VA24C1792-002	SQU DS 1	Sulfide, total (as S)	18496-25-8	E395	0.205 mg/L	0.2 mg/L	102	75.0	125	----
Total Metals (QCLot: 1624616)										
VA24C1306-001	Anonymous	Aluminum, total	7429-90-5	E420	0.188 mg/L	0.2 mg/L	93.9	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0186 mg/L	0.02 mg/L	93.0	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0198 mg/L	0.02 mg/L	99.2	70.0	130	----
		Barium, total	7440-39-3	E420	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0369 mg/L	0.04 mg/L	92.3	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00962 mg/L	0.01 mg/L	96.2	70.0	130	----
		Boron, total	7440-42-8	E420	0.088 mg/L	0.1 mg/L	88.6	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00386 mg/L	0.004 mg/L	96.6	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00942 mg/L	0.01 mg/L	94.2	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0389 mg/L	0.04 mg/L	97.3	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: 1624616) - continued										
VA24C1306-001	Anonymous	Cobalt, total	7440-48-4	E420	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		Copper, total	7440-50-8	E420	0.0200 mg/L	0.02 mg/L	100.0	70.0	130	----
		Iron, total	7439-89-6	E420	1.97 mg/L	2 mg/L	98.5	70.0	130	----
		Lead, total	7439-92-1	E420	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0852 mg/L	0.1 mg/L	85.2	70.0	130	----
		Magnesium, total	7439-95-4	E420	0.961 mg/L	1 mg/L	96.1	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0195 mg/L	0.02 mg/L	97.3	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0395 mg/L	0.04 mg/L	98.9	70.0	130	----
		Phosphorus, total	7723-14-0	E420	9.73 mg/L	10 mg/L	97.3	70.0	130	----
		Potassium, total	7440-09-7	E420	3.73 mg/L	4 mg/L	93.3	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0423 mg/L	0.04 mg/L	106	70.0	130	----
		Silicon, total	7440-21-3	E420	9.55 mg/L	10 mg/L	95.5	70.0	130	----
		Silver, total	7440-22-4	E420	0.00380 mg/L	0.004 mg/L	95.0	70.0	130	----
		Sodium, total	7440-23-5	E420	1.93 mg/L	2 mg/L	96.5	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	19.9 mg/L	20 mg/L	99.4	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0376 mg/L	0.04 mg/L	93.9	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00379 mg/L	0.004 mg/L	94.8	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----
		Tin, total	7440-31-5	E420	0.0189 mg/L	0.02 mg/L	94.5	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0381 mg/L	0.04 mg/L	95.2	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00401 mg/L	0.004 mg/L	100	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0994 mg/L	0.1 mg/L	99.4	70.0	130	----
		Zinc, total	7440-66-6	E420	0.390 mg/L	0.4 mg/L	97.4	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
Total Metals (QCLot: 1633713)										
VA24C1615-003	Anonymous	Mercury, total	7439-97-6	E508	0.0000952 mg/L	0 mg/L	95.2	70.0	130	----
Dissolved Metals (QCLot: 1622094)										
VA24C1753-004	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.194 mg/L	0.2 mg/L	96.9	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0181 mg/L	0.02 mg/L	90.6	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	0.0361 mg/L	0.04 mg/L	90.2	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00859 mg/L	0.01 mg/L	85.9	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.086 mg/L	0.1 mg/L	85.9	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00383 mg/L	0.004 mg/L	95.8	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00940 mg/L	0.01 mg/L	94.0	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0378 mg/L	0.04 mg/L	94.4	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0186 mg/L	0.02 mg/L	93.2	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: 1622094) - continued										
VA24C1753-004	Anonymous	Copper, dissolved	7440-50-8	E421	0.0179 mg/L	0.02 mg/L	89.7	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.87 mg/L	2 mg/L	93.4	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0180 mg/L	0.02 mg/L	90.2	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0891 mg/L	0.1 mg/L	89.1	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0186 mg/L	0.02 mg/L	93.0	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0361 mg/L	0.04 mg/L	90.3	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.3 mg/L	10 mg/L	103	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	4.01 mg/L	4 mg/L	100	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0398 mg/L	0.04 mg/L	99.6	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.02 mg/L	10 mg/L	90.2	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00370 mg/L	0.004 mg/L	92.4	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	20.5 mg/L	20 mg/L	102	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0368 mg/L	0.04 mg/L	92.0	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00365 mg/L	0.004 mg/L	91.3	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0225 mg/L	0.02 mg/L	112	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0183 mg/L	0.02 mg/L	91.5	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0388 mg/L	0.04 mg/L	97.1	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0180 mg/L	0.02 mg/L	89.9	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00368 mg/L	0.004 mg/L	91.9	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0969 mg/L	0.1 mg/L	96.9	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.378 mg/L	0.4 mg/L	94.4	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0384 mg/L	0.04 mg/L	96.0	70.0	130	----
Dissolved Metals (QCLot: 1628649)										
VA24C1498-010	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000893 mg/L	0 mg/L	89.3	70.0	130	----
Speciated Metals (QCLot: 1623729)										
KS2403420-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0407 mg/L	0.04 mg/L	102	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 -

Page 1 of

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	Triton Environmental	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	[redacted]	Quality Control (QC) Report with Report ☑ ☐ NO	PRIORITY (Business Days): 4 day [P4-20%] ☐ / 3 day [P3-25%] ☐ / 2 day [P2-50%] ☐
Phone:	[redacted]	☑ 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)] ☐
	[redacted] the final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Street:	[redacted]	Email 1 or Fax [redacted]	Date and Time Required for all E&P TATs: 03 Sept 24
City/Province:	[redacted]	Email 2	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:	[redacted]	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):	VA24C1792	ALS Contact: [redacted]	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	26-AUG-24	09:00	Water	R	R	R	R	R	R	R	R	R	R	R						N	9
	pH: 6.90 cond: 48µS/cm temp: 12.2°C																					
	SQU DS 1	26-AUG-24	09:41	Water	R	R	R	R	R	R	R	R	R	R	R						N	9
	pH: 7.02 cond: 61µS/cm temp: 12.0°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~~	~~6~~

Environmental Division
Vancouver
Work Order Reference
VA24C1792

Telephone : +1 604 263 4188

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

SAMPLE CONDITION AS RECEIVED (lab use only)

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

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C				
				8				

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
[redacted]	26 Aug 2024	Time: 1:34	Received by:	Date:	Time:	Received by: CW	Date: Aug 26	Time: 1125

R [redacted] TIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY SEPT 2017 FRONT

F [redacted] 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

2024-8-26-Chycoski-04527

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	08/26/2024	**Location:**	BC Rail Site
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	
Temperature(c):	Low 11 High 17	**Permit:**	AE 111824
Weather Conditions:	Heavy Rain	**Ground Conditions:**	Wet

Observations

Time: 09:41:00 **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?	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

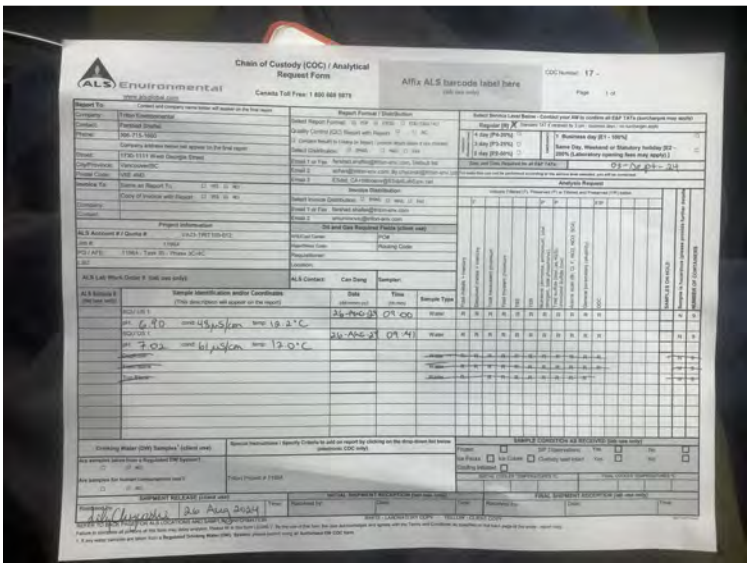

Photo: 4

Location: SQU US 1

Description: Lab COC

2024-8-26-Chycoski-04527

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

2024-8-26-Chycoski-C35D3

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	08/26/2024	**Location:**	BC Rail Site
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.726866 -123.163912
Temperature(c):	Low 11 High 17	**Permit:**	AE 111824
Weather Conditions:	Light Rain	**Ground Conditions:**	Wet

Observations

Time: 09:00:00 **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?	Yes	**Photo of COC with Lab Signature?**	Yes

Describe Logger Maintenance

Cleaned logger and changed leaking battery

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

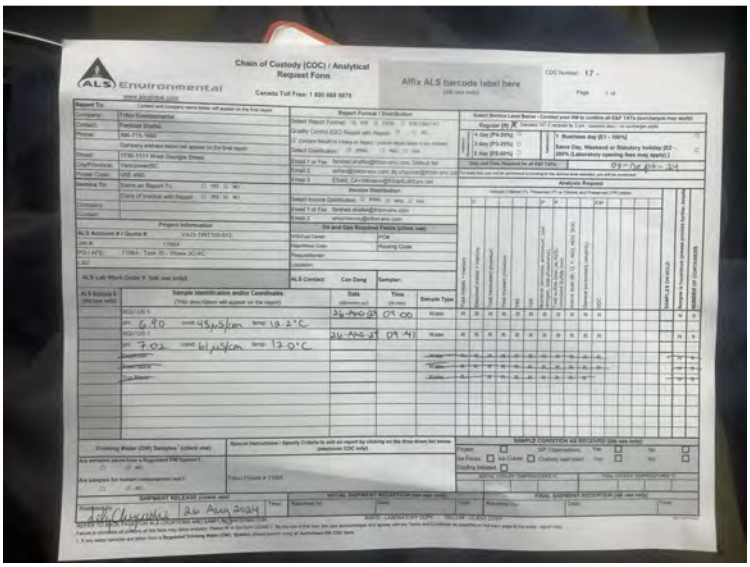

Photo: 4

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	Sample ID	Reviewed and signed off by:			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					VA24C2623-001					
	Date Sampled					30-Aug-2024					
	Time Sampled					13:30					
Analyte	Units	FAL-ST [1,2]	FAL-LT [1,2]	MAL-ST [1]	MAL-LT [1,2]	Water		Guideline notes			
						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	7.66		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	-	21.1 (5 weeks average 19.2)		Guideline is species-dependent. Short-term daily temperature is 15°C for streams with Bull Trout &/or Dolly Varden, Max +/- 1°C from the optimum range as shown in Table 43B of the BCWG for aquatic life for each life history phase of the most sensitive salmoind species present, Mean Weekly Max Temperature guidline 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	-	-	-	-	216					
Turbidity (field)	NTU	Varies with background, see note US1 (background) guideline = 12.8	Varies with background, see note US1 (background) guideline = 4.23 5-week discrete sampling average = 6.1 (EOP)	Varies with background, see note US1 (background) guideline = 12.8	Varies with background, see note US1 (background) guideline = 4.23 5-week discrete sampling average = 6.1 (EOP)	2.2	**Turbidity exceeds the long term BC WQG for FAL and MAL**; however, this is only based on a discrete weekly sampling and does not confirm whether it remained above the guideline for more than 24 h continousaly .	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	-	-	-	-	50.2					
Total Dissolved Solids	mg/L	-	-	-	-	86					
Total Suspended Solids	mg/L	Varies with background, see note US1 (background) guideline = 28	Varies with background, see note US1 (background) guideline = 8.34 5-week discrete sampling average = 5.76 (EOP)	Varies with background, see note US1 (background) guideline = 28	Varies with background, see note US1 (background) guideline = 8.34 5-week discrete sampling average = 5.76 (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	-	-	-	-	1.81			Long-term (30-day) median within 20% of background median [3]		
Total Phenols	mg/L	0.05	-	-	-	0.0014		Interim guideline		Interim guideline	
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	66.2	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 = 19.7	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	0.0064		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	> 110% of background	< 90% of background	2.68				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 US1 (background) guideline = 1.446	-	1.5	-	0.344		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	< 0.0050					
Nitrite (as N)	mg/L	Varies with chloride. Table 27B, see note. US1 (background) guideline = 0.60	Varies with chloride. Table 27B, see note. US1 (background) guideline = 0.20	-	-	< 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	-	-	-	-	0.102					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.0043			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	-	-	5.44			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 = 0.184 5-week discrete sampling averages = EOP (0.063), US (0.128), DS (0.081)	-	-	0.0497			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	-	-	0.00075					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.00161					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.00763			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	0.028					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	< 0.0000050					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	18.7					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.000047					
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	-	-	-	0.029					
Lead (Pb)-Total	mg/L	Varies with hardness. See Note. US1 (background) guideline = 0.12	Varies with hardness. See Note. US1 (background) guideline = 0.004 5-week discrete sampling averages = EOP (0.0003), US (0.0007), DS (0.0001)	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	-	-	-	-	0.013					
Magnesium (Mg)-Total	mg/L	-	-	-	-	0.849					
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 (0.013), US (0.008), DS (0.013)	-	-	0.017		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	-	-	0.0173					
Nickel (Ni)-Total	mg/L	-	Varies with hardness US1 (background) guideline = 0.025 5-week discrete sampling averages = EOP (0.001), US (0.0007), DS (0.001)	-	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	-	-	-	-	4.79					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00884					
Selenium (Se)-Total	mg/L	-	0.002	-	0.002	0.00007			Guideline for freshwater aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidelens 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 guidelens 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	-	-	-	-	5.59					
Silver (Ag)-Total	mg/L	Varies with hardness, see note US1 (background) guideline = 0.003	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	-	-	-	-	5.88					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0527					
Sulfur (S)-Total	mg/L	-	-	-	-	1.62					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.0008	-	-	0.00002			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	-	-	-	-	0.00117					
Tungsten (W)-Total	mg/L	-	-	-	-	0.00099					
Uranium (U)-Total	mg/L	-	0.0085	-	-	0.00583			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	-	-	-	-	0.0226					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	0.00074					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00155					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00709					
Beryllium (Be)-Dissolved	mg/L	-	-	-	-	< 0.000100					
Bismuth (Bi)-Dissolved	mg/L	-	-	-	-	< 0.000050					
Boron (B)-Dissolved	mg/L	-	-	-	-	0.026					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note US1 (background) guideline = 0.000783	Varies with hardness, see note US1 (background) guideline = 0.000095	-	-	< 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 guideline is 0.00004. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.		
Calcium (Ca)-Dissolved	mg/L	-	Categorical, see note	-	-	18.9	The WLNG EOP 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	-	-	-	-	0.000044					
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 = 0.0139	Guideline varies with other parameters, see note US1 (background) guideline = 0.0011 5-week discrete sampling averages = EOP (0.0005), 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	-	-	-	-	0.0132					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.854					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.0153					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.0175					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	5					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00894					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	0.000086					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	5.38					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	5.68					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0572					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	1.63					
Tellurium (Te)-Dissolved	mg/L	-	-	-	-	< 0.00020					
Thallium (Tl)-Dissolved	mg/L	-	-	-	-	0.000027					
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	-	-	-	-	0.00088					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.00558					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	< 0.00050					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness US1 (background) guideline = 0.086	Varies with pH, DOC, hardness US1 (background) guideline = 0.0062 5-week discrete sampling average = EOP (0.0047), US1 (0.0016), DS1 (0.0022)	-	-	0.0018		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	-	-	1.27			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	0.054					Guideline is for total methylated napthalene and is presented here for reference.
Methylnaphthalene, 2-	µg/L	-	-	-	1	< 0.106					Guideline is for total methylated napthalene and is presented here for reference.
Naphthalene	µg/L	-	1	-	1	< 0.121					
Phenanthrene	µg/L	-	0.3	-	-	< 0.020					
Pyrene	µg/L	0.02	-	-	-	< 0.010					
Quinoline	µg/L	-	3.4	-	-	< 0.078		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	FAL-ST [1,2]	FAL-LT [1,2]	MAL-ST [1]	MAL-LT [1,2]	Values: WLNG EOP	Values: WLNG US 27-Aug-2024
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations				7.66	7.01
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations				21.1 (5 weeks average 19.2)	14.6
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations				2.20	4.84
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				50.2	132
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations				1.81	10.1
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations				66.2	13.3
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations				2.68	13.4
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

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CERTIFICATE OF ANALYSIS

Work Order	: **VA24C2623**	Page	: 1 of 10
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 30-Aug-2024 17:10
PO	: 11964-Task 30-Phase 3C-4C	Date Analysis Commenced	: 31-Aug-2024
C-O-C number	: ----	Issue Date	: 06-Sep-2024 16:21
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
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
		Inorganics, Edmonton, Alberta
		Metals, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Inorganics, Waterloo, Ontario
		Metals, Waterloo, Ontario
		Metals, Burnaby, British Columbia
		Organics, 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
µg/L	micrograms per litre
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.

Qualifiers

Qualifier	*Description*
DLCI	*Detection Limit Raised: Chromatographic interference due to co-elution.*
DLQ	*Detection Limit raised due to co-eluting interference. Mass Spectrometry qualifier ion ratio did not meet acceptance criteria.*

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	Duplicate	----	----	----
					Client sampling date / time	30-Aug-2024 13:30	30-Aug-2024 13:30	----	----	----
						VA24C2623-001	VA24C2623-002	--------	--------	--------
						Result	Result	----	----	----
Field Tests										
Conductivity, field	----	EF001/VA	0.10	µS/cm		216.00	----	----	----	----
pH, field	----	EF001/VA	0.10	pH units		7.66	----	----	----	----
Temperature, field	----	EF001/VA	0.10	°C		21.1	----	----	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		50.7	51.5	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		50.2	53.2	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		86	82	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		<3.0	<3.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		66.2	66.1	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.0064	0.0069	----	----	----
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		2.68	2.66	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		0.344	0.340	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		<0.0050	<0.0050	----	----	----
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		0.102	0.104	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.0043	0.0044	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		5.44	5.42	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		1.81	1.56	----	----	----
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	----	----	----	----
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		0.0497	0.0497	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		0.00075	0.00077	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	Duplicate	----	----	----
					Client sampling date / time	30-Aug-2024 13:30	30-Aug-2024 13:30	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C2623-001	VA24C2623-002	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00161	0.00163	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00763	0.00779	----	----	----
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		0.028	0.028	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		18.7	19.9	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000047	0.000047	----	----	----
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		<0.00050	<0.00050	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.029	0.030	----	----	----
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		0.0130	0.0131	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		0.849	0.866	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.0166	0.0167	----	----	----
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		0.0173	0.0176	----	----	----
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		4.79	4.78	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00884	0.00874	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		0.000073	0.000076	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		5.59	5.42	----	----	----
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		5.88	5.98	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0527	0.0557	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		1.62	1.33	----	----	----
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		0.000024	0.000023	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	Duplicate	----	----	----
					Client sampling date / time	30-Aug-2024 13:30	30-Aug-2024 13:30	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C2623-001	VA24C2623-002	--------	--------	--------
						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		0.00117	0.00112	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		0.00099	0.00098	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.00583	0.00590	----	----	----
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		0.0226	0.0220	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		0.00074	0.00074	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00155	0.00157	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00709	0.00676	----	----	----
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		0.026	0.027	----	----	----
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		18.9	19.2	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000044	0.000041	----	----	----
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		<0.00020	<0.00020	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		<0.010	<0.010	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		0.0132	0.0140	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		0.854	0.858	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.0153	0.0152	----	----	----
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		0.0175	0.0174	----	----	----
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 EOP	Duplicate	----	----	----
					Client sampling date / time	30-Aug-2024 13:30	30-Aug-2024 13:30	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C2623-001	VA24C2623-002	--------	--------	--------
						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		5.00	4.97	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00894	0.00866	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		0.000086	0.000107	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		5.38	5.28	----	----	----
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		5.68	5.71	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0572	0.0558	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		1.63	1.68	----	----	----
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		0.000027	0.000027	----	----	----
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		0.00088	0.00088	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.00558	0.00547	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0018	0.0016	----	----	----
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	----	----	----
Aggregate Organics										
Phenols, total (4AAP)	----	E562/EO	0.0010	mg/L		0.0014	0.0010	----	----	----
Volatile Organic Compounds										
Chlorobenzene	108-90-7	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Chloromethane	74-87-3	E611C/VA	5.0	µg/L		<5.0	<5.0	----	----	----
Dichlorobenzene, 1,2-	95-50-1	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	Duplicate	----	----	----
					Client sampling date / time	30-Aug-2024 13:30	30-Aug-2024 13:30	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C2623-001	VA24C2623-002	--------	--------	--------
						Result	Result	----	----	----
Volatile Organic Compounds										
Dichlorobenzene, 1,3-	541-73-1	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Dichlorobenzene, 1,4-	106-46-7	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Dichloropropane, 1,2-	78-87-5	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Dichloropropylene, cis+trans-1,3-	542-75-6	E611C/VA	0.75	µg/L		<0.75	<0.75	----	----	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C/VA	0.20	µg/L		<0.20	<0.20	----	----	----
Trichloroethane, 1,1,2-	79-00-5	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Trichlorofluoromethane	75-69-4	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Volatile Organic Compounds [Drycleaning]										
Carbon tetrachloride	56-23-5	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Chloroethane	75-00-3	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Dichloroethane, 1,1-	75-34-3	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Dichloroethane, 1,2-	107-06-2	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Dichloroethylene, 1,1-	75-35-4	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Dichloroethylene, cis-1,2-	156-59-2	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Dichloroethylene, trans-1,2-	156-60-5	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Dichloromethane	75-09-2	E611C/VA	1.0	µg/L		<1.0	<1.0	----	----	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Tetrachloroethylene	127-18-4	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Trichloroethane, 1,1,1-	71-55-6	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Trichloroethylene	79-01-6	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Vinyl chloride	75-01-4	E611C/VA	0.40	µg/L		<0.40	<0.40	----	----	----
Volatile Organic Compounds [Fuels]										
Benzene	71-43-2	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Ethylbenzene	100-41-4	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C/VA	0.50	µg/L		<0.50	<0.50	----	----	----
Styrene	100-42-5	E611C/VA	0.50	µg/L		1.27	1.61	----	----	----
Toluene	108-88-3	E611C/VA	0.40	µg/L		<0.40	<0.40	----	----	----
Xylene, m+p-	179601-23-1	E611C/VA	0.40	µg/L		<0.40	<0.40	----	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: WLNG EOP	Duplicate	----	----	----
Client sampling date / time					30-Aug-2024 13:30	30-Aug-2024 13:30	----	----	----
					VA24C2623-001	VA24C2623-002	--------	--------	--------
					Result	Result	----	----	----
Volatile Organic Compounds [Fuels]									
Xylene, o-	95-47-6	E611C/VA	0.30	µg/L	<0.30	<0.30	----	----	----
Xylenes, total	1330-20-7	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----
Volatile Organic Compounds [THMs]									
Bromodichloromethane	75-27-4	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----
Bromoform	75-25-2	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----
Chloroform	67-66-3	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----
Dibromochloromethane	124-48-1	E611C/VA	0.50	µg/L	<0.50	<0.50	----	----	----
Hydrocarbons									
EPH (C10-C19)	----	E601A/VA	250	µg/L	<250	<250	----	----	----
EPH (C19-C32)	----	E601A/VA	250	µg/L	<250	<250	----	----	----
VHw (C6-C10)	----	E581.VH+F1/VA	100	µg/L	<100	<100	----	----	----
HEPHw	----	EC600A/VA	250	µg/L	<250	<250	----	----	----
LEPHw	----	EC600A/VA	250	µg/L	<250	<250	----	----	----
VPHw	----	EC580A/VA	100	µg/L	<100	<100	----	----	----
Hydrocarbons Surrogates									
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%	89.1	88.5	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%	117	108	----	----	----
Volatile Organic Compounds Surrogates									
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%	98.3	105	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611C/VA	1.0	%	99.9	100	----	----	----
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	83-32-9	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----
Acenaphthylene	208-96-8	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----
Acridine	260-94-6	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----
Anthracene	120-12-7	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----
Benz(a)anthracene	56-55-3	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----
Benzo(a)pyrene	50-32-8	E641A/VA	0.0050	µg/L	<0.0050	<0.0050	----	----	----
Benzo(b+j)fluoranthene	n/a	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	Duplicate	----	----	----
					Client sampling date / time	30-Aug-2024 13:30	30-Aug-2024 13:30	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C2623-001	VA24C2623-002	--------	--------	--------
						Result	Result	----	----	----
Polycyclic Aromatic Hydrocarbons										
Benzo(b+j+k)fluoranthene	n/a	E641A/VA	0.015	µg/L		<0.015	<0.015	----	----	----
Benzo(g,h,i)perylene	191-24-2	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Benzo(k)fluoranthene	207-08-9	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Chrysene	218-01-9	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Dibenz(a,h)anthracene	53-70-3	E641A/VA	0.0050	µg/L		<0.0050	<0.0050	----	----	----
Fluoranthene	206-44-0	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Fluorene	86-73-7	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Methylnaphthalene, 1-	90-12-0	E641A/VA	0.010	µg/L		0.054	0.048	----	----	----
Methylnaphthalene, 2-	91-57-6	E641A/VA	0.010	µg/L		<0.106 DLQ	0.061	----	----	----
Naphthalene	91-20-3	E641A/VA	0.050	µg/L		<0.121 DLCI	<0.050	----	----	----
Phenanthrene	85-01-8	E641A/VA	0.020	µg/L		<0.020	<0.020	----	----	----
Pyrene	129-00-0	E641A/VA	0.010	µg/L		<0.010	<0.010	----	----	----
Quinoline	91-22-5	E641A/VA	0.050	µg/L		<0.078 DLCI	<0.050	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A/VA	0.1	%		106	87.8	----	----	----
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%		108	85.8	----	----	----
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%		110	89.4	----	----	----
Glycols										
Diethylene glycol	111-46-6	E680E/VA	5.0	mg/L		<5.0	<5.0	----	----	----
Ethylene glycol	107-21-1	E680E/VA	5.0	mg/L		<5.0	<5.0	----	----	----
Propylene glycol, 1,2-	57-55-6	E680E/VA	5.0	mg/L		<5.0	<5.0	----	----	----
Triethylene glycol	112-27-6	E680E/VA	5.0	mg/L		<5.0	<5.0	----	----	----
Glycols, total (EG+DEG+PG)	----	E680E/VA	10	mg/L		<10	<10	----	----	----
Glycols Surrogates										
Propanediol, 1,3-	504-63-2	E680E/VA	1.0	%		105	105	----	----	----

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	: **VA24C2623**	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	: 30-Aug-2024 17:10
PO	: 11964-Task 30-Phase 3C-4C	Issue Date	: 06-Sep-2024 16:21
C-O-C number	: ----		
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) Duplicate	E562	30-Aug-2024	04-Sep-2024	28 days	5 days	✓	04-Sep-2024	28 days	5 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) WLNG EOP	E562	30-Aug-2024	04-Sep-2024	28 days	5 days	✓	04-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) Duplicate	E298	30-Aug-2024	02-Sep-2024	28 days	3 days	✓	06-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG EOP	E298	30-Aug-2024	02-Sep-2024	28 days	3 days	✓	06-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE Duplicate	E235.Br-L	30-Aug-2024	31-Aug-2024	28 days	1 days	✓	31-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG EOP	E235.Br-L	30-Aug-2024	31-Aug-2024	28 days	1 days	✓	31-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE Duplicate	E235.Cl	30-Aug-2024	31-Aug-2024	28 days	1 days	✓	31-Aug-2024	28 days	1 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG EOP	E235.Cl	30-Aug-2024	31-Aug-2024	28 days	1 days	✓	31-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE Duplicate	E235.F	30-Aug-2024	31-Aug-2024	28 days	1 days	✓	31-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG EOP	E235.F	30-Aug-2024	31-Aug-2024	28 days	1 days	✓	31-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE Duplicate	E235.NO3-L	30-Aug-2024	31-Aug-2024	3 days	1 days	✓	31-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG EOP	E235.NO3-L	30-Aug-2024	31-Aug-2024	3 days	1 days	✓	31-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE Duplicate	E235.NO2-L	30-Aug-2024	31-Aug-2024	3 days	1 days	✓	31-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG EOP	E235.NO2-L	30-Aug-2024	31-Aug-2024	3 days	1 days	✓	31-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE Duplicate	E235.SO4	30-Aug-2024	31-Aug-2024	28 days	1 days	✓	31-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG EOP	E235.SO4	30-Aug-2024	31-Aug-2024	28 days	1 days	✓	31-Aug-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 : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) Duplicate	E366	30-Aug-2024	02-Sep-2024	28 days	3 days	✓	05-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG EOP	E366	30-Aug-2024	02-Sep-2024	28 days	3 days	✓	05-Sep-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) Duplicate	E372-U	30-Aug-2024	02-Sep-2024	28 days	3 days	✓	04-Sep-2024	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) WLNG EOP	E372-U	30-Aug-2024	02-Sep-2024	28 days	3 days	✓	04-Sep-2024	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved) Duplicate	E509	30-Aug-2024	06-Sep-2024	28 days	7 days	✓	06-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved) WLNG EOP	E509	30-Aug-2024	06-Sep-2024	28 days	7 days	✓	06-Sep-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) Duplicate	E421	30-Aug-2024	04-Sep-2024	180 days	5 days	✓	06-Sep-2024	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) WLNG EOP	E421	30-Aug-2024	04-Sep-2024	180 days	5 days	✓	06-Sep-2024	180 days	7 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	EF001	30-Aug-2024	----	----	----		04-Sep-2024	----	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
Glycols : Glycols (4 analytes) by GC-FID										
Glass vial Duplicate	E680E	30-Aug-2024	03-Sep-2024	7 days	4 days	✓	03-Sep-2024	40 days	0 days	✓
Glycols : Glycols (4 analytes) by GC-FID										
Glass vial WLNG EOP	E680E	30-Aug-2024	03-Sep-2024	7 days	4 days	✓	03-Sep-2024	40 days	0 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) Duplicate	E601A	30-Aug-2024	05-Sep-2024	14 days	6 days	✓	05-Sep-2024	40 days	0 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) WLNG EOP	E601A	30-Aug-2024	05-Sep-2024	14 days	6 days	✓	05-Sep-2024	40 days	0 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate) Duplicate	E581.VH+F1	30-Aug-2024	05-Sep-2024	14 days	6 days	✓	05-Sep-2024	14 days	6 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate) WLNG EOP	E581.VH+F1	30-Aug-2024	05-Sep-2024	14 days	6 days	✓	05-Sep-2024	14 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) Duplicate	E358-L	30-Aug-2024	02-Sep-2024	28 days	3 days	✓	03-Sep-2024	28 days	4 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) WLNG EOP	E358-L	30-Aug-2024	02-Sep-2024	28 days	3 days	✓	03-Sep-2024	28 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE Duplicate	E290	30-Aug-2024	31-Aug-2024	14 days	1 days	✓	01-Sep-2024	14 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
Physical Tests : Alkalinity Species by Titration										
HDPE WLNG EOP	E290	30-Aug-2024	31-Aug-2024	14 days	1 days	✓	01-Sep-2024	14 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE Duplicate	E162	30-Aug-2024	----	----	----		04-Sep-2024	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE WLNG EOP	E162	30-Aug-2024	----	----	----		04-Sep-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE Duplicate	E160	30-Aug-2024	----	----	----		04-Sep-2024	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WLNG EOP	E160	30-Aug-2024	----	----	----		04-Sep-2024	7 days	5 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) Duplicate	E641A	30-Aug-2024	05-Sep-2024	14 days	6 days	✓	05-Sep-2024	40 days	0 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) WLNG EOP	E641A	30-Aug-2024	05-Sep-2024	14 days	6 days	✓	05-Sep-2024	40 days	0 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide) Duplicate	E532	30-Aug-2024	----	----	----		04-Sep-2024	28 days	5 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide) WLNG EOP	E532	30-Aug-2024	----	----	----		04-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
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
Duplicate	E508	30-Aug-2024	06-Sep-2024	28 days	7 days	✓	06-Sep-2024	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
WLNG EOP	E508	30-Aug-2024	06-Sep-2024	28 days	7 days	✓	06-Sep-2024	28 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
Duplicate	E420	30-Aug-2024	05-Sep-2024	180 days	6 days	✓	06-Sep-2024	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
WLNG EOP	E420	30-Aug-2024	05-Sep-2024	180 days	6 days	✓	06-Sep-2024	180 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
Duplicate	E395	30-Aug-2024	----	----	----		05-Sep-2024	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG EOP	E395	30-Aug-2024	----	----	----		05-Sep-2024	7 days	6 days	✓
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
Duplicate	E611C	30-Aug-2024	05-Sep-2024	14 days	6 days	✓	05-Sep-2024	14 days	6 days	✓
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
WLNG EOP	E611C	30-Aug-2024	05-Sep-2024	14 days	6 days	✓	05-Sep-2024	14 days	6 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	1628204	1	10	10.0	5.0	✓
Ammonia by Fluorescence	E298	1629086	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1628207	1	16	6.2	5.0	✓
Chloride in Water by IC	E235.Cl	1628206	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1636161	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1631913	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1629084	1	14	7.1	5.0	✓
Fluoride in Water by IC	E235.F	1628205	1	16	6.2	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1629894	1	5	20.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1628208	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1628209	1	20	5.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1632038	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1628210	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	1633552	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1632570	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1636737	1	15	6.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1632006	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1629085	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1629088	1	13	7.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1635070	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1633550	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1633718	1	19	5.2	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1633720	1	6	16.6	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1628204	1	10	10.0	5.0	✓
Ammonia by Fluorescence	E298	1629086	1	17	5.8	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1633576	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1628207	1	16	6.2	5.0	✓
Chloride in Water by IC	E235.Cl	1628206	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1636161	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1631913	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1629084	1	14	7.1	5.0	✓
Fluoride in Water by IC	E235.F	1628205	1	16	6.2	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1629894	1	5	20.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1628208	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1628209	1	20	5.0	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
PAHs in Water by Hexane LVI GC-MS	E641A	1633577	1	8	12.5	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1632038	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1628210	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	1633552	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1632570	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1636737	1	15	6.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1632006	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1629085	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1629088	1	13	7.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1635070	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1633550	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1633718	1	19	5.2	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1633720	1	6	16.6	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1628204	1	10	10.0	5.0	✓
Ammonia by Fluorescence	E298	1629086	1	17	5.8	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1633576	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1628207	1	16	6.2	5.0	✓
Chloride in Water by IC	E235.Cl	1628206	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1636161	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1631913	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1629084	1	14	7.1	5.0	✓
Fluoride in Water by IC	E235.F	1628205	1	16	6.2	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1629894	1	5	20.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1628208	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1628209	1	20	5.0	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1633577	1	8	12.5	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1632038	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1628210	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	1633552	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1632570	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1636737	1	15	6.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1632006	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1629085	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1629088	1	13	7.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1635070	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1633550	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1633718	1	19	5.2	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1633720	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	1629086	1	17	5.8	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1628207	1	16	6.2	5.0	✓
Chloride in Water by IC	E235.Cl	1628206	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1636161	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1631913	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1629084	1	14	7.1	5.0	✓
Fluoride in Water by IC	E235.F	1628205	1	16	6.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1628208	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1628209	1	20	5.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1632038	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1628210	1	16	6.2	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1632570	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1636737	1	15	6.6	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1632006	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1629085	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1629088	1	13	7.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1635070	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1633718	1	19	5.2	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1633720	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 ($K_3Fe(CN)_6$) and 4-amino-antipyrine (4-AAP) to form a red complex which is measured colorimetrically.
VH and F1 by Headspace GC-FID	E581.VH+F1 ALS Environmental - Vancouver	Water	BC MOE Lab Manual / CCME PHC in Soil - Tier 1 (mod)	Volatile Hydrocarbons (VH and F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
BC PHCs - EPH by GC-FID	E601A ALS Environmental - Vancouver	Water	BC MOE Lab Manual	Sample extracts are analyzed by GC-FID for BC hydrocarbon fractions.
VOCs (BC List) by Headspace GC-MS	E611C ALS Environmental - Vancouver	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Total Xylenes is the sum of m,p-Xylene & o-Xylene. Total BTEX is the sum of Benzene, Toluene, Ethylbenzene, & Total Xylenes. Total BTEX+Styrene is the sum of Total BTEX & Styrene. Total Trihalomethanes [THMs] is the sum of Bromodichloromethane, Bromoform, Chloroform, & Dibromochloromethane.
PAHs in Water by Hexane LVI GC-MS	E641A ALS Environmental - Vancouver	Water	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by large volume injection (LVI) GC-MS.
Glycols (4 analytes) by GC-FID	E680E ALS Environmental - Vancouver	Water	EPA 8015D (mod)	Derivatized glycols are analyzed by GC-FID.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as $CaCO_3$), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in $CaCO_3$ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Un-ionized Total Hydrogen Sulfide (calculated)	EC395 ALS Environmental - Vancouver	Water	APHA 4500 -S H	Un-ionized sulfide is calculated using results from total sulfide analysis, pH, temperature, and ionic strength of the sample. Calculation of un-ionized sulfide using total sulfide concentrations may be biased high due to particulate forms of sulfide measured during total sulfide testing.
Total Trivalent Chromium (Cr III) by Calculation	EC535 ALS Environmental - Waterloo	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
VPH: VH-BTEX-Styrene	EC580A ALS Environmental - Vancouver	Water	BC MOE Lab Manual (VPH in Water and Solids) (mod)	Volatile Petroleum Hydrocarbons (VPH) is calculated as follows: VPHw = Volatile Hydrocarbons (VH C6-C10) minus benzene, toluene, ethylbenzene, xylenes (BTEX) and styrene.
LEPH and HEPH: EPH-PAH	EC600A ALS Environmental - Vancouver	Water	BC MOE Lab Manual (LEPH and HEPH)	Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are calculated as follows: LEPH = Extractable Petroleum Hydrocarbons (EPH10-19) minus Acenaphthene, Acridine, Anthracene, Fluorene, Naphthalene and Phenanthrene; HEPH = Extractable Petroleum Hydrocarbons (EPH19-32) minus Benz(a)anthracene, Benzo(a)pyrene, Fluoranthene, and Pyrene.
Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3 or Chloramine measurements provided by client and recorded on ALS report may affect the validity of results.

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

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

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **VA24C2623**	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	: 30-Aug-2024 17:10
PO	: 11964-Task 30-Phase 3C-4C	Date Analysis Commenced	: 31-Aug-2024
C-O-C number	: ----	Issue Date	: 06-Sep-2024 16:21
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*
		Edmonton Inorganics, Edmonton, Alberta
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Waterloo Inorganics, Waterloo, Ontario
		Waterloo Metals, Waterloo, Ontario
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Organics, 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: 1628204)											
VA24C2305-003	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	41.1	41.4	0.727%	20%	----
Physical Tests (QC Lot: 1633550)											
FJ2402607-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	13.8	13.6	0.2	Diff <2x LOR	----
Physical Tests (QC Lot: 1633552)											
FJ2402607-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	1180	1080	9.38%	20%	----
Anions and Nutrients (QC Lot: 1628205)											
VA24C2305-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.104	0.104	0.0009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1628206)											
VA24C2305-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1628207)											
VA24C2305-001	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: 1628208)											
VA24C2305-001	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: 1628209)											
VA24C2305-001	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: 1628210)											
VA24C2305-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	8.30	8.28	0.303%	20%	----
Anions and Nutrients (QC Lot: 1629085)											
VA24C2470-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.283	0.294	0.011	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1629086)											
KS2403279-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0144	0.0149	0.0005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1629088)											
KS2403279-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0157	0.0181	0.0024	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1629084)											
KS2403279-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	14.1	14.9	5.60%	20%	----
Total Sulfides (QC Lot: 1635070)											
CG2412446-014	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0022	0.0024	0.0002	Diff <2x LOR	----
Total Metals (QC Lot: 1632006)											
YL2401346-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0150	mg/L	<0.0150	<0.0150	0	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00050	mg/L	0.0166	0.0165	0.606%	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: 1632006) - continued											
YL2401346-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00050	mg/L	1.32	1.31	1.04%	20%	----
		Barium, total	7440-39-3	E420	0.00050	mg/L	0.0798	0.0821	2.82%	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	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.050	mg/L	0.312	0.328	0.016	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000250	mg/L	<0.0000250	<0.0000250	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.250	mg/L	840	871	3.64%	20%	----
		Cesium, total	7440-46-2	E420	0.000050	mg/L	0.000136	0.000138	0.000003	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00250	mg/L	<0.00250	<0.00250	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00050	mg/L	0.00088	0.00092	0.00004	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00250	mg/L	0.00272	0.00268	0.00004	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.050	mg/L	0.086	0.086	0.0002	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0050	mg/L	0.0445	0.0463	0.0018	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0250	mg/L	146	145	0.974%	20%	----
		Manganese, total	7439-96-5	E420	0.00050	mg/L	0.00559	0.00554	1.02%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000250	mg/L	0.00172	0.00175	0.000033	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420	0.00250	mg/L	0.0245	0.0241	0.00039	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.250	mg/L	<0.250	<0.250	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.250	mg/L	15.5	15.4	0.599%	20%	----
		Rubidium, total	7440-17-7	E420	0.00100	mg/L	0.0185	0.0176	5.00%	20%	----
		Selenium, total	7782-49-2	E420	0.000250	mg/L	0.000437	0.000471	0.000034	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.50	mg/L	5.60	5.54	1.08%	20%	----
		Silver, total	7440-22-4	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.250	mg/L	480	483	0.668%	20%	----
		Strontium, total	7440-24-6	E420	0.00100	mg/L	11.3	11.4	1.36%	20%	----
		Sulfur, total	7704-34-9	E420	2.50	mg/L	374	378	0.974%	20%	----
		Thallium, total	7440-28-0	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00050	mg/L	0.00066	0.00059	0.00007	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00150	mg/L	<0.00150	<0.00150	0	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00050	mg/L	0.00123	0.00124	0.00001	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000050	mg/L	0.000541	0.000547	1.12%	20%	----
		Vanadium, total	7440-62-2	E420	0.00250	mg/L	<0.00250	<0.00250	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: 1632006) - continued											
YL2401346-001	Anonymous	Zinc, total	7440-66-6	E420	0.0150	mg/L	<0.0150	<0.0150	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
Total Metals (QC Lot: 1636737)											
VA24C2599-006	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1631913)											
VA24C2476-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	0.0192	0.0206	0.0014	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00020	mg/L	0.00076	0.00077	0.000007	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00459	0.00467	1.82%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0421	0.0413	2.03%	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	0.028	0.028	0.0002	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.000205	mg/L	<0.000205	<0.000205	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.100	mg/L	530	518	2.35%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000020	mg/L	0.00177	0.00174	1.30%	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	<0.00020	<0.00020	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00040	mg/L	0.00082	0.00080	0.00002	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.0283	0.0273	3.58%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	15.9	15.8	0.714%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00020	mg/L	0.0216	0.0218	0.480%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	1.30	1.27	1.97%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00100	mg/L	<0.00100	<0.00100	0	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	64.9	65.5	0.950%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00040	mg/L	0.0290	0.0290	0.153%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000100	mg/L	0.000680	0.000736	0.000056	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.100	mg/L	6.96	6.96	0.0141%	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	189	189	0.0686%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00040	mg/L	10.6	10.3	2.72%	20%	----
		Sulfur, dissolved	7704-34-9	E421	1.00	mg/L	645	652	1.09%	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: 1631913) - continued											
VA24C2476-001	Anonymous	Tellurium, dissolved	13494-80-9	E421	0.00040	mg/L	0.00069	0.00050	0.00020	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00120	mg/L	<0.00120	<0.00120	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00020	mg/L	0.00751	0.00765	1.86%	20%	----
		Uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00259	0.00262	1.37%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	0.00406	0.00410	0.00004	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0020	mg/L	0.0059	0.0050	0.0008	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: 1636161)											
VA24C2483-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1632570)											
KS2403545-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 1632038)											
VA24C2599-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1633720)											
VA24C2427-001	Anonymous	Benzene	71-43-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611C	0.50	µg/L	0.80	0.81	0.009	Diff <2x LOR	----
		Chloromethane	74-87-3	E611C	5.0	µg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----

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: 1633720) - continued											
VA24C2427-001	Anonymous	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: 1633718)											
VA24C2156-001	Anonymous	VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----
Glycols (QC Lot: 1629894)											
VA24C2397-001	Anonymous	Diethylene glycol	111-46-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Ethylene glycol	107-21-1	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Propylene glycol, 1,2-	57-55-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Triethylene glycol	112-27-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----

Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1628204)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	1.2	----
Physical Tests (QCLot: 1633550)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1633552)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1628205)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1628206)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1628207)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1628208)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1628209)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1628210)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1629085)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1629086)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1629088)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1629084)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1635070)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1632006)						
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: 1632006) - 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: 1636737)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1631913)						
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: 1631913) - 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: 1636161)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1632570)						
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	<0.00050	----
Aggregate Organics (QCLot: 1632038)						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
Volatile Organic Compounds (QCLot: 1633720)						
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: 1633720) - 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: 1633576)						
EPH (C10-C19)	----	E601A	250	µg/L	<250	----
EPH (C19-C32)	----	E601A	250	µg/L	<250	----
Hydrocarbons (QCLot: 1633718)						
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1633577)						
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: 1633577) - 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: 1629894)						
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: 1628204)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	105	85.0	115	----
Physical Tests (QCLot: 1633550)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	107	85.0	115	----
Physical Tests (QCLot: 1633552)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1628205)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.3	90.0	110	----
Anions and Nutrients (QCLot: 1628206)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 1628207)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.2	85.0	115	----
Anions and Nutrients (QCLot: 1628208)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 1628209)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.6	90.0	110	----
Anions and Nutrients (QCLot: 1628210)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 1629085)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1629086)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	95.9	85.0	115	----
Anions and Nutrients (QCLot: 1629088)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	90.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1629084)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	110	80.0	120	----
Total Sulfides (QCLot: 1635070)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	106	80.0	120	----
Total Metals (QCLot: 1632006)									

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: 1632006) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	103	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	104	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	103	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	113	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	98.3	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	98.3	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	101	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	100	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	97.9	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	98.8	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	96.4	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	109	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	104	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	101	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	99.9	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	98.4	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	104	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	100	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	104	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	111	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	96.6	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	104	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	92.7	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	99.6	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	109	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	104	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	109	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	108	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1632006) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	96.3	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Total Metals (QCLot: 1636737)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	97.8	80.0	120	----
Dissolved Metals (QCLot: 1631913)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	97.0	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	105	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	92.4	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	103	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	90.1	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	99.8	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	93.3	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	99.5	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	96.9	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	94.8	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	95.7	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	98.4	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	100	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	97.5	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	96.9	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	97.6	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	98.1	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.0	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	103	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	103	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	93.3	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	96.6	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	106	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	98.8	80.0	120	----

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
Dissolved Metals (QCLot: 1631913) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	105	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	99.5	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	91.6	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	96.7	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	98.9	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	104	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	104	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	97.2	80.0	120	----
Speciated Metals (QCLot: 1632570)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	99.0	80.0	120	----
Aggregate Organics (QCLot: 1632038)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	107	85.0	115	----
Volatile Organic Compounds (QCLot: 1633720)									
Benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	104	70.0	130	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	100 µg/L	99.9	70.0	130	----
Bromoform	75-25-2	E611C	0.5	µg/L	100 µg/L	105	70.0	130	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	100 µg/L	108	70.0	130	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	100 µg/L	106	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	103	70.0	130	----
Chloromethane	74-87-3	E611C	5	µg/L	100 µg/L	114	60.0	140	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	100 µg/L	104	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	105	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	100 µg/L	111	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	100 µg/L	112	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	100 µg/L	105	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	98.2	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	100	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	111	70.0	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
Volatile Organic Compounds (QCLot: 1633720) - continued									
Dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	104	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	103	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	99.9	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	100 µg/L	109	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	100 µg/L	105	70.0	130	----
Styrene	100-42-5	E611C	0.5	µg/L	100 µg/L	110	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	100 µg/L	104	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	92.0	70.0	130	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	112	70.0	130	----
Toluene	108-88-3	E611C	0.4	µg/L	100 µg/L	107	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	100 µg/L	108	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	97.5	70.0	130	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	106	70.0	130	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	100 µg/L	128	60.0	140	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	100 µg/L	123	60.0	140	----
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	200 µg/L	111	70.0	130	----
Xylene, o-	95-47-6	E611C	0.3	µg/L	100 µg/L	107	70.0	130	----
Hydrocarbons (QCLot: 1633576)									
EPH (C10-C19)	----	E601A	250	µg/L	6490 µg/L	112	70.0	130	----
EPH (C19-C32)	----	E601A	250	µg/L	3360 µg/L	118	70.0	130	----
Hydrocarbons (QCLot: 1633718)									
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	94.1	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1633577)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.5 µg/L	106	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.5 µg/L	116	60.0	130	----
Acridine	260-94-6	E641A	0.01	µg/L	0.5 µg/L	94.4	60.0	130	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.5 µg/L	123	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.5 µg/L	115	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.5 µg/L	110	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.5 µg/L	117	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.5 µg/L	103	60.0	130	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.5 µg/L	106	60.0	130	----
Chrysene	218-01-9	E641A	0.01	µg/L	0.5 µg/L	116	60.0	130	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1633577) - continued									
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.5 µg/L	115	60.0	130	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.5 µg/L	105	60.0	130	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.5 µg/L	108	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.5 µg/L	109	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.5 µg/L	99.6	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.5 µg/L	109	60.0	130	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.5 µg/L	102	50.0	130	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.5 µg/L	117	60.0	130	----
Pyrene	129-00-0	E641A	0.01	µg/L	0.5 µg/L	106	60.0	130	----
Quinoline	91-22-5	E641A	0.05	µg/L	0.5 µg/L	114	60.0	130	----
Glycols (QCLot: 1629894)									
Diethylene glycol	111-46-6	E680E	5	mg/L	25 mg/L	101	70.0	130	----
Ethylene glycol	107-21-1	E680E	5	mg/L	25 mg/L	101	70.0	130	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	25 mg/L	101	70.0	130	----
Triethylene glycol	112-27-6	E680E	5	mg/L	25 mg/L	99.8	70.0	130	----

Matrix Spike (MS) Report

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

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1628205)										
VA24C2305-002	Anonymous	Fluoride	16984-48-8	E235.F	1.01 mg/L	1 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1628206)										
VA24C2305-002	Anonymous	Chloride	16887-00-6	E235.Cl	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1628207)										
VA24C2305-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.502 mg/L	0.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1628208)										
VA24C2305-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.52 mg/L	2.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1628209)										
VA24C2305-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.498 mg/L	0.5 mg/L	99.6	75.0	125	----
Anions and Nutrients (QCLot: 1628210)										
VA24C2305-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	99.6 mg/L	100 mg/L	99.6	75.0	125	----
Anions and Nutrients (QCLot: 1629085)										
VA24C2470-002	Anonymous	Nitrogen, total	7727-37-9	E366	0.389 mg/L	0.4 mg/L	97.3	70.0	130	----
Anions and Nutrients (QCLot: 1629086)										
KS2403279-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1629088)										
KS2403279-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1629084)										
KS2403279-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1635070)										
CG2412446-015	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.242 mg/L	0.2 mg/L	121	75.0	125	----
Total Metals (QCLot: 1632006)										
YL2401346-002	Anonymous	Aluminum, total	7429-90-5	E420	0.973 mg/L	1 mg/L	97.3	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0984 mg/L	0.1 mg/L	98.4	70.0	130	----
		Arsenic, total	7440-38-2	E420	ND mg/L	----	ND	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.191 mg/L	0.2 mg/L	95.4	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0464 mg/L	0.05 mg/L	92.9	70.0	130	----
		Boron, total	7440-42-8	E420	ND mg/L	----	ND	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.0188 mg/L	0.02 mg/L	94.3	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0496 mg/L	0.05 mg/L	99.2	70.0	130	----
		Chromium, total	7440-47-3	E420	0.188 mg/L	0.2 mg/L	94.0	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1632006) - continued										
YL2401346-002	Anonymous	Cobalt, total	7440-48-4	E420	0.0912 mg/L	0.1 mg/L	91.2	70.0	130	----
		Copper, total	7440-50-8	E420	0.0881 mg/L	0.1 mg/L	88.1	70.0	130	----
		Iron, total	7439-89-6	E420	9.24 mg/L	10 mg/L	92.4	70.0	130	----
		Lead, total	7439-92-1	E420	0.0966 mg/L	0.1 mg/L	96.6	70.0	130	----
		Lithium, total	7439-93-2	E420	0.480 mg/L	0.5 mg/L	96.0	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0933 mg/L	0.1 mg/L	93.3	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.104 mg/L	0.1 mg/L	104	70.0	130	----
		Nickel, total	7440-02-0	E420	0.180 mg/L	0.2 mg/L	89.9	70.0	130	----
		Phosphorus, total	7723-14-0	E420	54.2 mg/L	50 mg/L	108	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0957 mg/L	0.1 mg/L	95.7	70.0	130	----
		Selenium, total	7782-49-2	E420	0.192 mg/L	0.2 mg/L	95.8	70.0	130	----
		Silicon, total	7440-21-3	E420	48.4 mg/L	50 mg/L	96.9	70.0	130	----
		Silver, total	7440-22-4	E420	0.0198 mg/L	0.02 mg/L	99.0	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	----	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	----	ND	70.0	130	----
		Thallium, total	7440-28-0	E420	0.0188 mg/L	0.02 mg/L	94.3	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0754 mg/L	0.1 mg/L	75.4	70.0	130	----
		Tin, total	7440-31-5	E420	0.0981 mg/L	0.1 mg/L	98.1	70.0	130	----
		Titanium, total	7440-32-6	E420	0.198 mg/L	0.2 mg/L	99.1	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Uranium, total	7440-61-1	E420	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.495 mg/L	0.5 mg/L	99.1	70.0	130	----
		Zinc, total	7440-66-6	E420	1.82 mg/L	2 mg/L	91.0	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.201 mg/L	0.2 mg/L	101	70.0	130	----
Total Metals (QCLot: 1636737)										
VA24C2599-007	Anonymous	Mercury, total	7439-97-6	E508	0.0000948 mg/L	0 mg/L	94.8	70.0	130	----
Dissolved Metals (QCLot: 1631913)										
VA24C2483-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.181 mg/L	0.2 mg/L	90.4	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0193 mg/L	0.02 mg/L	96.5	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0207 mg/L	0.02 mg/L	104	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0371 mg/L	0.04 mg/L	92.7	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00955 mg/L	0.01 mg/L	95.5	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.088 mg/L	0.1 mg/L	88.1	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00395 mg/L	0.004 mg/L	98.7	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00975 mg/L	0.01 mg/L	97.5	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0385 mg/L	0.04 mg/L	96.4	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0189 mg/L	0.02 mg/L	94.4	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0187 mg/L	0.02 mg/L	93.4	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1631913) - continued										
VA24C2483-001	Anonymous	Iron, dissolved	7439-89-6	E421	1.84 mg/L	2 mg/L	91.8	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0200 mg/L	0.02 mg/L	100.0	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0941 mg/L	0.1 mg/L	94.1	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0375 mg/L	0.04 mg/L	93.7	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.3 mg/L	10 mg/L	103	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.91 mg/L	4 mg/L	97.7	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0195 mg/L	0.02 mg/L	97.3	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0408 mg/L	0.04 mg/L	102	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.16 mg/L	10 mg/L	91.6	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00388 mg/L	0.004 mg/L	96.9	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	1.79 mg/L	2 mg/L	89.7	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	0.0423 mg/L	0.04 mg/L	106	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00381 mg/L	0.004 mg/L	95.3	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0374 mg/L	0.04 mg/L	93.6	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0185 mg/L	0.02 mg/L	92.7	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00394 mg/L	0.004 mg/L	98.6	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	0.414 mg/L	0.4 mg/L	104	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
Dissolved Metals (QCLot: 1636161)										
VA24C2483-003	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000960 mg/L	0 mg/L	96.0	70.0	130	----
Speciated Metals (QCLot: 1632570)										
KS2403545-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----
Aggregate Organics (QCLot: 1632038)										
VA24C2599-002	Anonymous	Phenols, total (4AAP)	----	E562	0.0218 mg/L	0.02 mg/L	109	75.0	125	----
Volatile Organic Compounds (QCLot: 1633720)										
VA24C2427-002	Anonymous	Benzene	71-43-2	E611C	99.6 µg/L	100 µg/L	99.6	60.0	140	----
		Bromodichloromethane	75-27-4	E611C	99.4 µg/L	100 µg/L	99.4	60.0	140	----
		Bromoform	75-25-2	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Carbon tetrachloride	56-23-5	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Chlorobenzene	108-90-7	E611C	100 µg/L	100 µg/L	100	60.0	140	----
		Chloroethane	75-00-3	E611C	109 µg/L	100 µg/L	109	50.0	150	----
		Chloroform	67-66-3	E611C	100 µg/L	100 µg/L	100	60.0	140	----
		Chloromethane	74-87-3	E611C	90.6 µg/L	100 µg/L	90.6	50.0	150	----
		Dibromochloromethane	124-48-1	E611C	102 µg/L	100 µg/L	102	60.0	140	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1633720) - continued										
VA24C2427-002	Anonymous	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	105 µg/L	100 µg/L	105	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611C	99.9 µg/L	100 µg/L	99.9	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611C	98.1 µg/L	100 µg/L	98.1	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611C	95.0 µg/L	100 µg/L	95.0	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	97.1 µg/L	100 µg/L	97.1	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Dichloromethane	75-09-2	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	100 µg/L	100 µg/L	100	60.0	140	----
		Ethylbenzene	100-41-4	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Styrene	100-42-5	E611C	106 µg/L	100 µg/L	106	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	99.8 µg/L	100 µg/L	99.8	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	92.3 µg/L	100 µg/L	92.3	60.0	140	----
		Tetrachloroethylene	127-18-4	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Toluene	108-88-3	E611C	99.4 µg/L	100 µg/L	99.4	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	96.0 µg/L	100 µg/L	96.0	60.0	140	----
		Trichloroethylene	79-01-6	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611C	109 µg/L	100 µg/L	109	50.0	150	----
		Vinyl chloride	75-01-4	E611C	98.6 µg/L	100 µg/L	98.6	50.0	150	----
		Xylene, m+p-	179601-23-1	E611C	206 µg/L	200 µg/L	103	60.0	140	----
		Xylene, o-	95-47-6	E611C	101 µg/L	100 µg/L	101	60.0	140	----
Hydrocarbons (QCLot: 1633718)										
VA24C2159-001	Anonymous	VHw (C6-C10)	----	E581.VH+F1	5670 µg/L	6310 µg/L	89.8	60.0	140	----

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 -

Page of

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Environmental Division Vancouver

Work Order Reference VA24C2623

Telephone : +1 604 253 4188

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

Reports / Recipients	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☑ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	
Email 3	
Select Invoice	
Email 1 or Fax	
Email 2	

Turnaround Time (TAT) Requested
☑ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.
Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.
Date and Time Required for all E&P TATs: 07 Aug 5pm 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):		ALS Contact:	Sampler:

Analysis Request

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Total metals + mercury	Dissolved metals + mercury	Total hexavalent chromium	Total trivalent chromium	TSS, TDS, T-Alkalinity, Anions scan (Br, Cl, F, NO2, NO3, SO4)	Total sulfide (low) (as H2S), Unionized Sulfide (low)	Nutrients (ammonia, ammonium, total nitrogen, total phosphorus, phenols)	VOC/VPH	EPH, PAH, LEPH/HEPH	DOC	Glycols	General parameters (alkalinity)			SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	~~BOR EOP~~			~~Water~~	15	R	R	R	R	R	R	R	R	R	R	R	R					
	~~pH: cond: temp:~~																					
	WLNG EOP [redacted]	30-Aug-24	13:30	Water	15	R	R	R	R	R	R	R	R	R	R	R	R					
	pH: 7.66 cond: 216 µS/cm temp: 21.1°C																					
	Duplicate	30-Aug-24	13:30	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~~					

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

SAMPLE RECEIPT DETAILS (ALS use only)

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

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

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

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Date: Aug 30/2024	Time: 16:51	Received by:	Date:	Time:	Received by:	Date: Aug 30	Time: 5:10pm

IONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY AUG 2020 FRONT

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. ...ater 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

2024-8-30-Chycoski-D3418

Project Component:	Tunnel	**Site Name:**	WLNG Treatment Discharge
Inspection Date:	08/30/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	
Temperature(c):	Low 18 High 27	**Permit:**	PE 110136
Weather Conditions:	Clear	**Ground Conditions:**	Dry

Observations

Time: 13:30:00 **Flow Volume (visual):** N/A

Notes:

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

Samples Collected - Parameters

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

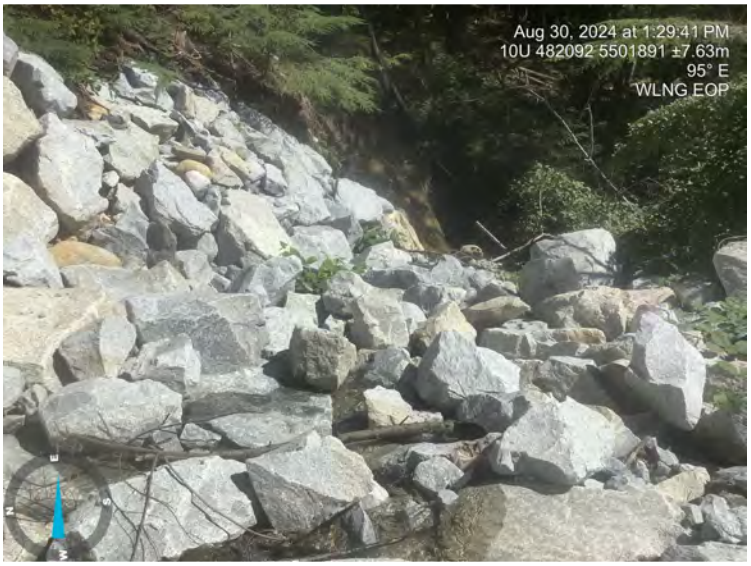

Photo: 3

Location: WLNG EOP

Description: DS view

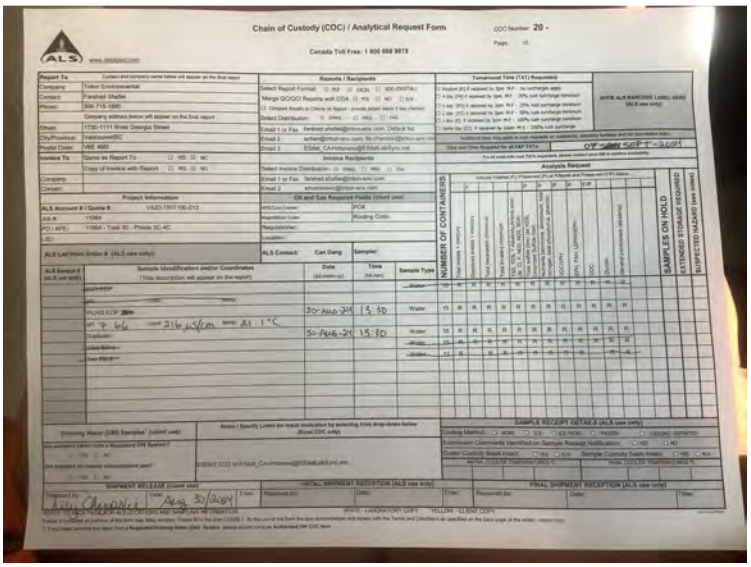

Photo: 4

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:			

Appendix D: Woodfibre Site Receiving Environment Documentation

Woodfibre Site Receiving Environment Sample Analysis

TRITON	Sample ID	Reviewed and signed off by:			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					VA24C2095-001	VA24C2095-002					
	Date Sampled					27-Aug-24	27-Aug-24					
	Time Sampled					9:39	10:39					
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	7.01	7.31		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]	-	14.6	15.7		Guideline is species-dependent. Short-term daily temperature guideline is 19°C for streams with unknown fish distribution. Refer to footnote 4 for background temperature range for East Creek. Refer to BC Water Quality Guidelines for more information Hourly rate of change not to exceed 1°C. Calculation: US value +/- 1 = guideline range		Guideline for marine waters are based on natural ambient conditions. Max and min. 1°C change from natural condition. Natural temperature cycle characteristic of the site should not be altered in amplitude or frequency by human activities. Max rate of any human-induced temperature change not to exceed 0.5°C hourly. treams with unknown fish distribution. Refer to footnote 4 for background temperature range for East Creek. Calculation: US value +/- 1 = guideline range	
Conductivity (field)	µS/cm	-	-	-	-	342	230					
Turbidity (field)	NTU	Varies with background, see note Guideline = 12.8	Varies with background, see note Guideline = 4.23 5-week discrete sampling average = 1.95 (DS)	Varies with background, see note Guideline = 12.8	Varies with background, see note Guideline = 4.23 5-week discrete sampling average = 1.95 (DS)	4.84	2.41		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	9.17	9.02		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	-	-	-	-	132	82.3					
Total Dissolved Solids	mg/L	-	-	-	-	267	166					
Total Suspended Solids	mg/L	Varies with background, see note Guideline = 28	Varies with background, see note Guideline = 8.34 5-week discrete sampling average = 5.34 (DS)	Varies with background, see note Guideline = 28	Varies with background, see note Guideline = 8.34 5-week discrete sampling average = 5.34 (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	-	-	-	-	10.1	5.84			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	13.3	37.8	The upstream location has moderate sensitivity to acid inputs (i.e. moderate buffering capacity), while the downstream has low sensitivity to acid inputs.		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	-	-	-	-	0.0034	0.0019					
Total Sulfide (un-ionized as H_2S)	mg/L	-	0.002	-	-	0.002	< 0.0015			Working guideline		
Total Sulfide (as H_2S)	mg/L	-	-	-	-	0.0036	0.002					
Anions and Nutrients												
Ammonia	mg/L ammonia-N	Varies with pH and temperature. See note. Guideline = 19.7	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	0.023	0.007		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	13.4	6.46				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 =1.446	-	1.5	-	0.02	0.036		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), 0.71 (DS)	-	3.7 5-week field average = 1.50 (US), 0.71 (DS)	7.38	3.14					
Nitrite (as N)	mg/L	Varies with chloride. Table 27B, see note. Guideline = 0.60	Varies with chloride. Table 27B, see note. Guideline = 0.20	-	-	0.09	0.026		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	-	-	-	-	7.75	3.38					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.094	0.027			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	-	-	98.8	42.8			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 = 0.184 5-week field average = 0.128 (US), 0.081 (DS)	-	-	0.217	0.098			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	-	-	0.00015	0.00012					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.00048	0.00022					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.0222	0.0187			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	0.017	0.014					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	0.0000338	0.0000238					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	34	26.1					
Cesium (Cs)-Total	mg/L	-	-	-	-	0.00002	0.000016					
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	-	-	0.00037	0.00015					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002 5-week field average = 0.0013 (US), 0.0009 (DS)	0.0037	0.0019	**Total Cu at the upstream location exceeds short-term BCWG for MAL.** However this is not considered an exceedance as it is at the upstream (background) location.				
Iron (Fe)-Total	mg/L	1	-	-	-	0.12	0.27					
Lead (Pb)-Total	mg/L	Varies with hardness. See Note. Guideline = 0.12	Varies with hardness. See Note. Guideline = 0.004	0.14	0.002	0.00009	0.00017		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	< 0.0010					
Magnesium (Mg)-Total	mg/L	-	-	-	-	11.4	4.15					
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 0.82	Varies with hardness Guideline = 0.77	-	-	0.022	0.028		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	-	-	0.00144	0.00144					
Nickel (Ni)-Total	mg/L	-	Varies with hardness Guideline = 0.025	-	0.0083	0.0029	0.0016			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	-	-	0.098	< 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	-	-	-	-	2.99	1.46					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.0020	0.0016					
Selenium (Se)-Total	mg/L	-	0.002	-	0.002	0.000113	< 0.000050			Guideline for freshwater aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidelines and sampling guidance.		Guideline for marine aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidelines and sampling guidance.
Silicon (Si)-Total	mg/L	-	-	-	-	5.79	5.88					
Silver (Ag)-Total	mg/L	Varies with hardness, see note Guideline = 0.003	Varies with hardness, see note Guideline = 0.00005	0.003	0.0015	0.000017	< 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	-	-	-	-	13.8	6.87					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.100	0.081					
Sulfur (S)-Total	mg/L	-	-	-	-	32.9	14.1					
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	-	-	-	-	< 0.00300	0.00187					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Total	mg/L	-	0.0085	-	-	0.000356	0.000167			Working guideline status		
Vanadium (V)-Total	mg/L	-	-	-	0.050	0.00074	< 0.00050					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	0.010	0.0044	0.0047					
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.0714	0.0422					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	0.00013	< 0.00010					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00042	0.00019					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.0209	0.0178					
Beryllium (Be)-Dissolved	mg/L	-	-	-	-	< 0.000100	< 0.000100					
Bismuth (Bi)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Boron (B)-Dissolved	mg/L	-	-	-	-	0.015	0.013					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note Guideline = 0.000783	Varies with hardness, see note Guideline = 0.000095	-	-	0.000027	0.000021		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	-	-	32.7	22.6	Both locations have 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	-	-	-	-	0.000017	0.000015					
Chromium (Cr)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Cobalt (Co)-Dissolved	mg/L	-	-	-	-	0.00032	0.00013					
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note Guideline = 0.0139	Guideline varies with other parameters, see note Guideline = 0.0011 5-week field average = 0.0011 (US), 0.0007 (DS)	-	-	0.0030	0.0016		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	-	-	-	0.038	0.024					
Lead (Pb)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	< 0.0010	< 0.0010					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	10.6	4.3					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.0182	0.0111					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.00138	0.00128					
Nickel (Ni)-Dissolved	mg/L	-	-	-	-	0.00275	0.00132					
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	0.067	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	2.87	1.41					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00205	0.00165					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	0.000064	0.00005					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	5.1	5.13					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	13.2	6.62					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.102	0.0726					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	32.7	14.4					
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	-	-	-	-	0.0003	< 0.00030					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.000346	0.000152					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	0.0006	< 0.00050					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness Guideline = 0.086	Varies with pH, DOC, hardness Guideline = 0.0062 5-week field average = 0.0016 (US), 0.0022 (DS)	-	-	0.0031	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	< 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

Parameters Used to Calculate Guidelines

Analyte	Units	FAL-ST [1,2]	FAL-LT [1,2]	MAL-ST [1]	MAL-LT [1,2]	Values WLNG US1 (Upstream)	Values WLNG DS 1 (Downstream)
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations				7.01	7.31
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations				14.6	15.7
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations				4.84	2.41
Hardness (as CaCO3) (total)	mg/L	aboratory tested total hardness taken at each respective sample site on the day of sampling used in guideline calculatio				132	82.3
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations				10.1	5.84
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations				13.3	37.8
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations				13.4	6.46

Woodfibre Site Receiving Environment Lab Documentation

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CERTIFICATE OF ANALYSIS

Work Order	: **VA24C2095**	Page	: 1 of 9
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 27-Aug-2024 17:30
PO	: 11964-Task 20-Phase 3C-4C	Date Analysis Commenced	: 28-Aug-2024
C-O-C number	: ----	Issue Date	: 05-Sep-2024 20:00
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 3		
No. of samples analysed	: 3		

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

This 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
		Metals, Burnaby, British Columbia
		Organics, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Administration, Burnaby, British Columbia
		Metals, Burnaby, British Columbia

General Comments

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

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

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

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

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

LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
°C	degrees celsius
µg/L	micrograms per litre
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.

Qualifiers

Qualifier	*Description*
DLCI	*Detection Limit Raised: Chromatographic interference due to co-elution.*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*
HTDC	*Hold time exceeded for dilution or re-analysis. Reported results are consistent with initial results (tested within hold time), and are valid and defensible.*

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	WLNG Penstock	----	----
					Client sampling date / time	27-Aug-2024 09:39	27-Aug-2024 10:39	27-Aug-2024 11:45	----	----
						VA24C2095-001	VA24C2095-002	VA24C2095-003	--------	--------
						Result	Result	Result	----	----
Field Tests										
Conductivity, field	----	EF001/VA	0.10	µS/cm		342.00	230.00	19.000	----	----
pH, field	----	EF001/VA	0.10	pH units		7.01	7.31	7.68	----	----
Temperature, field	----	EF001/VA	0.10	°C		14.6	15.7	15.1	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		125	74.1	3.86	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		132	82.3	4.12	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		267	166	33	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		<3.0	<3.0	8.5	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		13.3	37.8	2.6	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.0229	0.0072	0.0132	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L		<0.050	<0.050	<0.050	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L		13.4	6.46	0.54	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		0.020	0.036	<0.020	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		7.38	3.14	0.119	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L		0.0900	0.0259	<0.0010	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L		7.75	3.38	0.214	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.0936	0.0273	0.0079	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		98.8	42.8	2.51	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		10.1	5.84	2.26	----	----
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L		0.0034	0.0019	<0.0015 HTDC	----	----
Sulfide, un-ionized (as H2S), from total	7783-06-4	EC395/VA	0.0015	mg/L		0.0020	<0.0015	<0.0015	----	----
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L		0.0036	0.0020	<0.0016	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		0.217	0.0982	0.218	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		0.00015	0.00012	0.00018	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG US 1	WLNG DS 1	WLNG Penstock	----	----
					Client sampling date / time	27-Aug-2024 09:39	27-Aug-2024 10:39	27-Aug-2024 11:45	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C2095-001	VA24C2095-002	VA24C2095-003	--------	--------
						Result	Result	Result	----	----
Total Metals										
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00048	0.00022	0.00080	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.0222	0.0187	0.00382	----	----
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L		<0.000100	<0.000100	<0.000100	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L		0.017	0.014	<0.010	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		0.0000338	0.0000238	0.0000250	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		34.0	26.1	1.35	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000020	0.000016	0.000016	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		<0.00050	<0.00050	0.00228	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		0.00037	0.00015	0.00204	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00370	0.00190	0.0180	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.119	0.270	20.1	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000086	0.000169	0.000561	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		<0.0010	<0.0010	<0.0010	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		11.4	4.15	0.182	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.0215	0.0278	0.467	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.00144	0.00144	0.0138	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		0.00295	0.00156	0.0179	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		0.098	<0.050	<0.050	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		2.99	1.46	0.217	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00196	0.00160	0.00054	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		0.000113	<0.000050	<0.000050	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		5.79	5.88	2.45	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		0.000017	<0.000010	0.000014	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		13.8	6.87	0.787	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0995	0.0811	0.00634	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		32.9	14.1	0.61	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	WLNG Penstock	----	----
					Client sampling date / time	27-Aug-2024 09:39	27-Aug-2024 10:39	27-Aug-2024 11:45	----	----
						VA24C2095-001	VA24C2095-002	VA24C2095-003	--------	--------
						Result	Result	Result	----	----
Total Metals										
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00010	<0.00010	0.00052	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		<0.00300 DLM	0.00187	0.00396	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.000356	0.000167	0.000312	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.00074	<0.00050	0.00053	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		0.0044	0.0047	<0.0030	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0714	0.0422	0.0317	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		0.00013	<0.00010	<0.00010	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00042	0.00019	0.00024	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.0209	0.0178	0.00113	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L		<0.000100	<0.000100	<0.000100	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		0.015	0.013	<0.010	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		0.0000268	0.0000215	<0.0000100 DLM	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		32.7	22.6	1.28	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		0.000017	0.000015	0.000010	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		0.00032	0.00013	0.00061	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.00301	0.00155	0.00260	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.038	0.024	0.277	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		<0.0010	<0.0010	<0.0010	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		10.6	4.30	0.160	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.0182	0.0111	0.255	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.00138	0.00128	0.00554	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		0.00275	0.00132	0.00660	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	WLNG Penstock	----	----
					Client sampling date / time	27-Aug-2024 09:39	27-Aug-2024 10:39	27-Aug-2024 11:45	----	----
						VA24C2095-001	VA24C2095-002	VA24C2095-003	--------	--------
						Result	Result	Result	----	----
Dissolved Metals										
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		0.067	<0.050	<0.050	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		2.87	1.41	0.202	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00205	0.00165	0.00050	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		0.000064	0.000050	<0.000050	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		5.10	5.13	1.68	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	<0.000010	0.000026	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		13.2	6.62	0.816	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.102	0.0726	0.00583	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		32.7	14.4	0.78	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		0.00030	<0.00030	<0.00030	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		0.000346	0.000152	0.000122	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		0.00060	<0.00050	<0.00050	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0031	0.0032	0.0017	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Field	Field	Field	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Field	Field	Field	----	----
Speciated Metals										
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/VA	0.00050	mg/L		<0.00050	<0.00050	0.00228	----	----
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	----	----

Analytical Results

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

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	WLNG Penstock	----	----
					Client sampling date / time	27-Aug-2024 09:39	27-Aug-2024 10:39	27-Aug-2024 11:45	----	----
						VA24C2095-001	VA24C2095-002	VA24C2095-003	--------	--------
						Result	Result	Result	----	----
Volatile Organic Compounds										
Dichloropropane, 1,2-	78-87-5	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Dichloropropylene, cis+trans-1,3-	542-75-6	E611C/VA	0.75	µg/L		----	----	<0.75	----	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C/VA	0.20	µg/L		----	----	<0.20	----	----
Trichloroethane, 1,1,2-	79-00-5	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Trichlorofluoromethane	75-69-4	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Volatile Organic Compounds [Drycleaning]										
Carbon tetrachloride	56-23-5	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Chloroethane	75-00-3	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Dichloroethane, 1,1-	75-34-3	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Dichloroethane, 1,2-	107-06-2	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Dichloroethylene, 1,1-	75-35-4	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Dichloroethylene, cis-1,2-	156-59-2	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Dichloroethylene, trans-1,2-	156-60-5	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Dichloromethane	75-09-2	E611C/VA	1.0	µg/L		----	----	<1.0	----	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Tetrachloroethylene	127-18-4	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Trichloroethane, 1,1,1-	71-55-6	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Trichloroethylene	79-01-6	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Vinyl chloride	75-01-4	E611C/VA	0.40	µg/L		----	----	<0.40	----	----
Volatile Organic Compounds [Fuels]										
Benzene	71-43-2	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Ethylbenzene	100-41-4	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Styrene	100-42-5	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Toluene	108-88-3	E611C/VA	0.40	µg/L		----	----	<0.40	----	----
Xylene, m+p-	179601-23-1	E611C/VA	0.40	µg/L		----	----	<0.40	----	----
Xylene, o-	95-47-6	E611C/VA	0.30	µg/L		----	----	<0.30	----	----
Xylenes, total	1330-20-7	E611C/VA	0.50	µg/L		----	----	<0.50	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG US 1	WLNG DS 1	WLNG Penstock	----	----
					Client sampling date / time	27-Aug-2024 09:39	27-Aug-2024 10:39	27-Aug-2024 11:45	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C2095-001	VA24C2095-002	VA24C2095-003	--------	--------
						Result	Result	Result	----	----
Volatile Organic Compounds [THMs]										
Bromodichloromethane	75-27-4	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Bromoform	75-25-2	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Chloroform	67-66-3	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Dibromochloromethane	124-48-1	E611C/VA	0.50	µg/L		----	----	<0.50	----	----
Hydrocarbons										
EPH (C10-C19)	----	E601A/VA	250	µg/L		----	----	<250	----	----
EPH (C19-C32)	----	E601A/VA	250	µg/L		----	----	<250	----	----
VHw (C6-C10)	----	E581.VH+F1/VA	100	µg/L		----	----	<100	----	----
HEPHw	----	EC600A/VA	250	µg/L		----	----	<250	----	----
LEPHw	----	EC600A/VA	250	µg/L		----	----	<250	----	----
VPHw	----	EC580A/VA	100	µg/L		----	----	<100	----	----
Hydrocarbons Surrogates										
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%		----	----	84.5	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%		----	----	100	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%		----	----	97.0	----	----
Difluorobenzene, 1,4-	540-36-3	E611C/VA	1.0	%		----	----	102	----	----
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	83-32-9	E641A/VA	0.010	µg/L		----	----	0.040	----	----
Acenaphthylene	208-96-8	E641A/VA	0.010	µg/L		----	----	<0.010	----	----
Acridine	260-94-6	E641A/VA	0.010	µg/L		----	----	<0.010	----	----
Anthracene	120-12-7	E641A/VA	0.010	µg/L		----	----	<0.010	----	----
Benz(a)anthracene	56-55-3	E641A/VA	0.010	µg/L		----	----	<0.011 DLCI	----	----
Benzo(a)pyrene	50-32-8	E641A/VA	0.0050	µg/L		----	----	<0.0050	----	----
Benzo(b+j)fluoranthene	n/a	E641A/VA	0.010	µg/L		----	----	0.015	----	----
Benzo(b+j+k)fluoranthene	n/a	E641A/VA	0.015	µg/L		----	----	0.015	----	----
Benzo(g,h,i)perylene	191-24-2	E641A/VA	0.010	µg/L		----	----	<0.010	----	----
Benzo(k)fluoranthene	207-08-9	E641A/VA	0.010	µg/L		----	----	<0.010	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG US 1	WLNG DS 1	WLNG Penstock	----	----
					Client sampling date / time	27-Aug-2024 09:39	27-Aug-2024 10:39	27-Aug-2024 11:45	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24C2095-001	VA24C2095-002	VA24C2095-003	--------	--------
						Result	Result	Result	----	----
Polycyclic Aromatic Hydrocarbons										
Chrysene	218-01-9	E641A/VA	0.010	µg/L		----	----	0.046	----	----
Dibenz(a,h)anthracene	53-70-3	E641A/VA	0.0050	µg/L		----	----	<0.0050	----	----
Fluoranthene	206-44-0	E641A/VA	0.010	µg/L		----	----	0.070	----	----
Fluorene	86-73-7	E641A/VA	0.010	µg/L		----	----	0.032	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/VA	0.010	µg/L		----	----	<0.010	----	----
Methylnaphthalene, 1-	90-12-0	E641A/VA	0.010	µg/L		----	----	0.014	----	----
Methylnaphthalene, 2-	91-57-6	E641A/VA	0.010	µg/L		----	----	0.025	----	----
Naphthalene	91-20-3	E641A/VA	0.050	µg/L		----	----	<0.050	----	----
Phenanthrene	85-01-8	E641A/VA	0.020	µg/L		----	----	0.035	----	----
Pyrene	129-00-0	E641A/VA	0.010	µg/L		----	----	0.064	----	----
Quinoline	91-22-5	E641A/VA	0.050	µg/L		----	----	<0.050	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A/VA	0.1	%		----	----	108	----	----
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%		----	----	105	----	----
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%		----	----	109	----	----
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	%		----	----	94.7	----	----

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	: **VA24C2095**	Page	: 1 of 19
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 27-Aug-2024 17:30
PO	: 11964-Task 20-Phase 3C-4C	Issue Date	: 05-Sep-2024 20:00
C-O-C number	: ----		
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 3		
No. of samples analysed	: 3		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No 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

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Laboratory Control Sample (LCS) Recoveries								
Total Metals	QC-1624623-002	----	Silicon, total	7440-21-3	E420	122 % MES	80.0-120%	Recovery greater than upper 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	27-Aug-2024	31-Aug-2024	28 days	4 days	✓	05-Sep-2024	28 days	9 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG Penstock	E298	27-Aug-2024	31-Aug-2024	28 days	4 days	✓	05-Sep-2024	28 days	9 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG US 1	E298	27-Aug-2024	31-Aug-2024	28 days	4 days	✓	05-Sep-2024	28 days	9 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG DS 1	E235.Br-L	27-Aug-2024	28-Aug-2024	28 days	1 days	✓	28-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG Penstock	E235.Br-L	27-Aug-2024	28-Aug-2024	28 days	1 days	✓	28-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG US 1	E235.Br-L	27-Aug-2024	28-Aug-2024	28 days	1 days	✓	28-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG DS 1	E235.Cl	27-Aug-2024	28-Aug-2024	28 days	1 days	✓	28-Aug-2024	28 days	1 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE										
WLNG Penstock	E235.Cl	27-Aug-2024	28-Aug-2024	28 days	1 days	✓	28-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
WLNG US 1	E235.Cl	27-Aug-2024	28-Aug-2024	28 days	1 days	✓	28-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
WLNG DS 1	E235.F	27-Aug-2024	28-Aug-2024	28 days	1 days	✓	28-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
WLNG Penstock	E235.F	27-Aug-2024	28-Aug-2024	28 days	1 days	✓	28-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
WLNG US 1	E235.F	27-Aug-2024	28-Aug-2024	28 days	1 days	✓	28-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
WLNG DS 1	E235.NO3-L	27-Aug-2024	28-Aug-2024	3 days	1 days	✓	28-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
WLNG Penstock	E235.NO3-L	27-Aug-2024	28-Aug-2024	3 days	1 days	✓	28-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
WLNG US 1	E235.NO3-L	27-Aug-2024	28-Aug-2024	3 days	1 days	✓	28-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
WLNG DS 1	E235.NO2-L	27-Aug-2024	28-Aug-2024	3 days	1 days	✓	28-Aug-2024	3 days	1 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
WLNG Penstock	E235.NO2-L	27-Aug-2024	28-Aug-2024	3 days	1 days	✓	28-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
WLNG US 1	E235.NO2-L	27-Aug-2024	28-Aug-2024	3 days	1 days	✓	28-Aug-2024	3 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
WLNG DS 1	E235.SO4	27-Aug-2024	28-Aug-2024	28 days	1 days	✓	28-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
WLNG Penstock	E235.SO4	27-Aug-2024	28-Aug-2024	28 days	1 days	✓	28-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
WLNG US 1	E235.SO4	27-Aug-2024	28-Aug-2024	28 days	1 days	✓	28-Aug-2024	28 days	1 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
WLNG DS 1	E366	27-Aug-2024	31-Aug-2024	28 days	4 days	✓	03-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
WLNG Penstock	E366	27-Aug-2024	31-Aug-2024	28 days	4 days	✓	03-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
WLNG US 1	E366	27-Aug-2024	31-Aug-2024	28 days	4 days	✓	03-Sep-2024	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG DS 1	E372-U	27-Aug-2024	31-Aug-2024	28 days	4 days	✓	04-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
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG Penstock	E372-U	27-Aug-2024	31-Aug-2024	28 days	4 days	✓	04-Sep-2024	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG US 1	E372-U	27-Aug-2024	31-Aug-2024	28 days	4 days	✓	04-Sep-2024	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
WLNG DS 1	E509	27-Aug-2024	05-Sep-2024	28 days	9 days	✓	05-Sep-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
WLNG Penstock	E509	27-Aug-2024	05-Sep-2024	28 days	9 days	✓	05-Sep-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial - dissolved (lab preserved)										
WLNG US 1	E509	27-Aug-2024	05-Sep-2024	28 days	9 days	✓	05-Sep-2024	28 days	9 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
WLNG DS 1	E421	27-Aug-2024	03-Sep-2024	180 days	7 days	✓	05-Sep-2024	180 days	9 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
WLNG Penstock	E421	27-Aug-2024	03-Sep-2024	180 days	7 days	✓	05-Sep-2024	180 days	9 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved)										
WLNG US 1	E421	27-Aug-2024	03-Sep-2024	180 days	8 days	✓	05-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 DS 1	EF001	27-Aug-2024	----	----	----		29-Aug-2024	----	2 days	

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial (sodium bisulfate)										
WLNG Penstock	EF001	27-Aug-2024	----	----	----		29-Aug-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)										
WLNG US 1	EF001	27-Aug-2024	----	----	----		29-Aug-2024	----	2 days	
Glycols : Glycols (4 analytes) by GC-FID										
Glass vial										
WLNG Penstock	E680E	27-Aug-2024	30-Aug-2024	7 days	3 days	✓	01-Sep-2024	40 days	2 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate)										
WLNG Penstock	E601A	27-Aug-2024	04-Sep-2024	14 days	8 days	✓	05-Sep-2024	40 days	1 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate)										
WLNG Penstock	E581.VH+F1	27-Aug-2024	04-Sep-2024	14 days	8 days	✓	04-Sep-2024	14 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG DS 1	E358-L	27-Aug-2024	31-Aug-2024	28 days	4 days	✓	02-Sep-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG Penstock	E358-L	27-Aug-2024	31-Aug-2024	28 days	4 days	✓	02-Sep-2024	28 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG US 1	E358-L	27-Aug-2024	31-Aug-2024	28 days	4 days	✓	02-Sep-2024	28 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG DS 1	E290	27-Aug-2024	28-Aug-2024	14 days	1 days	✓	29-Aug-2024	14 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
Physical Tests : Alkalinity Species by Titration										
HDPE WLNG Penstock	E290	27-Aug-2024	28-Aug-2024	14 days	1 days	✓	29-Aug-2024	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WLNG US 1	E290	27-Aug-2024	28-Aug-2024	14 days	1 days	✓	29-Aug-2024	14 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE WLNG DS 1	E162	27-Aug-2024	----	----	----		02-Sep-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE WLNG Penstock	E162	27-Aug-2024	----	----	----		02-Sep-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE WLNG US 1	E162	27-Aug-2024	----	----	----		02-Sep-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WLNG DS 1	E160	27-Aug-2024	----	----	----		02-Sep-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WLNG Penstock	E160	27-Aug-2024	----	----	----		02-Sep-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WLNG US 1	E160	27-Aug-2024	----	----	----		02-Sep-2024	7 days	6 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) WLNG Penstock	E641A	27-Aug-2024	04-Sep-2024	14 days	8 days	✓	04-Sep-2024	40 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
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
WLNG DS 1	E532	27-Aug-2024	----	----	----		29-Aug-2024	28 days	2 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
WLNG Penstock	E532	27-Aug-2024	----	----	----		29-Aug-2024	28 days	2 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
UV-inhibited HDPE - total (sodium hydroxide)										
WLNG US 1	E532	27-Aug-2024	----	----	----		29-Aug-2024	28 days	2 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
WLNG DS 1	E508	27-Aug-2024	05-Sep-2024	28 days	9 days	✓	05-Sep-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
WLNG Penstock	E508	27-Aug-2024	05-Sep-2024	28 days	9 days	✓	05-Sep-2024	28 days	9 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
WLNG US 1	E508	27-Aug-2024	05-Sep-2024	28 days	9 days	✓	05-Sep-2024	28 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
WLNG DS 1	E420	27-Aug-2024	04-Sep-2024	180 days	8 days	✓	05-Sep-2024	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
WLNG Penstock	E420	27-Aug-2024	04-Sep-2024	180 days	8 days	✓	05-Sep-2024	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
WLNG US 1	E420	27-Aug-2024	04-Sep-2024	180 days	8 days	✓	05-Sep-2024	180 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*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG DS 1	E395	27-Aug-2024	----	----	----		03-Sep-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG Penstock	E395	27-Aug-2024	----	----	----		03-Sep-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG US 1	E395	27-Aug-2024	----	----	----		03-Sep-2024	7 days	7 days	✓
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
WLNG Penstock	E611C	27-Aug-2024	04-Sep-2024	14 days	8 days	✓	04-Sep-2024	14 days	8 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1621366	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1628095	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1621359	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1621358	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1633830	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1624670	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1628099	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	1621357	1	20	5.0	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1626524	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1621360	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1621361	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1621362	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	1628916	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1625000	1	7	14.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1634286	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1624623	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1628093	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1628094	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1630069	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1628912	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1631193	1	20	5.0	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1631195	1	12	8.3	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1621366	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1628095	1	20	5.0	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1631166	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1621359	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1621358	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1633830	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1624670	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1628099	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	1621357	1	20	5.0	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1626524	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1621360	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1621361	1	16	6.2	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1631167	1	4	25.0	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							
Sulfate in Water by IC	E235.SO4	1621362	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	1628916	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1625000	1	7	14.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1634286	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1624623	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1628093	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1628094	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1630069	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1628912	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1631193	1	20	5.0	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1631195	1	12	8.3	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1621366	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	1628095	1	20	5.0	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1631166	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1621359	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	1621358	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1633830	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1624670	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1628099	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	1621357	1	20	5.0	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1626524	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1621360	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1621361	1	16	6.2	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1631167	1	4	25.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1621362	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	1628916	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1625000	1	7	14.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1634286	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1624623	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1628093	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1628094	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1630069	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	1628912	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1631193	1	20	5.0	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1631195	1	12	8.3	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1628095	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1621359	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*
Matrix Spikes (MS) - Continued							
Chloride in Water by IC	E235.Cl	1621358	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1633830	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1624670	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1628099	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	1621357	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1621360	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1621361	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	1621362	1	16	6.2	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1625000	1	7	14.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1634286	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1624623	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1628093	1	11	9.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1628094	1	20	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1630069	1	17	5.8	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1631193	1	20	5.0	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1631195	1	12	8.3	5.0	✓

Methodology References and Summaries

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

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Nitrogen by Colourimetry	E366 ALS Environmental - Vancouver	Water	Chinchilla Scientific Nitrate Method, 2011	Following digestion, total nitrogen is is determined colourimetrically using a discrete analyzer utilizing the vanadium chloride reduction method. This method of analysis is approved under US EPA 40 CFR Part 136 (May 2021).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methlyene blue colourimetric method. Results expressed "as H2S" if reported represent the maximum possible H2S concentration based on the total sulfide concentration in the sample. The H2S calculation converts Total Sulphide as (S2-) and reports it as Total Sulphide as (H2S)
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Hexavalent Chromium (Cr VI) by IC	E532 ALS Environmental - Vancouver	Water	APHA 3500-Cr C (Ion Chromatography)	Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection. Results are based on an un-filtered, field-preserved sample.
VH and F1 by Headspace GC-FID	E581.VH+F1 ALS Environmental - Vancouver	Water	BC MOE Lab Manual / CCME PHC in Soil - Tier 1 (mod)	Volatile Hydrocarbons (VH and F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
BC PHCs - EPH by GC-FID	E601A ALS Environmental - Vancouver	Water	BC MOE Lab Manual	Sample extracts are analyzed by GC-FID for BC hydrocarbon fractions.
VOCs (BC List) by Headspace GC-MS	E611C ALS Environmental - Vancouver	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Total Xylenes is the sum of m,p-Xylene & o-Xylene. Total BTEX is the sum of Benzene, Toluene, Ethylbenzene, & Total Xylenes. Total BTEX+Styrene is the sum of Total BTEX & Styrene. Total Trihalomethanes [THMs] is the sum of Bromodichloromethane, Bromoform, Chloroform, & Dibromochloromethane.
PAHs in Water by Hexane LVI GC-MS	E641A ALS Environmental - Vancouver	Water	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by large volume injection (LVI) GC-MS.
Glycols (4 analytes) by GC-FID	E680E ALS Environmental - Vancouver	Water	EPA 8015D (mod)	Derivatized glycols are analyzed by GC-FID.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in $CaCO_3$ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Un-ionized Total Hydrogen Sulfide (calculated)	EC395 ALS Environmental - Vancouver	Water	APHA 4500 -S H	Un-ionized sulfide is calculated using results from total sulfide analysis, pH, temperature, and ionic strength of the sample. Calculation of un-ionized sulfide using total sulfide concentrations may be biased high due to particulate forms of sulfide measured during total sulfide testing.
Total Trivalent Chromium (Cr III) by Calculation	EC535 ALS Environmental - Vancouver	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
VPH: VH-BTEX-Styrene	EC580A ALS Environmental - Vancouver	Water	BC MOE Lab Manual (VPH in Water and Solids) (mod)	Volatile Petroleum Hydrocarbons (VPH) is calculated as follows: VPHw = Volatile Hydrocarbons (VH C6-C10) minus benzene, toluene, ethylbenzene, xylenes (BTEX) and styrene.
LEPH and HEPH: EPH-PAH	EC600A ALS Environmental - Vancouver	Water	BC MOE Lab Manual (LEPH and HEPH)	Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are calculated as follows: LEPH = Extractable Petroleum Hydrocarbons (EPH10-19) minus Acenaphthene, Acridine, Anthracene, Fluorene, Naphthalene and Phenanthrene; HEPH = Extractable Petroleum Hydrocarbons (EPH19-32) minus Benz(a)anthracene, Benzo(a)pyrene, Fluoranthene, and Pyrene.
Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3 or Chloramine measurements provided by client and recorded on ALS report may affect the validity of results.

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

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

QUALITY CONTROL REPORT

Work Order	: **VA24C2095**	Page	: 1 of 23
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 27-Aug-2024 17:30
PO	: 11964-Task 20-Phase 3C-4C	Date Analysis Commenced	: 28-Aug-2024
C-O-C number	: ----	Issue Date	: 05-Sep-2024 20:00
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 3		
No. of samples analysed	: 3		

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Organics, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Administration, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia

General Comments

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

Key :

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1621366)											
VA24C1734-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	17.7	17.9	1.12%	20%	----
Physical Tests (QC Lot: 1628912)											
FJ2402592-007	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1628916)											
FJ2402592-007	Anonymous	Solids, total dissolved [TDS]	----	E162	13	mg/L	116	114	2	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1621357)											
VA24C1732-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.120	0.116	0.003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1621358)											
VA24C1732-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1621359)											
VA24C1732-001	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: 1621360)											
VA24C1732-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.656	0.655	0.0991%	20%	----
Anions and Nutrients (QC Lot: 1621361)											
VA24C1732-001	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: 1621362)											
VA24C1732-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	27.8	27.8	0.246%	20%	----
Anions and Nutrients (QC Lot: 1628093)											
FJ2402564-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.437	0.441	1.03%	20%	----
Anions and Nutrients (QC Lot: 1628094)											
FJ2402564-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0099	0.0097	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1628095)											
FJ2402564-001	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: 1628099)											
FJ2402564-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	5.84	5.78	0.955%	20%	----
Total Sulfides (QC Lot: 1630069)											
CG2412245-003	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
Total Metals (QC Lot: 1624623)											
VA24C2042-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0671	0.0688	2.48%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00013	0.00014	0.000010	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: 1624623) - continued											
VA24C2042-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00085	0.00083	0.00002	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0383	0.0386	0.810%	20%	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	0.023	0.024	0.0007	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000149	0.0000175	0.0000026	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	140	141	0.296%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000010	0.000011	0.0000007	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	0.00024	0.00023	0.000006	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00142	0.00118	0.00024	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.150	0.149	0.537%	20%	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000053	0.000052	0.0000006	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0044	0.0046	0.0002	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.100	mg/L	49.5	50.2	1.49%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.133	0.134	0.582%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00451	0.00452	0.0429%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00084	0.00082	0.00002	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	0.079	0.063	0.016	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.100	mg/L	2.20	2.19	0.661%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00064	0.00067	0.00003	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000157	0.000132	0.000025	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	4.90	5.04	2.74%	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	44.6	45.6	2.37%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.785	0.786	0.193%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	172	176	2.18%	20%	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	0.000014	0.000014	0.0000001	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	0.00210	mg/L	<0.00210	<0.00210	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	0.000801	0.000845	5.39%	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: 1624623) - continued											
VA24C2042-001	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: 1634286)											
VA24C2046-003	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1624670)											
VA24C2095-001	WLNG US 1	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0714	0.0708	0.776%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00013	0.00013	0.000003	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00042	0.00038	0.00004	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0209	0.0209	0.111%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.015	0.016	0.0005	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000268	0.0000244	0.0000024	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	32.7	34.5	5.40%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000017	0.000017	0.0000004	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	0.00032	0.00033	0.000009	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00301	0.00310	2.98%	20%	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.038	0.038	0.0005	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	10.6	10.6	0.0185%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0182	0.0184	1.30%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00138	0.00135	2.18%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00275	0.00266	0.00009	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	0.067	0.071	0.004	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.87	2.88	0.463%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00205	0.00199	2.77%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000064	0.000092	0.000028	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	5.10	4.96	2.76%	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	13.2	13.3	0.607%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.102	0.101	0.525%	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: 1624670) - continued											
VA24C2095-001	WLNG US 1	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	32.7	31.2	4.49%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00030	0.00034	0.00004	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	0.000346	0.000345	0.253%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00060	0.00059	0.00001	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0031	0.0032	0.00008	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1633830)											
VA24C2043-010	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1625000)											
VA24C2095-001	WLNG US 1	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1631195)											
VA24C2039-003	Anonymous	Benzene	71-43-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloromethane	74-87-3	E611C	5.0	µg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E611C	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----

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: 1631195) - continued											
VA24C2039-003	Anonymous	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: 1631193)											
KS2403514-001	Anonymous	VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----
Glycols (QC Lot: 1626524)											
VA24C2095-003	WLNG Penstock	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: 1621366)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1628912)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1628916)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1621357)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1621358)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1621359)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1621360)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1621361)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1621362)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1628093)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1628094)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1628095)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1628099)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1630069)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1624623)						
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: 1624623) - 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: 1634286)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1624670)						
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: 1624670) - 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: 1633830)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1625000)						
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	<0.00050	----
Volatile Organic Compounds (QCLot: 1631195)						
Benzene	71-43-2	E611C	0.5	µg/L	<0.50	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	<0.50	----
Bromoform	75-25-2	E611C	0.5	µg/L	<0.50	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	<0.50	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	<0.50	----
Chloroethane	75-00-3	E611C	0.5	µg/L	<0.50	----
Chloroform	67-66-3	E611C	0.5	µg/L	<0.50	----
Chloromethane	74-87-3	E611C	5	µg/L	<5.0	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	<0.50	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	<0.50	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	<0.50	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	<0.50	----
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	<0.50	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	<0.50	----
Dichloromethane	75-09-2	E611C	1	µg/L	<1.0	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	<0.50	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	<0.50	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	<0.50	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	<0.50	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	<0.50	----
Styrene	100-42-5	E611C	0.5	µg/L	<0.50	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1631195) - continued						
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: 1631166)						
EPH (C10-C19)	----	E601A	250	µg/L	<250	----
EPH (C19-C32)	----	E601A	250	µg/L	<250	----
Hydrocarbons (QCLot: 1631193)						
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1631167)						
Acenaphthene	83-32-9	E641A	0.01	µg/L	<0.010	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	<0.010	----
Acridine	260-94-6	E641A	0.01	µg/L	<0.010	----
Anthracene	120-12-7	E641A	0.01	µg/L	<0.010	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	<0.010	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	<0.0050	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	<0.010	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	<0.010	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	<0.010	----
Chrysene	218-01-9	E641A	0.01	µg/L	<0.010	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	<0.0050	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	<0.010	----
Fluorene	86-73-7	E641A	0.01	µg/L	<0.010	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	<0.010	----
Naphthalene	91-20-3	E641A	0.05	µg/L	<0.050	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	<0.020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1631167) - continued						
Pyrene	129-00-0	E641A	0.01	µg/L	<0.010	----
Quinoline	91-22-5	E641A	0.05	µg/L	<0.050	----
Glycols (QCLot: 1626524)						
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: 1621366)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	99.2	85.0	115	----
Physical Tests (QCLot: 1628912)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	94.9	85.0	115	----
Physical Tests (QCLot: 1628916)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	99.9	85.0	115	----
Anions and Nutrients (QCLot: 1621357)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1621358)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 1621359)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 1621360)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 1621361)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 1621362)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 1628093)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	98.9	75.0	125	----
Anions and Nutrients (QCLot: 1628094)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	90.2	80.0	120	----
Anions and Nutrients (QCLot: 1628095)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	96.8	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1628099)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	97.4	80.0	120	----
Total Sulfides (QCLot: 1630069)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	92.7	80.0	120	----
Total Metals (QCLot: 1624623)									

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: 1624623) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	104	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	101	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	109	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	98.4	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	97.0	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	93.0	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	99.9	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	96.6	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	104	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	103	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	97.0	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	94.2	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	103	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	98.2	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	102	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	97.3	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	109	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	# 122	80.0	120	MES
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	94.2	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	106	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	99.0	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	100	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	109	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	95.2	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	97.2	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	104	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	99.4	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	97.5	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	103	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: 1624623) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	105	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	105	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	97.3	80.0	120	----
Total Metals (QCLot: 1634286)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	97.8	80.0	120	----
Dissolved Metals (QCLot: 1624670)									
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	104	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	105	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	99.2	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	106	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	113	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	99.9	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	105	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	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	103	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	103	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	104	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	114	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	101	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	107	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	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	101	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	104	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	98.5	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	104	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	105	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	95.5	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	107	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	109	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1624670) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	105	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	111	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	107	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	104	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	99.6	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	110	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	113	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	101	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	97.7	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	98.8	80.0	120	----
Speciated Metals (QCLot: 1625000)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.25 mg/L	102	80.0	120	----
Volatile Organic Compounds (QCLot: 1631195)									
Benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	94.4	70.0	130	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	100 µg/L	92.4	70.0	130	----
Bromoform	75-25-2	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	100 µg/L	104	70.0	130	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Chloroethane	75-00-3	E611C	0.5	µg/L	100 µg/L	112	60.0	140	----
Chloroform	67-66-3	E611C	0.5	µg/L	100 µg/L	96.1	70.0	130	----
Chloromethane	74-87-3	E611C	5	µg/L	100 µg/L	106	60.0	140	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	104	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	100 µg/L	105	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	100 µg/L	106	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	90.6	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	100 µg/L	95.7	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	100 µg/L	91.2	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	90.8	70.0	130	----
Dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	91.9	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	93.4	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	89.8	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: 1631195) - continued									
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	90.7	70.0	130	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	100 µg/L	105	70.0	130	----
Styrene	100-42-5	E611C	0.5	µg/L	100 µg/L	103	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	93.0	70.0	130	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	99.9	70.0	130	----
Toluene	108-88-3	E611C	0.4	µg/L	100 µg/L	102	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	100 µg/L	105	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	92.8	70.0	130	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	95.2	70.0	130	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	100 µg/L	129	60.0	140	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	100 µg/L	114	60.0	140	----
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	200 µg/L	102	70.0	130	----
Xylene, o-	95-47-6	E611C	0.3	µg/L	100 µg/L	101	70.0	130	----
Hydrocarbons (QCLot: 1631166)									
EPH (C10-C19)	----	E601A	250	µg/L	6490 µg/L	101	70.0	130	----
EPH (C19-C32)	----	E601A	250	µg/L	3360 µg/L	107	70.0	130	----
Hydrocarbons (QCLot: 1631193)									
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	81.6	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1631167)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.5 µg/L	101	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.5 µg/L	110	60.0	130	----
Acridine	260-94-6	E641A	0.01	µg/L	0.5 µg/L	86.4	60.0	130	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.5 µg/L	108	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.5 µg/L	106	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.5 µg/L	103	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.5 µg/L	104	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.5 µg/L	109	60.0	130	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.5 µg/L	101	60.0	130	----
Chrysene	218-01-9	E641A	0.01	µg/L	0.5 µg/L	109	60.0	130	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.5 µg/L	107	60.0	130	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.5 µg/L	106	60.0	130	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.5 µg/L	104	60.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1631167) - continued									
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.5 µg/L	104	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.5 µg/L	92.4	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.5 µg/L	94.5	60.0	130	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.5 µg/L	83.8	50.0	130	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.5 µg/L	113	60.0	130	----
Pyrene	129-00-0	E641A	0.01	µg/L	0.5 µg/L	105	60.0	130	----
Quinoline	91-22-5	E641A	0.05	µg/L	0.5 µg/L	87.6	60.0	130	----
Glycols (QCLot: 1626524)									
Diethylene glycol	111-46-6	E680E	5	mg/L	25 mg/L	104	70.0	130	----
Ethylene glycol	107-21-1	E680E	5	mg/L	25 mg/L	103	70.0	130	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	25 mg/L	100	70.0	130	----
Triethylene glycol	112-27-6	E680E	5	mg/L	25 mg/L	105	70.0	130	----

Qualifiers

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

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: 1621357)										
VA24C1732-002	Anonymous	Fluoride	16984-48-8	E235.F	0.964 mg/L	1 mg/L	96.4	75.0	125	----
Anions and Nutrients (QCLot: 1621358)										
VA24C1732-002	Anonymous	Chloride	16887-00-6	E235.Cl	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1621359)										
VA24C1732-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.504 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1621360)										
VA24C1732-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.51 mg/L	2.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1621361)										
VA24C1732-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.510 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1621362)										
VA24C1732-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	99.8 mg/L	100 mg/L	99.8	75.0	125	----
Anions and Nutrients (QCLot: 1628093)										
FJ2402564-002	Anonymous	Nitrogen, total	7727-37-9	E366	0.386 mg/L	0.4 mg/L	96.6	70.0	130	----
Anions and Nutrients (QCLot: 1628094)										
FJ2402564-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0464 mg/L	0.05 mg/L	92.7	70.0	130	----
Anions and Nutrients (QCLot: 1628095)										
FJ2402564-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	----	----		75.0	125	----
Organic / Inorganic Carbon (QCLot: 1628099)										
FJ2402564-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	5.01 mg/L	5 mg/L	100	70.0	130	----
Total Sulfides (QCLot: 1630069)										
CG2412245-004	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.209 mg/L	0.2 mg/L	104	75.0	125	----
Total Metals (QCLot: 1624623)										
VA24C2042-002	Anonymous	Aluminum, total	7429-90-5	E420	0.431 mg/L	0.4 mg/L	108	70.0	130	----
		Antimony, total	7440-36-0	E420	ND mg/L	----	ND	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0431 mg/L	0.04 mg/L	108	70.0	130	----
		Barium, total	7440-39-3	E420	0.0388 mg/L	0.04 mg/L	97.1	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0788 mg/L	0.08 mg/L	98.5	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0176 mg/L	0.02 mg/L	88.2	70.0	130	----
		Boron, total	7440-42-8	E420	ND mg/L	----	ND	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00774 mg/L	0.008 mg/L	96.8	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0782 mg/L	0.08 mg/L	97.7	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1624623) - continued										
VA24C2042-002	Anonymous	Cobalt, total	7440-48-4	E420	0.0383 mg/L	0.04 mg/L	95.8	70.0	130	----
		Copper, total	7440-50-8	E420	ND mg/L	----	ND	70.0	130	----
		Iron, total	7439-89-6	E420	3.89 mg/L	4 mg/L	97.2	70.0	130	----
		Lead, total	7439-92-1	E420	0.0355 mg/L	0.04 mg/L	88.7	70.0	130	----
		Lithium, total	7439-93-2	E420	ND mg/L	----	ND	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	ND mg/L	----	ND	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0761 mg/L	0.08 mg/L	95.1	70.0	130	----
		Phosphorus, total	7723-14-0	E420	21.5 mg/L	20 mg/L	108	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0384 mg/L	0.04 mg/L	95.9	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0813 mg/L	0.08 mg/L	102	70.0	130	----
		Silicon, total	7440-21-3	E420	20.9 mg/L	20 mg/L	104	70.0	130	----
		Silver, total	7440-22-4	E420	0.00775 mg/L	0.008 mg/L	96.9	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	----	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	----	ND	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0828 mg/L	0.08 mg/L	104	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00721 mg/L	0.008 mg/L	90.1	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0300 mg/L	0.04 mg/L	75.0	70.0	130	----
		Tin, total	7440-31-5	E420	0.0417 mg/L	0.04 mg/L	104	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0899 mg/L	0.08 mg/L	112	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0384 mg/L	0.04 mg/L	95.9	70.0	130	----
		Uranium, total	7440-61-1	E420	ND mg/L	----	ND	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.207 mg/L	0.2 mg/L	104	70.0	130	----
		Zinc, total	7440-66-6	E420	0.778 mg/L	0.8 mg/L	97.2	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0799 mg/L	0.08 mg/L	99.9	70.0	130	----
Total Metals (QCLot: 1634286)										
VA24C2046-004	Anonymous	Mercury, total	7439-97-6	E508	ND mg/L	----	ND	70.0	130	----
Dissolved Metals (QCLot: 1624670)										
VA24C2095-002	WLNG DS 1	Aluminum, dissolved	7429-90-5	E421	0.194 mg/L	0.2 mg/L	97.3	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0189 mg/L	0.02 mg/L	94.4	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	0.0188 mg/L	0.02 mg/L	94.1	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.0105 mg/L	0.01 mg/L	105	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.098 mg/L	0.1 mg/L	97.8	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00393 mg/L	0.004 mg/L	98.2	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00953 mg/L	0.01 mg/L	95.3	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0397 mg/L	0.04 mg/L	99.3	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0196 mg/L	0.02 mg/L	98.2	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: 1624670) - continued										
VA24C2095-002	WLNG DS 1	Copper, dissolved	7440-50-8	E421	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.96 mg/L	2 mg/L	97.9	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0209 mg/L	0.02 mg/L	104	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0961 mg/L	0.1 mg/L	96.1	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0198 mg/L	0.02 mg/L	99.2	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0189 mg/L	0.02 mg/L	94.4	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0391 mg/L	0.04 mg/L	97.8	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.95 mg/L	10 mg/L	99.5	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.62 mg/L	4 mg/L	90.5	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.60 mg/L	10 mg/L	96.0	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00376 mg/L	0.004 mg/L	94.1	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	20.4 mg/L	20 mg/L	102	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0400 mg/L	0.04 mg/L	100	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00408 mg/L	0.004 mg/L	102	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0374 mg/L	0.04 mg/L	93.6	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00420 mg/L	0.004 mg/L	105	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0997 mg/L	0.1 mg/L	99.7	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.394 mg/L	0.4 mg/L	98.6	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0380 mg/L	0.04 mg/L	95.1	70.0	130	----
Dissolved Metals (QCLot: 1633830)										
VA24C2043-011	Anonymous	Mercury, dissolved	7439-97-6	E509	0.000102 mg/L	0 mg/L	102	70.0	130	----
Speciated Metals (QCLot: 1625000)										
VA24C2095-002	WLNG DS 1	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.263 mg/L	0.25 mg/L	105	70.0	130	----
Volatile Organic Compounds (QCLot: 1631195)										
VA24C2095-003	WLNG Penstock	Benzene	71-43-2	E611C	99.1 µg/L	100 µg/L	99.1	60.0	140	----
		Bromodichloromethane	75-27-4	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Bromoform	75-25-2	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Carbon tetrachloride	56-23-5	E611C	108 µg/L	100 µg/L	108	60.0	140	----
		Chlorobenzene	108-90-7	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Chloroethane	75-00-3	E611C	113 µg/L	100 µg/L	113	50.0	150	----
		Chloroform	67-66-3	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Chloromethane	74-87-3	E611C	103 µg/L	100 µg/L	103	50.0	150	----
		Dibromochloromethane	124-48-1	E611C	105 µg/L	100 µg/L	105	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	103 µg/L	100 µg/L	103	60.0	140	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1631195) - continued										
VA24C2095-003	WLNG Penstock	Dichlorobenzene, 1,4-	106-46-7	E611C	104 µg/L	100 µg/L	104	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611C	108 µg/L	100 µg/L	108	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611C	98.0 µg/L	100 µg/L	98.0	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	97.2 µg/L	100 µg/L	97.2	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	95.4 µg/L	100 µg/L	95.4	60.0	140	----
		Dichloromethane	75-09-2	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	97.3 µg/L	100 µg/L	97.3	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	95.0 µg/L	100 µg/L	95.0	60.0	140	----
		Ethylbenzene	100-41-4	E611C	99.4 µg/L	100 µg/L	99.4	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	104 µg/L	100 µg/L	104	60.0	140	----
		Styrene	100-42-5	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	95.5 µg/L	100 µg/L	95.5	60.0	140	----
		Tetrachloroethylene	127-18-4	E611C	98.7 µg/L	100 µg/L	98.7	60.0	140	----
		Toluene	108-88-3	E611C	99.8 µg/L	100 µg/L	99.8	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	109 µg/L	100 µg/L	109	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	98.1 µg/L	100 µg/L	98.1	60.0	140	----
		Trichloroethylene	79-01-6	E611C	100 µg/L	100 µg/L	100	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611C	135 µg/L	100 µg/L	135	50.0	150	----
		Vinyl chloride	75-01-4	E611C	109 µg/L	100 µg/L	109	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	99.8 µg/L	100 µg/L	99.8	60.0	140	----
Hydrocarbons (QCLot: 1631193)										
VA24C2180-001	Anonymous	VHw (C6-C10)	----	E581.VH+F1	4600 µg/L	6310 µg/L	72.8	60.0	140	----

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free:

Affix ALS barcode label here (lab use only)

COC Number: 17 -

Page 1 of

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

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

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

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

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

Date and Time Required for all E&P TATs: 4 Sept 2024

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

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

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

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

Analysis Request

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

ALS Sample # (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	Glycols	VOC/VPH	EPH, PAH, LEPH/HEPH	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
					F						P	P			F/P						
	WLNG US 1	27-Aug-24	09:39	Water	R	R	R	R	R	R	R	R	R	R	R					N	9
	pH: 7.01 cond: 342 µS/cm temp: 14.6 °C																				
	WLNG DS 1	27 Aug 24	10:39	Water	R	R	R	R	R	R	R	R	R	R	R					N	9
	pH: 7.31 cond: 230 µS/cm temp: 15.7 °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~~	~~6~~
	WLNG Penstock	27 Aug 24	11:45	Water	R	R	R	R	R	R	R	R	R	R	R	R	R	R		N	15
	pH: 7.68 cond: 19 µS/cm temp: 15.1 °C																				

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteri
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
	10.4

RELEASE (client use)				FINAL SHIPMENT RECEPTION (lab use only)			
27 Aug 24	Time: 17:30	Received by:		Time:	Received by:	Date: Aug-27	Time: 17:30

Environmental Division
Vancouver
Work Order Reference
VA24C2095

Telephone : +1 604 253 4188

IONS AND SAMPLING INFORMATION

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the c
1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW

ELLOW - CLIENT COPY

conditions as specified on the back page of the white - report copy.

SEPT 2017 FRONT

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Table of Contents:

Appendices:

1. Executive Summary and Field Notes:

FKM did not discharge on August 26 and 27, resuming discharge on August 28. On August 30 at 09:45, the temperature probe in the Water Treatment Plant (WTP) stopped functioning. FKM responded by manually checking the temperature with a YSI device and monitoring data from the downstream sondes. The discharged water remained within guideline limits for the week. All relevant parameters were measured using YSI instruments and WTP probes. The total discharge volume up to August 26th was 2068 m³.

Daily Volume Summary:

Table 1. Discharge Volumes Daily Summary

Date	Location	Volume (m3)	Comments
August 26	WoodFibre (WF)	0	N/A
August 27	WF	0	N/A
August 28	WF	290	N/A
August 29	WF	53	N/A
August 30	WF	136	N/A
August 31	WF	302	N/A
September 1	WF	229	N/A
Total		1017	N/A

2. Discharge Parameter Summary:

Table 2. Discharge Event Summary

Date	Time	pH	Flow (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/28/2024	15:15:00	7.4	0.63	0	2,068	17.3	277
8/28/2024	15:30:00	7.4	0.63	0	2,080	17.3	279
8/28/2024	15:45:00	7.5	0.633	0	2,091	17.4	279
8/28/2024	16:00:00	7.5	0.627	0	2,103	17.4	279
8/28/2024	16:15:00	7.5	0.615	0	2,115	17.4	281
8/28/2024	16:30:00	7.6	0.606	0	2,126	17.3	281
8/28/2024	16:45:00	7.7	0.423	0	2,137	17.3	281
8/28/2024	18:00:00	7.7	1.035	0	2,154	18.1	282
8/28/2024	18:15:00	7.7	0.993	0	2,174	18	281
8/28/2024	18:30:00	7.7	1.002	0	2,193	18	282
8/28/2024	18:45:00	7.7	0.966	0	2,211	17.9	282
8/28/2024	21:00:00	7.4	0.72	0	2,216	17.5	284
8/28/2024	21:15:00	7	0.714	0	2,229	17.5	284
8/28/2024	21:30:00	7	0.714	0	2,243	17.5	286
8/28/2024	21:45:00	7.1	0.696	0	2,256	17.4	285
8/28/2024	22:00:00	6.9	0.696	0	2,269	17.4	287
8/28/2024	22:15:00	7	0.675	0	2,282	17.3	287
8/28/2024	22:30:00	7.2	0.681	0	2,295	17.1	288

Date	Time	pH	Flow (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/28/2024	22:45:00	6.9	0.684	0	2,308	16.9	288
8/28/2024	23:00:00	7.2	0.669	0	2,321	16.7	288
8/28/2024	23:15:00	6.7	0.669	0	2,334	16.4	288
8/28/2024	23:30:00	7.1	0.666	0	2,346	16.1	288
8/29/2024	6:15:00	6.8	0.561	2	2,352	14.8	267
8/29/2024	6:30:00	7	0.561	2.4	2,363	14.7	267
8/29/2024	6:45:00	7.2	0.546	2.4	2,373	14.7	267
8/29/2024	7:00:00	6.8	0.471	3	2,382	14.6	267
8/29/2024	7:15:00	7.2	0.429	3.1	2,391	14.4	267
8/29/2024	7:30:00	6.7	0.465	3.4	2,400	14.3	267
8/30/2024	9:45:00	7.6	0.693	1.4	2,416	-3.3	273
8/30/2024	10:00:00	7.6	0.678	0	2,428	-3.3	273
8/30/2024	10:15:00	7.6	0.627	0	2,441	-3.3	273
8/30/2024	10:30:00	7.7	0.588	0.1	2,452	-3.3	272
8/30/2024	10:45:00	7.7	0.585	0.7	2,463	-3.3	272
8/30/2024	11:00:00	7.7	0.564	1.4	2,474	-3.3	272
8/30/2024	12:30:00	7.7	0.621	0	2,494	-3.3	272
8/30/2024	12:45:00	7.7	0.606	0.1	2,506	-3.3	274
8/30/2024	13:00:00	7.7	0.588	0.2	2,517	-3.3	272
8/30/2024	13:30:00	7.7	0.585	0	2,526	-3.3	273
8/30/2024	13:45:00	7.7	0.576	0	2,537	-3.3	273

Date	Time	pH	Flow (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/31/2024	0:45:00	7.4	0.282	0	2,540	-3.3	285
8/31/2024	1:00:00	7.4	0.33	1.3	2,546	-3.3	287
8/31/2024	1:15:00	7.4	0.327	0	2,552	-3.3	287
8/31/2024	1:30:00	7.4	0.321	4.6	2,558	-3.3	290
8/31/2024	1:45:00	7.4	0.324	0.8	2,564	-3.3	290
8/31/2024	2:00:00	7.4	0.321	0.7	2,570	-3.3	291
8/31/2024	2:15:00	7.3	0.321	0.5	2,576	-3.3	292
8/31/2024	2:30:00	7.3	0.315	0.5	2,582	-3.3	291
8/31/2024	2:45:00	7.3	0.315	0.5	2,588	-3.3	291
8/31/2024	14:00:00	7.1	0.585	0.8	2,597	106.3	309
8/31/2024	14:15:00	7.1	0.6	1.7	2,608	106.3	309
8/31/2024	14:30:00	7.2	0.6	0	2,620	106.3	309
8/31/2024	14:45:00	7	0.603	0	2,631	106.3	309
8/31/2024	15:00:00	7.3	0.591	0	2,643	106.3	309
8/31/2024	15:15:00	7.1	0.588	1.1	2,654	106.3	311
8/31/2024	16:00:00	7.3	0.555	0	2,666	106.3	307
8/31/2024	16:15:00	7.2	0.546	0	2,676	106.3	307
8/31/2024	16:30:00	7.3	0.546	0	2,686	106.3	307
8/31/2024	16:45:00	7.4	0.528	0	2,697	106.3	307
8/31/2024	17:00:00	7.4	0.537	0	2,707	106.3	307
8/31/2024	17:15:00	7.5	0.537	0	2,717	106.3	308

Date	Time	pH	Flow (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/31/2024	17:30:00	7.6	0	0.5	2,723	106.3	308
8/31/2024	18:30:00	7.2	0.579	2.9	2,731	106.3	303
8/31/2024	18:45:00	7.2	0.594	2.7	2,742	106.3	303
8/31/2024	19:00:00	7	0.651	5.4	2,754	106.3	303
8/31/2024	19:15:00	7.3	0.648	2.7	2,766	106.3	303
8/31/2024	19:30:00	7.2	0.588	2.4	2,778	106.3	303
8/31/2024	19:45:00	7.1	0.585	1.4	2,789	106.3	304
8/31/2024	20:00:00	7.3	0.576	0	2,800	106.3	304
8/31/2024	22:45:00	7	0.411	1.3	2,810	106.3	302
8/31/2024	23:00:00	7.3	0.414	0.7	2,818	106.3	299
8/31/2024	23:15:00	7	0.408	1.1	2,826	106.3	299
8/31/2024	23:30:00	7.1	0.417	0.9	2,833	106.3	298
8/31/2024	23:45:00	7.3	0.402	0.4	2,841	106.3	298
9/1/2024	0:00:00	6.9	0.408	0.6	2,848	106.3	300
9/1/2024	0:15:00	7.2	0.414	0	2,856	106.3	299
9/1/2024	0:30:00	7.1	0.351	0.3	2,863	106.3	299
9/1/2024	0:45:00	7	0.333	0.6	2,870	106.3	299
9/1/2024	1:00:00	7.2	0.339	0.2	2,876	106.3	299
9/1/2024	1:15:00	7.2	0.333	0.2	2,882	106.3	299
9/1/2024	1:30:00	6.9	0.33	1.2	2,888	106.3	301
9/1/2024	1:45:00	7.1	0.327	0.5	2,894	106.3	301

Date	Time	pH	Flow (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/1/2024	2:00:00	7.3	0.321	0	2,900	106.3	299
9/1/2024	2:15:00	6.9	0.33	0	2,906	106.3	300
9/1/2024	2:30:00	7	0.321	0	2,913	106.3	299
9/1/2024	2:45:00	7.3	0.321	0	2,919	106.3	299
9/1/2024	4:45:00	6.9	0.393	3.5	2,921	106.3	296
9/1/2024	5:00:00	7	0.384	1.2	2,928	106.3	296
9/1/2024	5:15:00	7	0.369	1.1	2,935	106.3	296
9/1/2024	5:30:00	6.9	0.366	1.1	2,942	106.3	296
9/1/2024	5:45:00	7.5	0.366	1.3	2,948	106.3	294
9/1/2024	6:00:00	7.1	0.336	1.7	2,954	106.3	294
9/1/2024	6:15:00	6.9	0.324	1.7	2,961	106.3	296
9/1/2024	6:30:00	7.1	0.33	1.3	2,967	106.3	294
9/1/2024	6:45:00	7.3	0.324	0.6	2,973	106.3	294
9/1/2024	7:00:00	7.1	0.324	0.4	2,979	106.3	294
9/1/2024	7:15:00	6.9	0.318	0.6	2,985	106.3	296
9/1/2024	7:30:00	7.1	0.321	0.1	2,991	106.3	296
9/1/2024	7:45:00	7.3	0.312	0	2,997	106.3	296
9/1/2024	8:00:00	7.1	0.312	0	3,003	106.3	294
9/1/2024	8:15:00	6.9	0.315	0.5	3,010	106.3	294
9/1/2024	8:30:00	7.1	0.315	0.8	3,016	106.3	294
9/1/2024	9:30:00	7.2	0.345	4.6	3,023	106.3	293

Date	Time	pH	Flow (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/1/2024	15:45:00	7.2	0.333	0	3,035	106.3	286
9/1/2024	16:00:00	7	0.327	0	3,041	106.3	286
9/1/2024	16:15:00	7.2	0.324	0	3,047	106.3	285
9/1/2024	16:30:00	7.3	0.315	0	3,053	106.3	285
9/1/2024	16:45:00	7.1	0.327	0	3,059	106.3	287
9/1/2024	17:00:00	7.1	0.318	0	3,065	106.3	288
9/1/2024	23:15:00	7.3	0.423	3.4	3,074	106.3	287

Table 3. In-Situ Parameters

Date	Time	Temperature (°C)	DO (mg/L)	Conductivity (uS/cm)	Salinity (ppt)	ORP (mV)
8/28/2024	03:04:59PM	17.0	8.72	156.4	0.07	209.6
8/29/2024	04:36:00PM	17.4	8.37	151.4	0.07	199.3
8/30/2024	09:29:00PM	17.6	8.01	142.4	0.07	245.9
8/31/2024	07:13:11PM	18.4	8.55	201.8	0.1	273.1
9/1/2024	00:13:10AM	17.6	8.74	144.6	0.07	283.1

3. Calibration Log:

Table 4. Calibration Log

Date	Unit	pH	Conductivity/Temp.	Salinity	NTU
8/29/2024	YSI	✓	✓	✓	✓
8/29/2024	WTP	✓	✓	N/A	✓

APPENDIX A: WTP LOG

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/26/2024	0:00:00	6.9	0	64.9	2060.463	Open	Closed	16.8	281
8/26/2024	0:15:00	7	0.147	61.1	2060.463	Open	Closed	16.7	281
8/26/2024	0:30:00	7.2	0	40.7	2060.463	Open	Closed	16.5	282
8/26/2024	0:45:00	7.2	0	39.5	2060.463	Open	Closed	16.7	283
8/26/2024	1:00:00	7.3	0	46.2	2060.463	Open	Closed	16.4	283
8/26/2024	1:15:00	7.2	0.186	60.5	2060.463	Open	Closed	16.4	280
8/26/2024	1:30:00	7.3	0	16.3	2060.463	Open	Closed	16.3	281
8/26/2024	1:45:00	7.3	0	9.5	2060.463	Open	Closed	16.5	281
8/26/2024	2:00:00	6.9	0	34.6	2060.463	Open	Closed	16.3	281
8/26/2024	2:15:00	6.9	0	25.9	2060.463	Open	Closed	16.4	281
8/26/2024	2:30:00	7.2	0.303	26.8	2060.463	Open	Closed	16.1	279
8/26/2024	2:45:00	7.2	0	10.8	2060.463	Open	Closed	16.1	279

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/26/2024	3:00:00	7.2	0.102	58.6	2060.463	Open	Closed	16.1	279
8/26/2024	3:15:00	6.9	0	63.3	2060.463	Open	Closed	15.8	279
8/26/2024	3:30:00	6.9	0	62.1	2060.463	Open	Closed	15.8	279
8/26/2024	3:45:00	7.2	0.372	140.7	2060.463	Open	Closed	15.8	279
8/26/2024	4:00:00	7.3	0	118.7	2060.463	Open	Closed	15.9	280
8/26/2024	4:15:00	7.3	0	117.3	2060.463	Open	Closed	16.1	281
8/26/2024	4:30:00	7	0.249	106.5	2060.463	Open	Closed	15.9	279
8/26/2024	4:45:00	7	0	74	2060.463	Open	Closed	15.9	281
8/26/2024	5:00:00	7	0	71.5	2060.463	Open	Closed	16.1	280
8/26/2024	5:15:00	7.1	0	49.6	2060.463	Open	Closed	15.9	281
8/26/2024	5:30:00	7.2	0	39.1	2060.463	Open	Closed	15.8	280
8/26/2024	5:45:00	7.1	0	296.7	2060.463	Open	Closed	15.8	280
8/26/2024	6:00:00	7.3	0	26.9	2060.463	Open	Closed	15.6	282

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/26/2024	6:15:00	7.2	0	78.8	2060.463	Open	Closed	15.6	282
8/26/2024	6:30:00	6.7	0	60.1	2060.463	Open	Closed	15.5	281
8/26/2024	6:45:00	6.7	0	58.7	2060.463	Open	Closed	15.7	284
8/26/2024	7:00:00	6.7	0	56.7	2060.463	Open	Closed	15.9	284
8/26/2024	7:15:00	6.8	0	148.7	2060.463	Open	Closed	15.6	286
8/26/2024	7:30:00	7.1	0	31.8	2060.463	Open	Closed	15.4	283
8/26/2024	7:45:00	7.1	0	26.9	2060.463	Open	Closed	15.7	286
8/26/2024	8:00:00	7.1	0	26.8	2060.463	Open	Closed	15.9	286
8/26/2024	8:15:00	7.1	0	25.3	2060.463	Open	Closed	16	286
8/26/2024	8:30:00	7.1	0	25.8	2060.463	Open	Closed	16.2	286
8/26/2024	8:45:00	7.1	0	25.7	2060.463	Open	Closed	16.3	286
8/26/2024	9:00:00	7.1	0	25.2	2060.463	Open	Closed	16.4	286
8/26/2024	9:15:00	7	0	23.1	2060.463	Open	Closed	16.5	286

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/26/2024	9:30:00	7	0	24	2060.463	Open	Closed	16.6	286
8/26/2024	9:45:00	7	0	20.9	2060.463	Open	Closed	16.7	286
8/26/2024	10:00:00	7	0	20.6	2060.463	Open	Closed	16.7	287
8/26/2024	10:15:00	7	0	20.6	2060.463	Open	Closed	16.8	287
8/26/2024	10:30:00	7.3	0.621	19.7	2060.463	Open	Closed	15.4	284
8/26/2024	10:45:00	6.9	0.615	115.1	2060.463	Open	Closed	15.4	282
8/26/2024	11:00:00	7.1	0.552	29.3	2060.463	Open	Closed	15.6	282
8/26/2024	11:15:00	7.2	0.552	15.7	2060.463	Open	Closed	15.6	281
8/26/2024	11:30:00	7.2	0.552	35.9	2060.463	Open	Closed	15.7	281
8/26/2024	11:45:00	7.2	0.357	42.5	2060.463	Open	Closed	15.7	278
8/26/2024	12:00:00	7.2	0.285	37.7	2060.463	Open	Closed	15.7	278
8/26/2024	12:15:00	7.1	0.657	66.7	2060.463	Open	Closed	15.7	274
8/26/2024	12:30:00	7	0.471	94.9	2060.463	Open	Closed	15.8	274

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/26/2024	12:45:00	7.2	0.387	58.8	2060.463	Open	Closed	16	274
8/26/2024	13:00:00	7.2	0.69	48.4	2060.463	Open	Closed	16.1	274
8/26/2024	13:15:00	7.1	0.369	160.5	2060.463	Open	Closed	16.2	273
8/26/2024	13:30:00	7.2	0.777	121	2060.463	Open	Closed	16.5	272
8/26/2024	13:45:00	7.2	0.417	76.4	2060.463	Open	Closed	16.8	273
8/26/2024	14:00:00	6.9	0.621	169.4	2060.463	Open	Closed	17	273
8/26/2024	14:15:00	7.1	0.678	97	2060.463	Open	Closed	17.1	277
8/26/2024	14:30:00	7.2	4.752	407.8	2060.463	Open	Closed	17.2	276
8/26/2024	14:45:00	6.9	0.642	390.2	2060.463	Open	Closed	17.2	273
8/26/2024	15:00:00	7	0.66	101.4	2060.463	Open	Closed	17.3	273
8/26/2024	15:15:00	7.2	0.537	102	2060.463	Open	Closed	17.4	273
8/26/2024	15:30:00	7.1	0.735	67.3	2060.463	Open	Closed	17.5	273
8/26/2024	15:45:00	7	0.75	59.9	2060.463	Open	Closed	17.5	273

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/26/2024	16:00:00	7.2	0.507	60.5	2060.463	Open	Closed	17.5	273
8/26/2024	16:15:00	7	0.723	51.5	2060.463	Open	Closed	17.5	275
8/26/2024	16:30:00	7	0.642	40	2060.463	Open	Closed	17.5	274
8/26/2024	16:45:00	7.2	0.444	32.6	2060.463	Open	Closed	17.4	274
8/26/2024	17:00:00	7.2	0.66	16.2	2060.463	Open	Closed	17.3	275
8/26/2024	17:15:00	7.2	0.636	19.4	2060.463	Open	Closed	17.2	275
8/26/2024	17:30:00	7.2	0.399	48.6	2060.463	Open	Closed	17.2	273
8/26/2024	17:45:00	7.2	0.645	35.6	2060.463	Open	Closed	17.1	273
8/26/2024	18:00:00	7.2	0.942	406.2	2060.463	Open	Closed	17.1	273
8/26/2024	18:15:00	7.2	0	181.8	2060.463	Open	Closed	17.1	273
8/26/2024	18:30:00	7.1	0.591	140.1	2060.463	Open	Closed	17.1	273
8/26/2024	18:45:00	7.3	0	260.2	2060.463	Open	Closed	17	274
8/26/2024	19:00:00	7	0.792	237.5	2060.463	Open	Closed	17	274

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/26/2024	19:15:00	7.1	0.675	259.4	2060.463	Open	Closed	17	278
8/26/2024	19:30:00	6.9	0.804	251.2	2060.463	Open	Closed	16.9	274
8/26/2024	19:45:00	7.2	0.78	149.2	2060.463	Open	Closed	16.8	277
8/26/2024	20:00:00	7.1	0	173.8	2060.463	Open	Closed	16.8	278
8/26/2024	20:15:00	7.1	0	122.2	2060.463	Open	Closed	16.9	274
8/26/2024	20:30:00	6.9	0.699	371.2	2060.463	Open	Closed	16.7	278
8/26/2024	20:45:00	7.1	0	120.1	2060.463	Open	Closed	16.5	276
8/26/2024	21:00:00	7.1	0	113.3	2060.463	Open	Closed	16.7	276
8/26/2024	21:15:00	7.2	0.702	98.2	2060.463	Open	Closed	16.3	274
8/26/2024	21:30:00	7.2	0	61.7	2060.463	Open	Closed	16.3	275
8/26/2024	21:45:00	6.9	0.636	116.2	2060.463	Open	Closed	16	273
8/26/2024	22:00:00	7	0	69.1	2060.463	Open	Closed	16.3	273
8/26/2024	22:15:00	7	0	53.7	2060.463	Open	Closed	16.8	273

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Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/26/2024	22:30:00	7.2	0.141	66.9	2060.463	Open	Closed	15.9	273
8/26/2024	22:45:00	7.1	0.825	133.1	2060.463	Open	Closed	15.6	271
8/26/2024	23:00:00	7.2	0	105.8	2060.463	Open	Closed	15.6	271
8/26/2024	23:15:00	7.1	0.804	91.8	2060.463	Open	Closed	15.6	271
8/26/2024	23:30:00	7.3	0	66.3	2060.463	Open	Closed	15.6	271
8/26/2024	23:45:00	6.8	0	90.9	2060.463	Open	Closed	15.8	272
8/27/2024	0:00:00	7.2	0.804	92.5	2060.463	Open	Closed	15.6	272
8/27/2024	0:15:00	7.2	0.552	147.1	2060.463	Open	Closed	15.7	272
8/27/2024	0:30:00	7.2	0	75.9	2060.463	Open	Closed	15.6	269
8/27/2024	0:45:00	7.1	0	61.3	2060.463	Open	Closed	15.8	271
8/27/2024	1:00:00	7.3	0.969	147.8	2060.463	Open	Closed	15.8	270
8/27/2024	1:15:00	7.2	1.38	233.5	2060.463	Open	Closed	15.6	268
8/27/2024	1:30:00	7.2	0.708	408.3	2060.463	Open	Closed	15.7	268

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/27/2024	1:45:00	7.3	1.155	345	2060.463	Open	Closed	15.7	268
8/27/2024	2:00:00	7.3	1.287	408.3	2060.463	Open	Closed	15.8	269
8/27/2024	2:15:00	7.3	0.822	403.8	2060.463	Open	Closed	15.9	269
8/27/2024	2:30:00	7.2	0.828	362.2	2060.463	Open	Closed	15.8	269
8/27/2024	2:45:00	7.3	0.57	345.3	2060.463	Open	Closed	15.9	269
8/27/2024	3:00:00	7.3	0.342	326.8	2060.463	Open	Closed	15.9	269
8/27/2024	3:15:00	7.3	0.198	272.5	2060.463	Open	Closed	16	268
8/27/2024	3:30:00	7.3	1.002	407.4	2060.463	Open	Closed	16.1	266
8/27/2024	3:45:00	7.4	0.993	406.2	2060.463	Open	Closed	16.2	267
8/27/2024	4:00:00	7.3	0.552	399.3	2060.463	Open	Closed	16.3	265
8/27/2024	4:15:00	7.3	0	286.8	2060.463	Open	Closed	16.3	266
8/27/2024	4:30:00	7.3	0.228	326.2	2060.463	Open	Closed	16.2	268
8/27/2024	4:45:00	7.4	0.849	327.1	2060.463	Open	Closed	15.8	268

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Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/27/2024	5:00:00	7.4	0.855	261.7	2060.463	Open	Closed	16	267
8/27/2024	5:15:00	7.4	0	282.6	2060.463	Open	Closed	16.2	269
8/27/2024	5:30:00	7.4	0	172.1	2060.463	Open	Closed	16.2	269
8/27/2024	5:45:00	7.3	0	154.1	2060.463	Open	Closed	16.8	269
8/27/2024	6:00:00	7.3	0	149.7	2060.463	Open	Closed	17.5	271
8/27/2024	6:15:00	7.3	0	153.5	2060.463	Open	Closed	18.5	272
8/27/2024	6:30:00	7.3	0	146.6	2060.463	Open	Closed	19.5	273
8/27/2024	6:45:00	7.4	0.837	160.5	2060.463	Open	Closed	18.7	273
8/27/2024	7:00:00	7.6	0.834	154.4	2060.463	Open	Closed	15.5	269
8/27/2024	7:15:00	7.6	0.834	178.6	2060.463	Open	Closed	15.7	269
8/27/2024	7:30:00	7.6	0	153.3	2060.463	Open	Closed	15.9	273
8/27/2024	7:45:00	7.5	0	133.9	2060.463	Open	Closed	16.4	269
8/27/2024	8:00:00	7.5	0	137.4	2060.463	Open	Closed	16.8	272

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/27/2024	8:15:00	7.5	0	124.1	2060.463	Open	Closed	17.2	272
8/27/2024	8:30:00	7.5	0	125.4	2060.463	Open	Closed	17.5	272
8/27/2024	8:45:00	7.5	0	121.1	2060.463	Open	Closed	17.8	273
8/27/2024	9:00:00	7.5	0	118.4	2060.463	Open	Closed	18	274
8/27/2024	9:15:00	7.5	0	114.3	2060.463	Open	Closed	18.2	272
8/27/2024	9:30:00	7.5	0	111.2	2060.463	Open	Closed	18.3	273
8/27/2024	9:45:00	7.5	0	90.6	2060.463	Open	Closed	18.8	276
8/27/2024	10:00:00	7.5	0	95.6	2060.463	Open	Closed	18.9	273
8/27/2024	10:15:00	7.5	0	93.2	2060.463	Open	Closed	19.1	276
8/27/2024	10:30:00	7.5	0	88.1	2060.463	Open	Closed	19.4	274
8/27/2024	10:45:00	7.5	0	85.8	2060.463	Open	Closed	19.5	276
8/27/2024	11:00:00	7.5	0	83.6	2060.463	Open	Closed	19.8	277
8/27/2024	11:15:00	7.4	0.828	118.3	2060.463	Open	Closed	16.5	274

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/27/2024	11:30:00	7.4	0.816	224.9	2060.463	Open	Closed	17.4	276
8/27/2024	11:45:00	7.4	0.765	141.5	2060.463	Open	Closed	17.4	276
8/27/2024	12:00:00	7.4	0.765	134	2060.463	Open	Closed	17.2	276
8/27/2024	12:15:00	7.4	0.756	150.5	2060.463	Open	Closed	17.1	275
8/27/2024	12:30:00	7.4	0.54	168.5	2060.463	Open	Closed	17	277
8/27/2024	12:45:00	7.4	0.537	168.1	2060.463	Open	Closed	16.9	277
8/27/2024	13:00:00	7.4	0.726	165.3	2060.463	Open	Closed	16.8	277
8/27/2024	13:15:00	7.3	0.687	194.8	2060.463	Open	Closed	16.8	274
8/27/2024	13:30:00	7.3	0.681	216.8	2060.463	Open	Closed	16.8	275
8/27/2024	13:45:00	7.2	0.687	322.4	2060.463	Open	Closed	16.9	276
8/27/2024	14:00:00	7.2	0.381	301.9	2060.463	Open	Closed	16.9	276
8/27/2024	14:15:00	7.2	0.318	305.2	2060.463	Open	Closed	16.9	275
8/27/2024	14:30:00	7.2	0.774	325.2	2060.463	Open	Closed	16.8	275

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/27/2024	14:45:00	7.3	0.783	407.5	2060.463	Open	Closed	16.6	274
8/27/2024	15:00:00	7.3	0.807	407.5	2060.463	Open	Closed	16.6	278
8/27/2024	15:15:00	7.3	0.609	339.4	2060.463	Open	Closed	16.6	278
8/27/2024	15:30:00	7.2	0.624	272.7	2060.463	Open	Closed	16.6	278
8/27/2024	15:45:00	7.2	0.813	266.3	2060.463	Open	Closed	16.5	279
8/27/2024	16:00:00	7.2	0.696	219.8	2060.463	Open	Closed	16.4	279
8/27/2024	16:15:00	7.2	0.471	230.9	2060.463	Open	Closed	16.4	278
8/27/2024	16:30:00	7.2	0.693	204.7	2060.463	Open	Closed	16.4	279
8/27/2024	16:45:00	7.2	0.669	205.2	2060.463	Open	Closed	16.3	278
8/27/2024	17:00:00	7.6	0.675	11.6	2060.463	Open	Closed	16.4	278
8/27/2024	17:15:00	7.1	0.666	203.9	2060.463	Open	Closed	16.2	279
8/27/2024	17:30:00	7.1	0.621	199.5	2060.463	Open	Closed	16.2	280
8/27/2024	17:45:00	7	0.531	200.3	2060.463	Open	Closed	16.2	279

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/27/2024	18:00:00	7	0.618	226.1	2060.463	Open	Closed	16.3	279
8/27/2024	18:15:00	7	0.6	242.5	2060.463	Open	Closed	16.2	279
8/27/2024	18:30:00	7	0.618	219.9	2060.463	Open	Closed	16.2	278
8/27/2024	18:45:00	7	0.591	213.4	2060.463	Open	Closed	16.2	278
8/27/2024	19:00:00	7.1	0.651	285.3	2060.463	Open	Closed	16.1	278
8/27/2024	19:15:00	7.2	0.69	282.1	2060.463	Open	Closed	16	278
8/27/2024	19:30:00	7.3	0.765	258.2	2060.463	Open	Closed	15.8	278
8/27/2024	19:45:00	7.3	0.741	235.1	2060.463	Open	Closed	15.7	278
8/27/2024	20:00:00	7.2	0.75	200.3	2060.463	Open	Closed	15.7	281
8/27/2024	20:15:00	7.2	0	171	2060.463	Open	Closed	15.9	281
8/27/2024	20:30:00	7.2	0	165.2	2060.463	Open	Closed	16.2	278
8/27/2024	20:45:00	7.2	0	160.1	2060.463	Open	Closed	16.4	277
8/27/2024	21:00:00	7.2	0	156.4	2060.463	Open	Closed	16.6	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	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/27/2024	21:15:00	7.3	0	145.3	2060.463	Open	Closed	15.6	276
8/27/2024	21:30:00	7.2	0	135.5	2060.463	Open	Closed	15.7	278
8/27/2024	21:45:00	7.2	0	140.6	2060.463	Open	Closed	15.9	276
8/27/2024	22:00:00	7.2	0	135.4	2060.463	Open	Closed	16	277
8/27/2024	22:15:00	7.2	0	134.8	2060.463	Open	Closed	16.1	279
8/27/2024	22:30:00	7.2	0	408.6	2060.463	Open	Closed	15.3	279
8/27/2024	22:45:00	7.3	0	69.9	2060.463	Open	Closed	14.6	277
8/27/2024	23:00:00	7.3	0	77.3	2060.463	Open	Closed	14.8	278
8/27/2024	23:15:00	7.3	0	141.7	2060.463	Open	Closed	14.4	277
8/27/2024	23:30:00	7.3	0	127.9	2060.463	Open	Closed	14.8	277
8/27/2024	23:45:00	7.4	0	90.9	2060.463	Open	Closed	14.3	277
8/28/2024	0:00:00	7.3	0	92.6	2060.463	Open	Closed	15	277
8/28/2024	0:15:00	7.4	0	78	2060.463	Open	Closed	14.2	274

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/28/2024	0:30:00	7.3	0	72.6	2060.463	Open	Closed	14.8	277
8/28/2024	0:45:00	7.3	0.642	80.5	2060.463	Open	Closed	14.6	276
8/28/2024	1:00:00	7.4	0	53	2060.463	Open	Closed	14.7	274
8/28/2024	1:15:00	7.4	0.222	46.7	2060.463	Open	Closed	14	274
8/28/2024	1:30:00	7.4	0	98.3	2060.463	Open	Closed	14.4	274
8/28/2024	1:45:00	7.5	0	83.4	2060.463	Open	Closed	14	276
8/28/2024	2:00:00	7.4	0	58.3	2060.463	Open	Closed	14.5	276
8/28/2024	2:15:00	7.5	0	144.1	2060.463	Open	Closed	14.3	276
8/28/2024	2:30:00	7.6	1.278	407.8	2060.463	Open	Closed	13.6	272
8/28/2024	2:45:00	7.6	0	267.4	2060.463	Open	Closed	13.6	269
8/28/2024	3:00:00	7.5	0	158.6	2060.463	Open	Closed	13.7	267
8/28/2024	3:15:00	7.5	0	134	2060.463	Open	Closed	14	269
8/28/2024	3:30:00	7.5	0	159.4	2060.463	Open	Closed	14.5	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	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/28/2024	3:45:00	7.5	0	104.3	2060.463	Open	Closed	14.5	268
8/28/2024	4:00:00	7.5	0	97.2	2060.463	Open	Closed	15.2	270
8/28/2024	4:15:00	7.4	0	93.6	2060.463	Open	Closed	15.9	268
8/28/2024	4:30:00	7.5	0	59.2	2060.463	Open	Closed	14.3	266
8/28/2024	4:45:00	7.4	0	53.6	2060.463	Open	Closed	15	269
8/28/2024	5:00:00	7.4	0	49.7	2060.463	Open	Closed	15.6	269
8/28/2024	5:15:00	7.6	0	26.5	2060.463	Open	Closed	13.3	267
8/28/2024	5:30:00	7.5	0	19.9	2060.463	Open	Closed	14.2	267
8/28/2024	5:45:00	7.6	0	32.9	2060.463	Open	Closed	13.4	267
8/28/2024	6:00:00	7.5	0	28.7	2060.463	Open	Closed	15.4	268
8/28/2024	6:15:00	7.5	0.27	37.3	2060.463	Open	Closed	13.2	266
8/28/2024	6:30:00	7.6	0	143.2	2060.463	Open	Closed	13.2	269
8/28/2024	6:45:00	7.5	0	123.3	2060.463	Open	Closed	13.4	268

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/28/2024	7:00:00	7.6	0	55.1	2060.463	Open	Closed	13.2	268
8/28/2024	7:15:00	7.5	0.6	64.6	2060.463	Open	Closed	13.2	268
8/28/2024	7:30:00	7.6	0.762	45.6	2060.463	Open	Closed	13	268
8/28/2024	7:45:00	7.6	0	36.2	2060.463	Open	Closed	13.1	270
8/28/2024	8:00:00	7.5	0	27.9	2060.463	Open	Closed	13.3	270
8/28/2024	8:15:00	7.5	0	29.5	2060.463	Open	Closed	13.5	268
8/28/2024	8:30:00	7.6	0.726	47.2	2060.463	Open	Closed	13.1	270
8/28/2024	8:45:00	7.5	0.759	57.2	2060.463	Open	Closed	14.4	269
8/28/2024	9:00:00	7.5	0.738	65.1	2060.463	Open	Closed	15	270
8/28/2024	9:15:00	7.5	0.513	74.3	2060.463	Open	Closed	15.2	271
8/28/2024	9:30:00	7.5	0.711	79.2	2060.463	Open	Closed	15.3	271
8/28/2024	9:45:00	7.5	0.789	79.6	2060.463	Open	Closed	15.4	274
8/28/2024	10:00:00	7.5	0.624	72.6	2060.463	Open	Closed	15.5	274

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/28/2024	10:15:00	7.5	0.615	66	2060.463	Open	Closed	15.7	274
8/28/2024	10:30:00	7.5	0.669	48.9	2060.463	Open	Closed	15.7	274
8/28/2024	10:45:00	7.5	0.468	50.7	2060.463	Open	Closed	15.7	276
8/28/2024	11:00:00	7.5	0.669	48.5	2060.463	Open	Closed	15.6	276
8/28/2024	11:15:00	7.5	0.693	59.5	2060.463	Open	Closed	15.7	276
8/28/2024	11:30:00	7.5	0.573	113.2	2060.463	Open	Closed	15.8	278
8/28/2024	11:45:00	7.5	0.576	115.8	2060.463	Open	Closed	16	278
8/28/2024	12:00:00	7.5	0.756	100.9	2060.463	Open	Closed	16.2	276
8/28/2024	12:15:00	7.3	1.677	406.2	2060.463	Open	Closed	16.3	278
8/28/2024	12:30:00	7.6	1.056	101.9	2060.463	Open	Closed	16.5	278
8/28/2024	12:45:00	7.5	1.074	104.1	2060.463	Open	Closed	16.6	278
8/28/2024	13:00:00	7.6	1.056	86.5	2060.463	Open	Closed	16.5	278
8/28/2024	13:15:00	7.3	0.654	391	2060.463	Open	Closed	16.6	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	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/28/2024	13:30:00	7.5	0.807	54.2	2060.463	Open	Closed	16.8	278
8/28/2024	13:45:00	7.5	0.792	29.2	2060.463	Open	Closed	17	278
8/28/2024	14:00:00	7.4	0.693	20	2060.463	Open	Closed	17.1	278
8/28/2024	14:15:00	7.4	0.633	12.5	2060.463	Open	Closed	17.1	278
8/28/2024	14:30:00	7.4	0.63	7.8	2060.463	Open	Closed	17.1	279
8/28/2024	14:45:00	7.4	0.63	4.9	2060.463	Open	Closed	17.2	279
8/28/2024	15:00:00	7.4	0.621	0	2060.463	Open	Closed	17.2	277
8/28/2024	15:15:00	7.4	0.63	0	2067.66	Closed	Open	17.3	277
8/28/2024	15:30:00	7.4	0.63	0	2079.699	Closed	Open	17.3	279
8/28/2024	15:45:00	7.5	0.633	0	2091.459	Closed	Open	17.4	279
8/28/2024	16:00:00	7.5	0.627	0	2103.139	Closed	Open	17.4	279
8/28/2024	16:15:00	7.5	0.615	0	2114.744	Closed	Open	17.4	281
8/28/2024	16:30:00	7.6	0.606	0	2126.254	Closed	Open	17.3	281

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/28/2024	16:45:00	7.7	0.423	0	2136.891	Closed	Open	17.3	281
8/28/2024	17:00:00	7.6	0.312	42.9	2140.584	Open	Closed	17.5	281
8/28/2024	17:15:00	7.6	0	10.8	2140.584	Open	Closed	17.9	279
8/28/2024	17:30:00	7.8	0	121.9	2140.584	Open	Closed	18.1	282
8/28/2024	17:45:00	7.7	0.891	3.5	2140.584	Open	Closed	18.1	282
8/28/2024	18:00:00	7.7	1.035	0	2154.388	Closed	Open	18.1	282
8/28/2024	18:15:00	7.7	0.993	0	2173.602	Closed	Open	18	281
8/28/2024	18:30:00	7.7	1.002	0	2192.547	Closed	Open	18	282
8/28/2024	18:45:00	7.7	0.966	0	2210.926	Closed	Open	17.9	282
8/28/2024	19:00:00	7.8	0.828	0	2213.054	Open	Closed	17.7	282
8/28/2024	19:15:00	7.8	0.639	0	2213.054	Open	Closed	17.6	284
8/28/2024	19:30:00	7.8	0.63	0	2213.054	Open	Closed	17.6	284
8/28/2024	19:45:00	7.8	0	0	2213.054	Open	Closed	17.7	285

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/28/2024	20:00:00	7.7	0	0	2213.054	Open	Closed	17.9	288
8/28/2024	20:15:00	7.6	0	0	2213.054	Open	Closed	18.1	287
8/28/2024	20:30:00	7.7	0.621	0	2213.054	Open	Closed	17.6	287
8/28/2024	20:45:00	7.7	0.666	0	2213.054	Open	Closed	17.6	285
8/28/2024	21:00:00	7.4	0.72	0	2215.605	Closed	Open	17.5	284
8/28/2024	21:15:00	7	0.714	0	2229.213	Closed	Open	17.5	284
8/28/2024	21:30:00	7	0.714	0	2242.806	Closed	Open	17.5	286
8/28/2024	21:45:00	7.1	0.696	0	2256.218	Closed	Open	17.4	285
8/28/2024	22:00:00	6.9	0.696	0	2269.24	Closed	Open	17.4	287
8/28/2024	22:15:00	7	0.675	0	2282.171	Closed	Open	17.3	287
8/28/2024	22:30:00	7.2	0.681	0	2295.027	Closed	Open	17.1	288
8/28/2024	22:45:00	6.9	0.684	0	2307.943	Closed	Open	16.9	288
8/28/2024	23:00:00	7.2	0.669	0	2320.833	Closed	Open	16.7	288

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/28/2024	23:15:00	6.7	0.669	0	2333.617	Closed	Open	16.4	288
8/28/2024	23:30:00	7.1	0.666	0	2346.216	Closed	Open	16.1	288
8/28/2024	23:45:00	6.9	0.24	215.4	2350.313	Open	Closed	15.7	286
8/29/2024	0:00:00	7.6	0.918	4.6	2350.313	Open	Closed	15.6	286
8/29/2024	0:15:00	7.6	0	4.2	2350.313	Open	Closed	15.7	286
8/29/2024	0:30:00	7.5	0	3.4	2350.313	Open	Closed	15.9	287
8/29/2024	0:45:00	7.4	1.338	31.2	2350.313	Open	Closed	15.8	287
8/29/2024	1:00:00	7.6	0.537	13.7	2350.313	Open	Closed	15.4	282
8/29/2024	1:15:00	7.7	0	8.1	2350.313	Open	Closed	15.5	282
8/29/2024	1:30:00	7.5	0	6.6	2350.313	Open	Closed	15.6	282
8/29/2024	1:45:00	7.6	0.765	3.4	2350.313	Open	Closed	15.4	281
8/29/2024	2:00:00	7.7	0.837	1.7	2350.313	Open	Closed	15.1	283
8/29/2024	2:15:00	7.8	0.828	0.8	2350.313	Open	Closed	14.9	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	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/29/2024	2:30:00	7.8	0	6.4	2350.313	Open	Closed	14.8	279
8/29/2024	2:45:00	7.9	0	5.5	2350.313	Open	Closed	15	279
8/29/2024	3:00:00	7.7	0	4.9	2350.313	Open	Closed	15.1	279
8/29/2024	3:15:00	7.6	0	3.8	2350.313	Open	Closed	15.3	278
8/29/2024	3:30:00	7.5	0	3.7	2350.313	Open	Closed	15.4	279
8/29/2024	3:45:00	7.6	0.957	3	2350.313	Open	Closed	15.2	276
8/29/2024	4:00:00	7.9	0.957	2.2	2350.313	Open	Closed	14.5	271
8/29/2024	4:15:00	7.9	0.948	10.4	2350.313	Open	Closed	14.8	269
8/29/2024	4:30:00	7.9	0.54	75.3	2350.313	Open	Closed	14.8	271
8/29/2024	4:45:00	7.9	1.041	35.2	2350.313	Open	Closed	14.8	271
8/29/2024	5:00:00	7.9	0	11.6	2350.313	Open	Closed	14.9	271
8/29/2024	5:15:00	7.8	0	9.9	2350.313	Open	Closed	15	272
8/29/2024	5:30:00	7.6	0.735	3.2	2350.313	Open	Closed	14.9	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	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/29/2024	5:45:00	6.7	0.684	4.2	2350.313	Open	Closed	14.8	269
8/29/2024	6:00:00	7.1	0.558	1.2	2350.313	Open	Closed	14.8	267
8/29/2024	6:15:00	6.8	0.561	2	2352.218	Closed	Open	14.8	267
8/29/2024	6:30:00	7	0.561	2.4	2362.606	Closed	Open	14.7	267
8/29/2024	6:45:00	7.2	0.546	2.4	2372.872	Closed	Open	14.7	267
8/29/2024	7:00:00	6.8	0.471	3	2382.349	Closed	Open	14.6	267
8/29/2024	7:15:00	7.2	0.429	3.1	2391.081	Closed	Open	14.4	267
8/29/2024	7:30:00	6.7	0.465	3.4	2399.654	Closed	Open	14.3	267
8/29/2024	7:45:00	6.8	0	7.5	2402.787	Open	Closed	14.3	267
8/29/2024	8:00:00	6.8	0	7.5	2402.787	Open	Closed	14.4	267
8/29/2024	8:15:00	6.8	0	6.5	2402.787	Open	Closed	14.6	268
8/29/2024	8:30:00	6.8	0	7.8	2402.787	Open	Closed	14.8	267
8/29/2024	8:45:00	7.1	0.636	13.7	2402.787	Open	Closed	14.5	269

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/29/2024	9:00:00	6.8	0.693	3.7	2402.787	Open	Closed	15.2	268
8/29/2024	9:15:00	7.2	0.678	12.4	2402.787	Open	Closed	15.4	268
8/29/2024	9:30:00	6.8	0.663	14.3	2402.787	Open	Closed	15.5	268
8/29/2024	9:45:00	6.9	0	18.9	2402.787	Open	Closed	15.5	266
8/29/2024	10:00:00	7	0	14.9	2402.787	Open	Closed	15.7	266
8/29/2024	10:15:00	6.9	0	9.4	2402.787	Open	Closed	15.8	266
8/29/2024	10:30:00	6.9	0	11.7	2402.787	Open	Closed	16	268
8/29/2024	10:45:00	6.9	0	14.2	2402.787	Open	Closed	16.2	266
8/29/2024	11:00:00	6.9	0	6.3	2402.787	Open	Closed	16.5	266
8/29/2024	11:15:00	6.9	0	3.7	2402.787	Open	Closed	16.7	266
8/29/2024	11:30:00	6.9	0	3.2	2402.787	Open	Closed	17	268
8/29/2024	11:45:00	6.9	0.642	85.2	2402.787	Open	Closed	17.1	270
8/29/2024	12:00:00	7.3	0.531	407.8	2402.787	Open	Closed	16.8	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	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/29/2024	12:15:00	6.9	0.291	407.7	2402.787	Open	Closed	17.3	267
8/29/2024	12:30:00	6.8	0.93	218.5	2402.787	Open	Closed	17.5	267
8/29/2024	12:45:00	7	0.942	131.9	2402.787	Open	Closed	17.6	267
8/29/2024	13:00:00	6.9	0.942	116.9	2402.787	Open	Closed	17.7	268
8/29/2024	13:15:00	6.9	0.936	128.5	2402.787	Open	Closed	17.8	268
8/29/2024	13:30:00	6.9	0.93	92.7	2402.787	Open	Closed	18.1	269
8/29/2024	13:45:00	7.2	0.792	143.9	2402.787	Open	Closed	18.1	270
8/29/2024	14:00:00	7.3	0.651	77	2402.787	Open	Closed	18.6	272
8/29/2024	14:15:00	7.1	0.741	88.1	2402.787	Open	Closed	18.6	272
8/29/2024	14:30:00	7.1	0.756	71	2402.787	Open	Closed	18.7	271
8/29/2024	14:45:00	7.3	0.738	103.7	2402.787	Open	Closed	18.9	271
8/29/2024	15:00:00	7.2	0.744	105	2402.787	Open	Closed	19.2	271
8/29/2024	15:15:00	7.1	0.729	75.5	2402.787	Open	Closed	19.4	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	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/29/2024	15:30:00	7.3	0.738	79.2	2402.787	Open	Closed	19.6	271
8/29/2024	15:45:00	7.2	0.738	84.6	2402.787	Open	Closed	19.9	273
8/29/2024	16:00:00	7.3	0.735	72.9	2402.787	Open	Closed	20	273
8/29/2024	16:15:00	7.3	0.756	78.1	2402.787	Open	Closed	20.2	271
8/29/2024	16:30:00	7.5	0.744	68.9	2402.787	Open	Closed	20.3	271
8/29/2024	16:45:00	7.5	0.723	44.4	2402.787	Open	Closed	20.3	271
8/29/2024	17:00:00	7.4	0.924	44.4	2402.787	Open	Closed	20.2	271
8/29/2024	17:15:00	7.2	0.492	86.6	2402.787	Open	Closed	20.1	272
8/29/2024	17:30:00	7.5	0.78	17.3	2402.787	Open	Closed	20.2	272
8/29/2024	17:45:00	7.6	0.765	18.4	2402.787	Open	Closed	20.1	271
8/29/2024	18:00:00	7.6	0.645	13.6	2402.787	Open	Closed	20.1	272
8/29/2024	18:15:00	7.6	0.417	10.3	2402.787	Open	Closed	20.1	271
8/29/2024	18:30:00	7.6	0.957	24.3	2402.787	Open	Closed	19.9	271

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/29/2024	18:45:00	7.8	1.038	29.1	2402.787	Open	Closed	19.8	271
8/29/2024	19:00:00	7.8	1.032	17.6	2402.787	Open	Closed	19.8	272
8/29/2024	19:15:00	7.9	1.023	19.3	2402.787	Open	Closed	19.7	272
8/29/2024	19:30:00	7.9	1.014	24.8	2402.787	Open	Closed	19.6	272
8/29/2024	19:45:00	7.6	0.741	9.5	2402.787	Open	Closed	19.6	272
8/29/2024	20:00:00	7.7	0.903	58.2	2402.787	Open	Closed	19.4	273
8/29/2024	20:15:00	7.8	0.879	14.5	2402.787	Open	Closed	19.1	273
8/29/2024	20:30:00	7.8	0.87	12.1	2402.787	Open	Closed	19.2	272
8/29/2024	20:45:00	7.7	0.846	9.9	2402.787	Open	Closed	19.2	271
8/29/2024	21:00:00	7.7	0.738	10.2	2402.787	Open	Closed	19.1	272
8/29/2024	21:15:00	7.8	0.714	4.5	2402.787	Open	Closed	18.9	272
8/29/2024	21:30:00	7.9	0.909	25.1	2402.787	Open	Closed	18.7	271
8/29/2024	21:45:00	8	0	64.2	2402.787	Open	Closed	18.6	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	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/29/2024	22:00:00	7.9	1.032	24.9	2402.787	Open	Closed	18.9	271
8/29/2024	22:15:00	8	1.02	18.4	2402.787	Open	Closed	19.1	271
8/29/2024	22:30:00	8	1.017	26.7	2402.787	Open	Closed	-3.3	269
8/29/2024	22:45:00	8	1.008	33.9	2402.787	Open	Closed	-3.3	269
8/29/2024	23:00:00	8	0	29.5	2402.787	Open	Closed	-3.3	271
8/29/2024	23:15:00	8	1.017	26.3	2402.787	Open	Closed	-3.3	272
8/29/2024	23:30:00	8	1.017	37.6	2402.787	Open	Closed	-3.3	271
8/29/2024	23:45:00	8.1	1.014	44.8	2402.787	Open	Closed	-3.3	272
8/30/2024	0:00:00	8.1	0	28.9	2402.787	Open	Closed	-3.3	272
8/30/2024	0:15:00	7.9	0	32.6	2402.787	Open	Closed	-3.3	272
8/30/2024	0:30:00	8	0.999	35.1	2402.787	Open	Closed	-3.3	272
8/30/2024	0:45:00	8.1	1.014	40.7	2402.787	Open	Closed	-3.3	272
8/30/2024	1:00:00	8.1	1.002	64.2	2402.787	Open	Closed	-3.3	272

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/30/2024	1:15:00	8.1	0.999	57.2	2402.787	Open	Closed	-3.3	272
8/30/2024	1:30:00	8.1	0.99	80.9	2402.787	Open	Closed	-3.3	270
8/30/2024	1:45:00	7.9	0.732	172.3	2402.787	Open	Closed	-3.3	271
8/30/2024	2:00:00	8	1.032	17.5	2402.787	Open	Closed	-3.3	270
8/30/2024	2:15:00	8	0	19.6	2402.787	Open	Closed	-3.3	271
8/30/2024	2:30:00	7.8	0	20.9	2402.787	Open	Closed	-3.3	272
8/30/2024	2:45:00	7.8	0	21.7	2402.787	Open	Closed	-3.3	272
8/30/2024	3:00:00	7.7	0	19.8	2402.787	Open	Closed	-3.3	271
8/30/2024	3:15:00	8	1.035	12.5	2402.787	Open	Closed	-3.3	271
8/30/2024	3:30:00	8.1	1.029	12.6	2402.787	Open	Closed	-3.3	272
8/30/2024	3:45:00	8.1	1.014	20.4	2402.787	Open	Closed	-3.3	271
8/30/2024	4:00:00	8.1	0	21.9	2402.787	Open	Closed	-3.3	271
8/30/2024	4:15:00	8	0	28.6	2402.787	Open	Closed	-3.3	269

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/30/2024	4:30:00	8	1.026	25	2402.787	Open	Closed	-3.3	272
8/30/2024	4:45:00	8.1	1.017	46.8	2402.787	Open	Closed	-3.3	269
8/30/2024	5:00:00	8.1	1.011	60.1	2402.787	Open	Closed	-3.3	270
8/30/2024	5:15:00	8.1	1.002	54.7	2402.787	Open	Closed	-3.3	269
8/30/2024	5:30:00	8.1	0.996	66.2	2402.787	Open	Closed	-3.3	269
8/30/2024	5:45:00	8.1	0	60.3	2402.787	Open	Closed	-3.3	268
8/30/2024	6:00:00	7.5	0.765	208.3	2402.787	Open	Closed	-3.3	268
8/30/2024	6:15:00	7.7	1.092	47.5	2402.787	Open	Closed	-3.3	271
8/30/2024	6:30:00	8	1.092	48.7	2402.787	Open	Closed	-3.3	271
8/30/2024	6:45:00	8	1.086	63.5	2402.787	Open	Closed	-3.3	272
8/30/2024	7:00:00	8	0	52.1	2402.787	Open	Closed	-3.3	272
8/30/2024	7:15:00	8	1.08	73.4	2402.787	Open	Closed	-3.3	271
8/30/2024	7:30:00	8	1.077	57.6	2402.787	Open	Closed	-3.3	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	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/30/2024	7:45:00	8	0	39.7	2402.787	Open	Closed	-3.3	272
8/30/2024	8:00:00	7.8	0	30.7	2402.787	Open	Closed	-3.3	272
8/30/2024	8:15:00	7.8	0	27.6	2402.787	Open	Closed	-3.3	273
8/30/2024	8:30:00	7.6	0.897	93.7	2402.787	Open	Closed	-3.3	273
8/30/2024	8:45:00	7.6	0.657	28.8	2402.787	Open	Closed	-3.3	273
8/30/2024	9:00:00	7.6	0.759	408	2402.787	Open	Closed	-3.3	272
8/30/2024	9:15:00	7.6	0.726	7.5	2402.787	Open	Closed	-3.3	273
8/30/2024	9:30:00	7.6	0.687	3.7	2402.787	Open	Closed	-3.3	273
8/30/2024	9:45:00	7.6	0.693	1.4	2415.518	Closed	Open	-3.3	273
8/30/2024	10:00:00	7.6	0.678	0	2428.374	Closed	Open	-3.3	273
8/30/2024	10:15:00	7.6	0.627	0	2441.041	Closed	Open	-3.3	273
8/30/2024	10:30:00	7.7	0.588	0.1	2452.43	Closed	Open	-3.3	272
8/30/2024	10:45:00	7.7	0.585	0.7	2463.35	Closed	Open	-3.3	272

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/30/2024	11:00:00	7.7	0.564	1.4	2474.123	Open	Open	-3.3	272
8/30/2024	11:15:00	7.7	0.531	2	2480.466	Open	Closed	-3.3	274
8/30/2024	11:30:00	7.7	0.522	3.3	2483.747	Open	Closed	-3.3	274
8/30/2024	11:45:00	7.7	0.519	2.4	2483.747	Open	Closed	-3.3	272
8/30/2024	12:00:00	7.7	0.702	32.9	2483.747	Open	Closed	-3.3	272
8/30/2024	12:15:00	7.7	0.618	2.2	2483.747	Open	Closed	-3.3	272
8/30/2024	12:30:00	7.7	0.621	0	2494.343	Closed	Open	-3.3	272
8/30/2024	12:45:00	7.7	0.606	0.1	2505.909	Closed	Open	-3.3	274
8/30/2024	13:00:00	7.7	0.588	0.2	2517.363	Closed	Open	-3.3	272
8/30/2024	13:15:00	7.7	0.588	3.3	2524.673	Open	Closed	-3.3	272
8/30/2024	13:30:00	7.7	0.585	0	2525.702	Closed	Open	-3.3	273
8/30/2024	13:45:00	7.7	0.576	0	2536.527	Closed	Open	-3.3	273
8/30/2024	14:00:00	7.9	0.111	406.8	2538.886	Open	Closed	-3.3	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	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/30/2024	14:15:00	7.9	0	323.8	2538.886	Open	Closed	-3.3	271
8/30/2024	14:30:00	7.9	0	238.9	2538.886	Open	Closed	-3.3	271
8/30/2024	14:45:00	8.1	0.777	406.5	2538.886	Open	Closed	-3.3	271
8/30/2024	15:00:00	7.9	0.687	390.9	2538.886	Open	Closed	-3.3	271
8/30/2024	15:15:00	7.9	0.9	284.3	2538.886	Open	Closed	-3.3	272
8/30/2024	15:30:00	7.5	0.846	43.6	2538.886	Open	Closed	-3.3	271
8/30/2024	15:45:00	7.3	0.822	43.8	2538.886	Open	Closed	-3.3	271
8/30/2024	16:00:00	7.1	0.762	31	2538.886	Open	Closed	-3.3	272
8/30/2024	16:15:00	7	0.72	20.9	2538.886	Open	Closed	-3.3	271
8/30/2024	16:30:00	7.3	0	16.5	2538.886	Open	Closed	-3.3	272
8/30/2024	16:45:00	7.3	0	15.1	2538.886	Open	Closed	-3.3	271
8/30/2024	17:00:00	7.3	0	12.4	2538.886	Open	Closed	-3.3	272
8/30/2024	17:15:00	7.3	0	128.1	2538.886	Open	Closed	-3.3	272

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/30/2024	17:30:00	7.3	0.717	114.7	2538.886	Open	Closed	-3.3	272
8/30/2024	17:45:00	7.3	0.714	114.8	2538.886	Open	Closed	-3.3	275
8/30/2024	18:00:00	7.3	0.687	85.2	2538.886	Open	Closed	-3.3	275
8/30/2024	18:15:00	7.3	0	83.2	2538.886	Open	Closed	-3.3	273
8/30/2024	18:30:00	7.3	0	84.3	2538.886	Open	Closed	-3.3	275
8/30/2024	18:45:00	7.3	0	82.7	2538.886	Open	Closed	-3.3	274
8/30/2024	19:00:00	7.3	0	76.1	2538.886	Open	Closed	-3.3	276
8/30/2024	19:15:00	7.3	0.6	71.9	2538.886	Open	Closed	-3.3	276
8/30/2024	19:30:00	7.3	0	71	2538.886	Open	Closed	-3.3	279
8/30/2024	19:45:00	7.3	0	64.9	2538.886	Open	Closed	-3.3	279
8/30/2024	20:00:00	7.3	0	33.4	2538.886	Open	Closed	-3.3	279
8/30/2024	20:15:00	7.2	0	31	2538.886	Open	Closed	-3.3	279
8/30/2024	20:30:00	7.2	0	31.7	2538.886	Open	Closed	-3.3	279

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/30/2024	20:45:00	7.2	0	28	2538.886	Open	Closed	-3.3	279
8/30/2024	21:00:00	7.2	0	24.2	2538.886	Open	Closed	-3.3	281
8/30/2024	21:15:00	7.2	0	22.3	2538.886	Open	Closed	-3.3	279
8/30/2024	21:30:00	7.2	0	22.1	2538.886	Open	Closed	-3.3	281
8/30/2024	21:45:00	7.2	0	24.2	2538.886	Open	Closed	-3.3	280
8/30/2024	22:00:00	7.2	0	17.7	2538.886	Open	Closed	-3.3	281
8/30/2024	22:15:00	7.2	0.729	15	2538.886	Open	Closed	-3.3	281
8/30/2024	22:30:00	7.2	1.503	15.1	2538.886	Open	Closed	-3.3	282
8/30/2024	22:45:00	7.1	1.44	17.8	2538.886	Open	Closed	-3.3	282
8/30/2024	23:00:00	7.2	1.173	15.9	2538.886	Open	Closed	-3.3	286
8/30/2024	23:15:00	7.3	0.39	15.6	2538.886	Open	Closed	-3.3	287
8/30/2024	23:30:00	7	0.588	19.9	2538.886	Open	Closed	-3.3	287
8/30/2024	23:45:00	7	1.488	16.7	2538.886	Open	Closed	-3.3	287

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/31/2024	0:00:00	7	0.405	15.9	2538.886	Open	Closed	-3.3	286
8/31/2024	0:15:00	7.2	0.678	12	2538.886	Open	Closed	-3.3	286
8/31/2024	0:30:00	7.1	0.252	11.6	2538.886	Open	Closed	-3.3	288
8/31/2024	0:45:00	7.4	0.282	0	2540.152	Closed	Open	-3.3	285
8/31/2024	1:00:00	7.4	0.33	1.3	2545.649	Closed	Open	-3.3	287
8/31/2024	1:15:00	7.4	0.327	0	2551.776	Closed	Open	-3.3	287
8/31/2024	1:30:00	7.4	0.321	4.6	2557.9	Closed	Open	-3.3	290
8/31/2024	1:45:00	7.4	0.324	0.8	2563.94	Closed	Open	-3.3	290
8/31/2024	2:00:00	7.4	0.321	0.7	2570.048	Closed	Open	-3.3	291
8/31/2024	2:15:00	7.3	0.321	0.5	2576.172	Closed	Open	-3.3	292
8/31/2024	2:30:00	7.3	0.315	0.5	2582.262	Closed	Open	-3.3	291
8/31/2024	2:45:00	7.3	0.315	0.5	2588.385	Closed	Open	-3.3	291
8/31/2024	3:00:00	7.3	1.461	295.7	2589.092	Open	Closed	-3.3	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	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/31/2024	3:15:00	7.4	0	68.4	2589.092	Open	Closed	-3.3	291
8/31/2024	3:30:00	7.4	0	49.6	2589.092	Open	Closed	-3.3	290
8/31/2024	3:45:00	7.4	0	48.2	2589.092	Open	Closed	-3.3	293
8/31/2024	4:00:00	7.4	0	32.4	2589.092	Open	Closed	-3.3	292
8/31/2024	4:15:00	8.3	1.284	407.9	2589.092	Open	Closed	-3.3	293
8/31/2024	4:30:00	8.4	0.915	407.9	2589.092	Open	Closed	-3.3	293
8/31/2024	4:45:00	8.4	0.93	407.9	2589.092	Open	Closed	-3.3	293
8/31/2024	5:00:00	8.3	1.458	407.8	2589.092	Open	Closed	-3.3	296
8/31/2024	5:15:00	8.3	0.792	407.8	2589.092	Open	Closed	-3.3	294
8/31/2024	5:30:00	8.3	0.672	407.8	2589.092	Open	Closed	-3.3	294
8/31/2024	5:45:00	8.2	1.386	154.1	2589.092	Open	Closed	-3.3	293
8/31/2024	6:00:00	8.2	1.395	77.7	2589.092	Open	Closed	-3.3	294
8/31/2024	6:15:00	8.1	0.804	34.2	2589.092	Open	Closed	-3.3	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	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/31/2024	6:30:00	8.1	1.389	59.3	2589.092	Open	Closed	-3.3	296
8/31/2024	6:45:00	8.1	1.374	85.4	2589.092	Open	Closed	-3.3	296
8/31/2024	7:00:00	8.1	1.353	376.6	2589.092	Open	Closed	106.3	296
8/31/2024	7:15:00	8.1	0.825	310.2	2589.092	Open	Closed	106.3	296
8/31/2024	7:30:00	8.1	1.386	64.8	2589.092	Open	Closed	106.3	299
8/31/2024	7:45:00	8.1	0	248.4	2589.092	Open	Closed	106.3	299
8/31/2024	8:00:00	8	0	161.9	2589.092	Open	Closed	106.3	299
8/31/2024	8:15:00	8	0	149.5	2589.092	Open	Closed	106.3	299
8/31/2024	8:30:00	7.6	0.945	407.7	2589.092	Open	Closed	106.3	302
8/31/2024	8:45:00	7.5	0.792	62.4	2589.092	Open	Closed	106.3	300
8/31/2024	9:00:00	7.6	0.723	16.6	2589.092	Open	Closed	106.3	301
8/31/2024	9:15:00	7.6	0.624	9.1	2589.092	Open	Closed	106.3	303
8/31/2024	9:30:00	7.6	0.612	6.1	2589.092	Open	Closed	106.3	303

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/31/2024	9:45:00	7.6	0.603	5.8	2589.092	Open	Closed	106.3	303
8/31/2024	10:00:00	7.5	0.39	20.6	2589.092	Open	Closed	106.3	307
8/31/2024	10:15:00	7.1	0.525	40.6	2589.092	Open	Closed	106.3	307
8/31/2024	10:30:00	7.1	0.678	15.9	2589.092	Open	Closed	106.3	307
8/31/2024	10:45:00	7.3	0.594	10	2589.092	Open	Closed	106.3	307
8/31/2024	11:00:00	7	0.522	7.9	2589.092	Open	Closed	106.3	307
8/31/2024	11:15:00	7.3	0.489	10.1	2589.092	Open	Closed	106.3	305
8/31/2024	11:30:00	7	0.354	35.5	2589.092	Open	Closed	106.3	307
8/31/2024	11:45:00	7.2	0.531	11.7	2589.092	Open	Closed	106.3	308
8/31/2024	12:00:00	7.1	0.291	26.3	2589.092	Open	Closed	106.3	308
8/31/2024	12:15:00	7	0.315	15.3	2589.092	Open	Closed	106.3	308
8/31/2024	12:30:00	7.3	0.606	16.4	2589.092	Open	Closed	106.3	309
8/31/2024	12:45:00	7.1	0.558	36.8	2589.092	Open	Closed	106.3	309

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/31/2024	13:00:00	7	0.534	29.2	2589.092	Open	Closed	106.3	309
8/31/2024	13:15:00	7.3	0.858	269	2589.092	Open	Closed	106.3	309
8/31/2024	13:30:00	7.1	0.576	44.5	2589.092	Open	Closed	106.3	308
8/31/2024	13:45:00	7.1	0.441	8.1	2589.092	Open	Closed	106.3	308
8/31/2024	14:00:00	7.1	0.585	0.8	2596.962	Closed	Open	106.3	309
8/31/2024	14:15:00	7.1	0.6	1.7	2608.291	Closed	Open	106.3	309
8/31/2024	14:30:00	7.2	0.6	0	2619.865	Closed	Open	106.3	309
8/31/2024	14:45:00	7	0.603	0	2631.307	Closed	Open	106.3	309
8/31/2024	15:00:00	7.3	0.591	0	2642.617	Closed	Open	106.3	309
8/31/2024	15:15:00	7.1	0.588	1.1	2653.745	Closed	Open	106.3	311
8/31/2024	15:30:00	7.3	0.552	2.4	2660.118	Open	Closed	106.3	307
8/31/2024	15:45:00	7.1	0.552	3.6	2660.118	Open	Closed	106.3	307
8/31/2024	16:00:00	7.3	0.555	0	2665.614	Closed	Open	106.3	307

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/31/2024	16:15:00	7.2	0.546	0	2676.032	Closed	Open	106.3	307
8/31/2024	16:30:00	7.3	0.546	0	2686.321	Closed	Open	106.3	307
8/31/2024	16:45:00	7.4	0.528	0	2696.546	Closed	Open	106.3	307
8/31/2024	17:00:00	7.4	0.537	0	2706.692	Closed	Open	106.3	307
8/31/2024	17:15:00	7.5	0.537	0	2716.784	Closed	Open	106.3	308
8/31/2024	17:30:00	7.6	0	0.5	2723.433	Closed	Open	106.3	308
8/31/2024	17:45:00	7.7	0.552	80.2	2723.433	Open	Closed	106.3	305
8/31/2024	18:00:00	7.3	0.543	30.8	2723.433	Open	Closed	106.3	305
8/31/2024	18:15:00	7.1	0.534	5.9	2723.433	Open	Closed	106.3	303
8/31/2024	18:30:00	7.2	0.579	2.9	2730.887	Closed	Open	106.3	303
8/31/2024	18:45:00	7.2	0.594	2.7	2741.785	Closed	Open	106.3	303
8/31/2024	19:00:00	7	0.651	5.4	2753.715	Closed	Open	106.3	303
8/31/2024	19:15:00	7.3	0.648	2.7	2766.007	Closed	Open	106.3	303

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/31/2024	19:30:00	7.2	0.588	2.4	2778.111	Closed	Open	106.3	303
8/31/2024	19:45:00	7.1	0.585	1.4	2789.126	Closed	Open	106.3	304
8/31/2024	20:00:00	7.3	0.576	0	2799.982	Closed	Open	106.3	304
8/31/2024	20:15:00	7.3	0	0	2803.308	Open	Closed	106.3	304
8/31/2024	20:30:00	7.3	0	0	2803.308	Open	Closed	106.3	304
8/31/2024	20:45:00	7.2	0	3.4	2803.55	Open	Closed	106.3	302
8/31/2024	21:00:00	7.5	0	207.2	2803.55	Open	Closed	106.3	300
8/31/2024	21:15:00	7.2	0.678	22.8	2803.55	Open	Closed	106.3	300
8/31/2024	21:30:00	7.1	1.146	27.6	2803.55	Open	Closed	106.3	300
8/31/2024	21:45:00	7.1	0.864	343.1	2803.55	Open	Closed	106.3	300
8/31/2024	22:00:00	7.3	0.702	16.5	2805.168	Open	Closed	106.3	300
8/31/2024	22:15:00	7.1	0.456	2.6	2809.16	Open	Closed	106.3	301
8/31/2024	22:30:00	7.3	0.714	1.9	2809.16	Open	Closed	106.3	301

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
8/31/2024	22:45:00	7	0.411	1.3	2810.422	Closed	Open	106.3	302
8/31/2024	23:00:00	7.3	0.414	0.7	2818.085	Closed	Open	106.3	299
8/31/2024	23:15:00	7	0.408	1.1	2825.754	Closed	Open	106.3	299
8/31/2024	23:30:00	7.1	0.417	0.9	2833.333	Closed	Open	106.3	298
8/31/2024	23:45:00	7.3	0.402	0.4	2840.821	Closed	Open	106.3	298
9/1/2024	0:00:00	6.9	0.408	0.6	2848.366	Closed	Open	106.3	300
9/1/2024	0:15:00	7.2	0.414	0	2855.881	Closed	Open	106.3	299
9/1/2024	0:30:00	7.1	0.351	0.3	2863.135	Closed	Open	106.3	299
9/1/2024	0:45:00	7	0.333	0.6	2869.511	Closed	Open	106.3	299
9/1/2024	1:00:00	7.2	0.339	0.2	2875.688	Closed	Open	106.3	299
9/1/2024	1:15:00	7.2	0.333	0.2	2881.808	Closed	Open	106.3	299
9/1/2024	1:30:00	6.9	0.33	1.2	2888.139	Closed	Open	106.3	301
9/1/2024	1:45:00	7.1	0.327	0.5	2894.267	Closed	Open	106.3	301

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/1/2024	2:00:00	7.3	0.321	0	2900.356	Closed	Open	106.3	299
9/1/2024	2:15:00	6.9	0.33	0	2906.48	Closed	Open	106.3	300
9/1/2024	2:30:00	7	0.321	0	2912.603	Closed	Open	106.3	299
9/1/2024	2:45:00	7.3	0.321	0	2918.693	Closed	Open	106.3	299
9/1/2024	3:00:00	7.3	1.059	13	2920.258	Open	Closed	106.3	299
9/1/2024	3:15:00	7.4	1.188	15.9	2920.258	Open	Closed	106.3	298
9/1/2024	3:30:00	7.2	1.173	20.9	2920.258	Open	Closed	106.3	299
9/1/2024	3:45:00	7.3	0.762	16.4	2920.258	Open	Closed	106.3	299
9/1/2024	4:00:00	7.2	0.336	6.9	2920.258	Open	Closed	106.3	298
9/1/2024	4:15:00	7.3	0.336	4.6	2920.258	Open	Closed	106.3	298
9/1/2024	4:30:00	6.9	0.288	3.6	2920.258	Open	Closed	106.3	296
9/1/2024	4:45:00	6.9	0.393	3.5	2920.969	Closed	Open	106.3	296
9/1/2024	5:00:00	7	0.384	1.2	2928.128	Closed	Open	106.3	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	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/1/2024	5:15:00	7	0.369	1.1	2935.053	Closed	Open	106.3	296
9/1/2024	5:30:00	6.9	0.366	1.1	2941.925	Closed	Open	106.3	296
9/1/2024	5:45:00	7.5	0.366	1.3	2947.761	Open	Open	106.3	294
9/1/2024	6:00:00	7.1	0.336	1.7	2954.41	Closed	Open	106.3	294
9/1/2024	6:15:00	6.9	0.324	1.7	2960.666	Closed	Open	106.3	296
9/1/2024	6:30:00	7.1	0.33	1.3	2966.759	Closed	Open	106.3	294
9/1/2024	6:45:00	7.3	0.324	0.6	2972.887	Closed	Open	106.3	294
9/1/2024	7:00:00	7.1	0.324	0.4	2979.033	Closed	Open	106.3	294
9/1/2024	7:15:00	6.9	0.318	0.6	2985.123	Closed	Open	106.3	296
9/1/2024	7:30:00	7.1	0.321	0.1	2991.246	Closed	Open	106.3	296
9/1/2024	7:45:00	7.3	0.312	0	2997.37	Closed	Open	106.3	296
9/1/2024	8:00:00	7.1	0.312	0	3003.459	Closed	Open	106.3	294
9/1/2024	8:15:00	6.9	0.315	0.5	3009.583	Closed	Open	106.3	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	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/1/2024	8:30:00	7.1	0.315	0.8	3015.707	Closed	Open	106.3	294
9/1/2024	8:45:00	7.3	0.336	15.4	3020.492	Open	Closed	106.3	293
9/1/2024	9:00:00	7	0.333	15.5	3020.492	Open	Closed	106.3	293
9/1/2024	9:15:00	7	0.333	6.7	3020.636	Open	Closed	106.3	293
9/1/2024	9:30:00	7.2	0.345	4.6	3022.806	Open	Open	106.3	293
9/1/2024	9:45:00	7.2	0.339	5.4	3028.147	Open	Closed	106.3	293
9/1/2024	10:00:00	6.9	0.339	26.3	3028.147	Open	Closed	106.3	290
9/1/2024	10:15:00	7.1	0.177	55.4	3028.147	Open	Closed	106.3	291
9/1/2024	10:30:00	7.8	0.243	68.2	3028.147	Open	Closed	106.3	297
9/1/2024	10:45:00	7.4	0.786	142.4	3028.147	Open	Closed	106.3	287
9/1/2024	11:00:00	7.2	0.81	128.7	3028.147	Open	Closed	106.3	286
9/1/2024	11:15:00	7.3	0.891	10.7	3028.147	Open	Closed	106.3	287
9/1/2024	11:30:00	7.1	0.549	8.2	3028.147	Open	Closed	106.3	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	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/1/2024	11:45:00	7.3	0.78	27.1	3028.147	Open	Closed	106.3	289
9/1/2024	12:00:00	7.1	0.504	17.1	3028.147	Open	Closed	106.3	287
9/1/2024	12:15:00	7.3	0.696	14.1	3028.147	Open	Closed	106.3	286
9/1/2024	12:30:00	7.1	0.462	16.5	3028.147	Open	Closed	106.3	286
9/1/2024	12:45:00	7.3	0.432	11.2	3028.147	Open	Closed	106.3	288
9/1/2024	13:00:00	7.1	0.657	15.3	3028.147	Open	Closed	106.3	288
9/1/2024	13:15:00	7.3	0.621	8.2	3028.147	Open	Closed	106.3	288
9/1/2024	13:30:00	7.1	0.612	9.5	3028.147	Open	Closed	106.3	286
9/1/2024	13:45:00	7.3	0.609	4.6	3028.147	Open	Closed	106.3	286
9/1/2024	14:00:00	7.2	0.573	4.9	3028.876	Open	Closed	106.3	286
9/1/2024	14:15:00	7.2	0.555	5.1	3028.876	Open	Closed	106.3	286
9/1/2024	14:30:00	7.2	0.546	6.2	3028.876	Open	Closed	106.3	287
9/1/2024	14:45:00	7.2	0.402	32.4	3028.876	Open	Closed	106.3	285

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/1/2024	15:00:00	7.3	0.354	5.4	3028.876	Open	Closed	106.3	285
9/1/2024	15:15:00	7.1	0.543	10.5	3028.876	Open	Closed	106.3	285
9/1/2024	15:30:00	7.3	0.546	3.6	3028.876	Open	Closed	106.3	287
9/1/2024	15:45:00	7.2	0.333	0	3034.663	Closed	Open	106.3	286
9/1/2024	16:00:00	7	0.327	0	3040.832	Closed	Open	106.3	286
9/1/2024	16:15:00	7.2	0.324	0	3046.922	Closed	Open	106.3	285
9/1/2024	16:30:00	7.3	0.315	0	3053.046	Closed	Open	106.3	285
9/1/2024	16:45:00	7.1	0.327	0	3059.177	Closed	Open	106.3	287
9/1/2024	17:00:00	7.1	0.318	0	3065.266	Closed	Open	106.3	288
9/1/2024	17:15:00	7.2	0	0	3068.736	Open	Closed	106.3	288
9/1/2024	17:30:00	7.2	0	0	3068.736	Open	Closed	106.3	288
9/1/2024	17:45:00	7.1	0	0	3068.736	Open	Closed	106.3	288
9/1/2024	18:00:00	7.3	0.603	142.1	3068.736	Open	Closed	106.3	287

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/1/2024	18:15:00	7.1	0.594	56.1	3068.736	Open	Closed	106.3	285
9/1/2024	18:30:00	7.3	0.57	29.7	3068.736	Open	Closed	106.3	284
9/1/2024	18:45:00	7.1	0.384	13.1	3068.736	Open	Closed	106.3	284
9/1/2024	19:00:00	7.2	0.573	48.7	3068.736	Open	Closed	106.3	284
9/1/2024	19:15:00	7.2	0	12	3068.736	Open	Closed	106.3	284
9/1/2024	19:30:00	7.2	0	13.3	3068.736	Open	Closed	106.3	287
9/1/2024	19:45:00	7.2	0	7.4	3068.736	Open	Closed	106.3	287
9/1/2024	20:00:00	7.2	0	3.8	3068.736	Open	Closed	106.3	287
9/1/2024	20:15:00	7.2	0	4.5	3068.736	Open	Closed	106.3	288
9/1/2024	20:30:00	7.1	1.431	406.7	3068.736	Open	Closed	106.3	288
9/1/2024	20:45:00	7.1	0.6	50.2	3068.736	Open	Closed	106.3	286
9/1/2024	21:00:00	7.3	0	17	3068.736	Open	Closed	106.3	287
9/1/2024	21:15:00	7.1	0	88.5	3068.736	Open	Closed	106.3	287

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**August 26 to September 1**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **September 10, 2024**

Date	Time	Discharge pH	Discharge Flow (m3/m)	Discharge NTU	Flow Total (m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (µS/cm)
9/1/2024	21:30:00	7.2	0.54	2.7	3068.736	Open	Closed	106.3	287
9/1/2024	21:45:00	7.1	0.894	12.3	3068.736	Open	Closed	106.3	287
9/1/2024	22:00:00	7.3	0.648	5.7	3068.736	Open	Closed	106.3	287
9/1/2024	22:15:00	7.1	0.63	6.8	3068.736	Open	Closed	106.3	287
9/1/2024	22:30:00	7.3	0.615	5.6	3068.736	Open	Closed	106.3	287
9/1/2024	22:45:00	7	0.441	4.8	3068.736	Open	Closed	106.3	287
9/1/2024	23:00:00	7.2	0.411	3.4	3068.736	Open	Closed	106.3	287
9/1/2024	23:15:00	7.3	0.423	3.4	3073.586	Closed	Open	106.3	287
9/1/2024	23:30:00	7	0.348	4.8	3077.498	Open	Closed	106.3	287
9/1/2024	23:45:00	7.1	0.462	5.9	3077.498	Open	Closed	106.3	287

Appendix B: Photos

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

Photo 2: No visible sheen observed in the WTP tank, August 28th Evening

Photo 3: No visible sheen observed in the WTP tank, August 30st

Photo 4: No visible sheen observed in the WTP tank, August 31st Afternoon

Photo 5: No visible sheen observed in the WTP tank, August 31st Evening


Woodfibre Site Receiving Environment Field Notes and Logs

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-8-27-Chycoski-A94A9

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	08/27/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	
Temperature(c):	Low 11 High 17	**Permit:**	PE 110136
Weather Conditions:	Clear	**Ground Conditions:**	Damp

Observations

Time: 10:39:00 **Flow Volume (visual):** low

Notes: Turbidity increase likely from heavy rain last night.

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 mud off sensors.

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

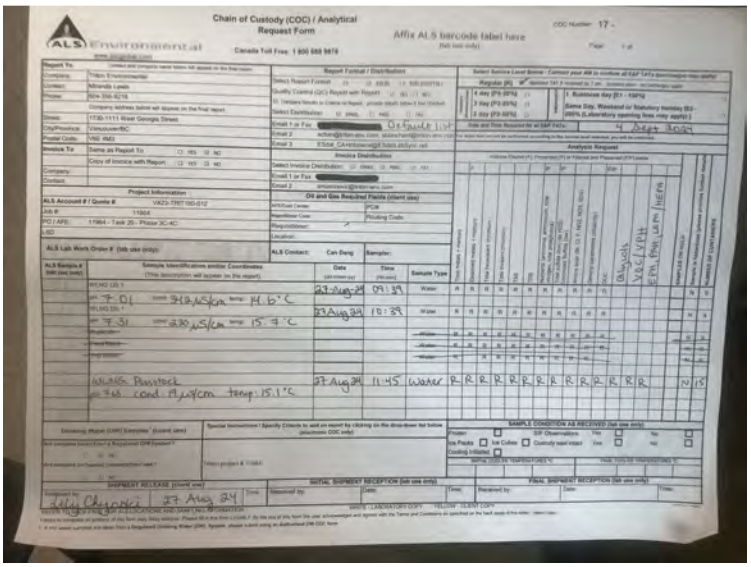

Photo: 4

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

2024-8-27-Chycoski-D11E7

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	08/27/2024	**Location:**	WLNG
Triton QP:	Lily Chycoski	**Latitude/Longitude:**	49.669455 -123.25087
Temperature(c):	Low 11 High 17	**Permit:**	PE 110136
Weather Conditions:	Clear	**Ground Conditions:**	Damp

Observations

Time: 09:39:00 **Flow Volume (visual):** low

Notes: Higher turbidity in water likely due to heavy rainfall yesterday night.

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 US 1

Description: US view

Photo: 2

Location: EAS US 1

Description: Across view

Photos

Photo: 3

Location: EAS US 1

Description: DS view

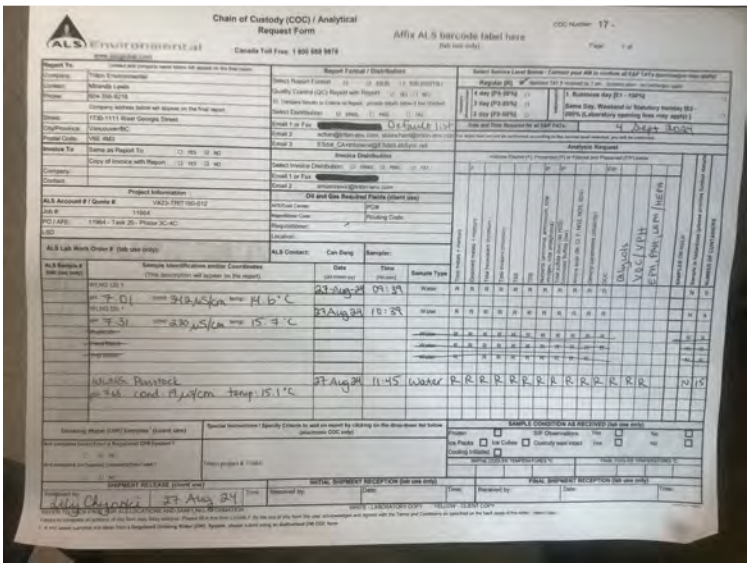

Photo: 4

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:			

WLNG Upstream Raw Sonde Data 2024-08-26 to 2024-09-01

Received	Temperature C	Specific Conductivity ÂµS/cm	Salinity PSU	pH pH	ORP mV	Dissolved Oxygen Concentration mg/L	Turbidity NTU	TL Battery V
9/1/2024 23:50	16	23.59	0.01	7.08	417.39	8.53	0.7	12.12
9/1/2024 23:40	16.02	23.65	0.01	7.09	416.04	8.54	0.53	12.19
9/1/2024 23:30	16.03	23.6	0.01	7.11	415.52	8.52	0.52	12.21
9/1/2024 23:20	16.05	23.67	0.01	7.09	416.43	8.51	0.52	12.12
9/1/2024 23:10	16.07	23.49	0.01	7.1	416.27	8.53	0.53	12.12
9/1/2024 23:00	16.09	23.69	0.01	7.08	416.38	8.51	0.52	12.19
9/1/2024 22:50	16.12	23.66	0.01	7.1	416.4	8.51	0.55	12.21
9/1/2024 22:40	16.14	23.75	0.01	7.09	416.03	8.5	0.53	12.21
9/1/2024 22:30	16.16	23.43	0.01	7.1	416.04	8.49	0.54	12.24
9/1/2024 22:20	16.19	23.73	0.01	7.09	416.18	8.49	0.55	12.24
9/1/2024 22:10	16.21	23.71	0.01	7.09	416.39	8.47	0.55	12.24
9/1/2024 22:00	16.24	23.78	0.01	7.08	416.32	8.47	0.55	12.24
9/1/2024 21:50	16.26	23.75	0.01	7.08	416.22	8.45	0.56	12.24
9/1/2024 21:40	16.29	23.83	0.01	7.09	415.14	8.48	0.55	12.24
9/1/2024 21:30	16.31	23.74	0.01	7.11	414.33	8.47	0.54	12.24
9/1/2024 21:20	16.34	23.77	0.01	7.09	414.48	8.45	0.58	12.24
9/1/2024 21:10	16.36	23.81	0.01	7.07	415.66	8.45	0.54	12.24
9/1/2024 21:00	16.38	23.87	0.01	7.07	414.79	8.45	0.53	12.17
9/1/2024 20:50	16.4	23.66	0.01	7.08	413.86	8.44	0.54	12.26
9/1/2024 20:40	16.43	23.84	0.01	7.09	413.07	8.45	0.92	12.24
9/1/2024 20:30	16.45	23.83	0.01	7.1	412.28	8.43	0.56	12.17
9/1/2024 20:20	16.48	23.95	0.01	7.09	412.13	8.42	0.6	12.26
9/1/2024 20:10	16.49	23.78	0.01	7.1	411.69	8.42	0.53	12.26
9/1/2024 20:00	16.51	23.76	0.01	7.09	411.74	8.42	0.57	12.29
9/1/2024 19:50	16.54	23.71	0.01	7.09	411.64	8.42	0.89	12.29
9/1/2024 19:40	16.56	23.76	0.01	7.1	410.83	8.41	0.55	12.29
9/1/2024 19:30	16.57	23.54	0.01	7.11	410.17	8.43	0.56	12.19
9/1/2024 19:20	16.6	23.78	0.01	7.09	410.35	8.44	0.56	12.24
9/1/2024 19:10	16.61	23.59	0.01	7.1	409.62	8.44	0.56	12.33
9/1/2024 19:00	16.64	23.69	0.01	7.11	408.7	8.45	0.56	12.29
9/1/2024 18:50	16.66	23.69	0.01	7.1	408.76	8.44	0.59	12.41
9/1/2024 18:40	16.66	23.6	0.01	7.12	407.39	8.46	0.56	12.41
9/1/2024 18:30	16.68	23.7	0.01	7.12	406.62	8.48	0.55	12.33
9/1/2024 18:30	16.68	23.39	0.01	7.13	406.82	8.48	0.56	12.29
9/1/2024 18:20	16.69	23.58	0.01	7.13	405.52	8.49	0.58	12.41
9/1/2024 18:10	16.7	23.34	0.01	7.13	405.23	8.5	0.57	12.38
9/1/2024 18:00	16.72	23.54	0.01	7.11	405.95	8.47	0.55	12.38
9/1/2024 18:00	16.72	23.54	0.01	7.11	405.95	8.47	0.55	12.38
9/1/2024 17:50	16.73	23.31	0.01	7.13	405.02	8.5	0.56	12.62
9/1/2024 17:40	16.75	23.37	0.01	7.14	403.82	8.52	0.59	12.53
9/1/2024 17:30	16.76	23.38	0.01	7.14	403.43	8.51	0.57	12.65

WLNG Upstream Raw Sonde Data 2024-08-26 to 2024-09-01

9/1/2024 17:20	16.78	23.37	0.01	7.14	403.35	8.54	0.54	12.62
9/1/2024 17:10	16.78	23.23	0.01	7.16	401.86	8.56	0.57	12.76
9/1/2024 17:00	16.77	23.34	0.01	7.15	402.28	8.56	0.58	13.12
9/1/2024 16:50	16.77	23.15	0.01	7.15	402.22	8.57	0.58	13.08
9/1/2024 16:40	16.77	23.32	0.01	7.15	400.58	8.57	0.59	13.34
9/1/2024 16:30	16.79	23.12	0.01	7.16	400.12	8.6	0.58	13.29
9/1/2024 16:20	16.82	23.25	0.01	7.19	398.23	8.59	0.56	13.27
9/1/2024 16:10	16.82	23.14	0.01	7.18	397.57	8.58	0.57	13.27
9/1/2024 16:00	16.88	23.27	0.01	7.18	397.09	8.62	0.57	12.5
9/1/2024 15:50	16.91	22.95	0.01	7.2	395.58	8.62	0.58	12.91
9/1/2024 15:40	16.87	23.09	0.01	7.2	394.9	8.63	0.57	12.74
9/1/2024 15:30	16.84	22.92	0.01	7.2	394.23	8.64	0.58	13.12
9/1/2024 15:20	16.79	23.17	0.01	7.2	393.25	8.66	0.56	13.29
9/1/2024 15:10	16.74	23	0.01	7.21	392.62	8.68	0.56	13.32
9/1/2024 15:00	16.71	23.13	0.01	7.19	392.67	8.67	0.55	13.22
9/1/2024 14:50	16.77	22.96	0.01	7.22	390.62	8.68	0.55	13.03
9/1/2024 14:40	16.76	23.17	0.01	7.22	389.44	8.69	0.56	13.15
9/1/2024 14:30	16.76	23.04	0.01	7.22	389.2	8.72	0.58	13.24
9/1/2024 14:20	16.71	23.03	0.01	7.23	388.42	8.72	0.57	13.24
9/1/2024 14:10	16.66	22.91	0.01	7.27	385.15	8.74	0.57	13.15
9/1/2024 14:00	16.62	23.07	0.01	7.23	386.71	8.75	0.56	13.12
9/1/2024 13:50	16.52	23.02	0.01	7.23	386.34	8.79	0.56	13.22
9/1/2024 13:40	16.53	23.12	0.01	7.23	385.59	8.78	0.56	13.24
9/1/2024 13:30	16.47	22.96	0.01	7.24	384.03	8.8	0.53	13.27
9/1/2024 13:20	16.43	23.11	0.01	7.24	383.06	8.8	0.53	13.29
9/1/2024 13:10	16.4	22.92	0.01	7.24	383.47	8.83	0.57	13.29
9/1/2024 13:00	16.38	23.17	0.01	7.23	383.93	8.85	0.56	13.34
9/1/2024 12:50	16.34	23.03	0.01	7.23	384.63	8.86	0.52	13.36
9/1/2024 12:40	16.33	23.18	0.01	7.24	384.06	8.86	0.56	13.34
9/1/2024 12:30	16.34	23.06	0.01	7.25	383.47	8.85	0.56	13.34
9/1/2024 12:20	16.34	23.3	0.01	7.22	384.78	8.88	0.56	13.34
9/1/2024 12:10	16.39	22.99	0.01	7.22	385.39	8.89	0.54	13.27
9/1/2024 12:00	16.35	23.19	0.01	7.23	385.28	8.91	0.54	13.24
9/1/2024 11:50	16.28	23.01	0.01	7.22	387.15	8.94	0.52	13.27
9/1/2024 11:40	16.28	23.16	0.01	7.23	386.86	8.94	0.56	13.39
9/1/2024 11:30	16.25	23	0.01	7.22	387.67	8.94	0.54	13.39
9/1/2024 11:20	16.26	23.16	0.01	7.24	387.12	8.95	0.54	13.29
9/1/2024 11:10	16.15	22.94	0.01	7.25	388.68	8.97	0.52	13.32
9/1/2024 11:00	16.03	23.07	0.01	7.23	391.21	8.96	0.52	13.44
9/1/2024 10:50	15.91	22.98	0.01	7.21	394.79	8.98	0.52	13.34
9/1/2024 10:40	15.75	23.07	0.01	7.21	397.21	9	0.52	13.44
9/1/2024 10:30	15.6	23.01	0.01	7.22	400.71	9.01	0.5	13.44
9/1/2024 10:20	15.5	23.11	0.01	7.2	404.79	9	0.49	13.46
9/1/2024 10:10	15.35	22.8	0.01	7.19	408.07	8.95	0.47	13.48
9/1/2024 10:00	15.23	23.12	0.01	7.15	411.23	8.95	0.48	13.48
9/1/2024 9:50	15.17	22.9	0.01	7.16	411.03	8.94	0.51	13.48
9/1/2024 9:40	15.15	23.06	0.01	7.15	411.58	8.91	0.47	13.48

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9/1/2024 9:30	15.13	22.86	0.01	7.17	411.29	8.92	0.48	13.17
9/1/2024 9:20	15.1	23.08	0.01	7.13	414.05	8.92	0.49	12.96
9/1/2024 9:10	15.09	22.75	0.01	7.14	414.81	8.9	0.47	12.76
9/1/2024 9:00	15.07	23.14	0.01	7.13	416.31	8.91	0.47	12.62
9/1/2024 8:50	15.03	22.97	0.01	7.14	416.2	8.88	0.47	12.55
9/1/2024 8:40	15.02	23.13	0.01	7.12	417.76	8.88	0.47	12.48
9/1/2024 8:30	15.01	22.96	0.01	7.12	418.39	8.86	0.48	12.41
9/1/2024 8:20	15.01	23.27	0.01	7.12	418.22	8.87	0.47	12.26
9/1/2024 8:10	15.01	23.16	0.01	7.12	419.22	8.84	0.5	12.12
9/1/2024 8:00	15	23.31	0.01	7.1	420.69	8.82	0.5	12.17
9/1/2024 7:50	15	23.2	0.01	7.15	419.03	8.83	0.58	12.14
9/1/2024 7:40	15.01	23.3	0.01	7.1	421.77	8.82	0.49	12.14
9/1/2024 7:30	15.01	23.26	0.01	7.1	422.14	8.82	0.48	12.12
9/1/2024 7:20	15.02	23.35	0.01	7.11	421.83	8.79	0.47	12.12
9/1/2024 7:10	15.04	23.08	0.01	7.13	420.72	8.78	0.47	12.09
9/1/2024 7:00	15.05	23.4	0.01	7.08	423.34	8.79	0.49	12.07
9/1/2024 6:50	15.06	22.89	0.01	7.1	422.74	8.78	0.48	12.07
9/1/2024 6:40	15.08	23.39	0.01	7.1	422.94	8.77	0.46	12.07
9/1/2024 6:30	15.09	23.37	0.01	7.11	421.99	8.75	0.49	12.07
9/1/2024 6:20	15.11	23.37	0.01	7.1	422.05	8.76	0.49	12.07
9/1/2024 6:10	15.12	23.38	0.01	7.09	422.88	8.74	0.47	12.07
9/1/2024 6:00	15.14	23.52	0.01	7.07	423.68	8.73	0.47	12.07
9/1/2024 5:50	15.15	23.43	0.01	7.1	422.79	8.75	0.48	12
9/1/2024 5:40	15.17	23.54	0.01	7.11	421.79	8.75	0.47	11.97
9/1/2024 5:30	15.19	23.36	0.01	7.11	421.82	8.73	0.48	11.97
9/1/2024 5:20	15.2	23.58	0.01	7.09	422.24	8.73	0.49	12.05
9/1/2024 5:10	15.22	23.46	0.01	7.08	422.46	8.73	0.49	11.97
9/1/2024 5:00	15.24	23.53	0.01	7.09	421.92	8.74	0.49	12.07
9/1/2024 4:50	15.26	23.45	0.01	7.08	422.2	8.72	0.5	12.09
9/1/2024 4:40	15.27	23.56	0.01	7.08	421.92	8.74	0.48	12.09
9/1/2024 4:30	15.29	23.27	0.01	7.08	422.13	8.72	0.49	12.07
9/1/2024 4:20	15.31	23.52	0.01	7.08	421.53	8.7	0.49	11.97
9/1/2024 4:10	15.33	23.47	0.01	7.08	421.91	8.69	0.5	12
9/1/2024 4:00	15.35	23.61	0.01	7.1	420.84	8.69	0.5	12
9/1/2024 3:50	15.37	23.56	0.01	7.08	422	8.7	0.48	12.12
9/1/2024 3:40	15.39	23.57	0.01	7.1	420.95	8.7	0.5	12.12
9/1/2024 3:30	15.41	23.35	0.01	7.08	422.01	8.68	0.5	12.12
9/1/2024 3:20	15.43	23.63	0.01	7.09	420.65	8.68	0.47	12.12
9/1/2024 3:10	15.45	23.51	0.01	7.1	420.44	8.66	0.48	12.02
9/1/2024 3:00	15.47	23.68	0.01	7.09	420.49	8.68	0.5	12.12
9/1/2024 2:50	15.49	23.59	0.01	7.11	420.03	8.68	0.79	12.12
9/1/2024 2:40	15.51	23.7	0.01	7.08	421.25	8.68	0.52	12.02
9/1/2024 2:30	15.53	23.67	0.01	7.07	422.12	8.66	0.53	12.12
9/1/2024 2:20	15.55	23.76	0.01	7.08	420.82	8.66	0.49	12.14
9/1/2024 2:10	15.57	23.31	0.01	7.08	420.89	8.65	0.5	12.14
9/1/2024 2:00	15.59	23.69	0.01	7.08	420.86	8.66	0.5	12.17
9/1/2024 1:50	15.61	23.41	0.01	7.11	419.36	8.63	0.51	12.14

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9/1/2024 1:40	15.63	23.74	0.01	7.09	420.35	8.64	0.52	12.14
9/1/2024 1:30	15.64	23.55	0.01	7.07	421.71	8.63	0.5	12.17
9/1/2024 1:20	15.66	23.74	0.01	7.07	420.92	8.64	0.49	12.17
9/1/2024 1:10	15.68	23.7	0.01	7.07	421.42	8.63	0.5	12.17
9/1/2024 1:00	15.7	23.83	0.01	7.07	421.47	8.63	0.51	12.17
9/1/2024 0:50	15.72	23.28	0.01	7.07	421.48	8.63	0.51	12.17
9/1/2024 0:40	15.75	23.8	0.01	7.07	421.3	8.61	0.51	12.09
9/1/2024 0:30	15.77	23.63	0.01	7.06	422.03	8.61	0.52	12.07
9/1/2024 0:20	15.79	23.82	0.01	7.08	420.92	8.6	0.5	12.07
9/1/2024 0:10	15.81	23.66	0.01	7.08	420.74	8.58	0.62	12.19
9/1/2024 0:00	15.84	23.83	0.01	7.07	421.09	8.59	0.52	12.19
8/31/2024 23:50	15.86	23.75	0.01	7.08	420.32	8.59	0.52	12.19
8/31/2024 23:40	15.89	23.85	0.01	7.08	420.1	8.59	0.51	12.19
8/31/2024 23:30	15.91	23.8	0.01	7.09	419.88	8.58	0.51	12.12
8/31/2024 23:20	15.93	23.88	0.01	7.07	419.8	8.57	0.58	12.12
8/31/2024 23:10	15.95	23.5	0.01	7.08	419.35	8.54	0.54	12.09
8/31/2024 23:00	15.98	23.85	0.01	7.07	419.66	8.56	0.53	12.12
8/31/2024 22:50	16	23.63	0.01	7.09	418.42	8.56	0.51	12.21
8/31/2024 22:40	16.03	23.92	0.01	7.08	418.64	8.55	0.53	12.21
8/31/2024 22:30	16.06	23.73	0.01	7.07	419.46	8.55	0.52	12.21
8/31/2024 22:20	16.08	23.88	0.01	7.08	418.81	8.56	0.54	12.21
8/31/2024 22:10	16.11	23.85	0.01	7.07	419.13	8.53	0.53	12.21
8/31/2024 22:00	16.13	23.89	0.01	7.07	418.43	8.53	0.53	12.24
8/31/2024 21:50	16.16	23.88	0.01	7.08	418.17	8.55	0.52	12.24
8/31/2024 21:40	16.18	23.89	0.01	7.08	418.02	8.53	0.54	12.14
8/31/2024 21:30	16.21	23.41	0.01	7.08	418.4	8.51	0.53	12.24
8/31/2024 21:20	16.24	23.94	0.01	7.06	418.45	8.53	0.53	12.24
8/31/2024 21:10	16.26	23.9	0.01	7.07	418.13	8.5	0.55	12.24
8/31/2024 21:00	16.28	23.92	0.01	7.07	417.41	8.49	0.53	12.24
8/31/2024 20:50	16.31	23.87	0.01	7.06	418.52	8.49	0.54	12.26
8/31/2024 20:40	16.33	23.93	0.01	7.07	417.25	8.49	0.53	12.24
8/31/2024 20:30	16.36	23.93	0.01	7.09	415.53	8.48	0.56	12.24
8/31/2024 20:20	16.38	23.96	0.01	7.08	416.18	8.5	0.56	12.14
8/31/2024 20:10	16.4	23.89	0.01	7.08	415.62	8.5	0.56	12.17
8/31/2024 20:00	16.42	24	0.01	7.09	415.22	8.49	0.55	12.26
8/31/2024 19:50	16.43	23.79	0.01	7.08	415.48	8.48	0.56	12.29
8/31/2024 19:40	16.45	23.93	0.01	7.09	414.22	8.48	0.54	12.29
8/31/2024 19:30	16.46	23.72	0.01	7.08	414.9	8.51	0.57	12.19
8/31/2024 19:20	16.47	23.89	0.01	7.09	413.88	8.5	0.56	12.29
8/31/2024 19:10	16.48	23.84	0.01	7.09	413.85	8.51	0.54	12.31
8/31/2024 19:00	16.49	23.93	0.01	7.09	413.06	8.51	0.55	12.33
8/31/2024 18:50	16.5	23.47	0.01	7.1	412.1	8.5	0.55	12.36
8/31/2024 18:40	16.52	23.96	0.01	7.08	412.56	8.5	0.57	12.36
8/31/2024 18:30	16.53	23.74	0.01	7.07	413.02	8.52	0.54	12.41
8/31/2024 18:20	16.55	23.95	0.01	7.08	411.82	8.52	0.55	12.41
8/31/2024 18:10	16.56	23.5	0.01	7.09	411.42	8.52	0.56	12.43
8/31/2024 18:00	16.58	23.87	0.01	7.07	412.3	8.52	0.59	12.43

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8/31/2024 17:50	16.59	23.75	0.01	7.11	410.37	8.51	0.57	12.45
8/31/2024 17:40	16.6	23.77	0.01	7.1	410.36	8.52	0.57	12.45
8/31/2024 17:30	16.61	23.51	0.01	7.1	410.1	8.53	0.57	12.36
8/31/2024 17:20	16.61	23.71	0.01	7.1	410.1	8.54	0.56	12.43
8/31/2024 17:10	16.6	23.48	0.01	7.12	408.61	8.54	0.54	12.33
8/31/2024 17:00	16.6	23.66	0.01	7.12	407.72	8.57	0.56	12.36
8/31/2024 16:50	16.61	23.58	0.01	7.11	408.4	8.55	0.56	12.43
8/31/2024 16:40	16.62	23.63	0.01	7.13	406.19	8.58	0.54	12.45
8/31/2024 16:30	16.63	23.14	0.01	7.15	405.3	8.59	0.63	12.65
8/31/2024 16:20	16.65	23.49	0.01	7.15	403.88	8.62	0.55	12.84
8/31/2024 16:10	16.67	23.51	0.01	7.19	401.32	8.65	0.57	13.2
8/31/2024 16:00	16.65	23.54	0.01	7.18	401.47	8.65	0.56	13.22
8/31/2024 15:50	16.65	23.11	0.01	7.17	401.07	8.64	0.56	12.55
8/31/2024 15:40	16.63	23.47	0.01	7.17	400.88	8.68	0.54	12.72
8/31/2024 15:30	16.6	23.27	0.01	7.17	400.18	8.69	0.54	12.69
8/31/2024 15:20	16.56	23.51	0.01	7.18	399.29	8.71	0.57	12.88
8/31/2024 15:10	16.54	23.38	0.01	7.18	398.67	8.72	0.56	12.88
8/31/2024 15:00	16.51	23.43	0.01	7.18	397.62	8.72	0.56	13.15
8/31/2024 14:50	16.5	23.04	0.01	7.23	394.22	8.75	0.55	13.34
8/31/2024 14:40	16.47	23.36	0.01	7.21	393.6	8.77	0.57	13.32
8/31/2024 14:30	16.45	23.35	0.01	7.2	393.26	8.79	0.56	13.29
8/31/2024 14:20	16.41	23.41	0.01	7.22	391.15	8.8	0.53	13.27
8/31/2024 14:10	16.37	23.11	0.01	7.21	390.18	8.81	0.53	13.24
8/31/2024 14:00	16.34	23.42	0.01	7.21	389.24	8.83	0.55	13.24
8/31/2024 13:50	16.28	23.36	0.01	7.2	388.1	8.85	0.52	13.15
8/31/2024 13:40	16.15	23.41	0.01	7.22	385.19	8.85	0.54	13.27
8/31/2024 13:30	16.1	23.06	0.01	7.2	385.4	8.87	0.55	13.27
8/31/2024 13:20	16.06	23.41	0.01	7.21	384.33	8.89	0.53	13.2
8/31/2024 13:10	16.11	23.42	0.01	7.22	384.12	8.9	0.52	13.32
8/31/2024 13:00	16.17	23.55	0.01	7.2	384.74	8.92	0.54	13.34
8/31/2024 12:50	16.14	23.49	0.01	7.25	382.95	8.93	0.55	13.24
8/31/2024 12:40	16.15	23.55	0.01	7.22	384.32	8.95	0.52	13.34
8/31/2024 12:30	16.15	23.42	0.01	7.22	383.75	8.97	0.53	13.36
8/31/2024 12:20	16.16	23.51	0.01	7.21	384.61	8.95	0.54	13.36
8/31/2024 12:10	16.12	23.44	0.01	7.22	386.56	8.99	0.52	13.36
8/31/2024 12:00	16.08	23.62	0.01	7.21	388	9	0.52	13.39
8/31/2024 11:50	16.03	23.6	0.01	7.22	388.63	9.01	0.51	13.39
8/31/2024 11:40	16	23.66	0.01	7.2	390.41	9.03	0.52	13.39
8/31/2024 11:30	15.97	23.45	0.01	7.2	391.49	9.03	0.53	13.29
8/31/2024 11:20	15.94	23.66	0.01	7.2	391.49	9.07	0.52	13.41
8/31/2024 11:10	15.88	23.18	0.01	7.2	394.38	9.06	0.52	13.41
8/31/2024 11:00	15.76	23.6	0.01	7.21	395.79	9.08	0.52	13.44
8/31/2024 10:50	15.64	23.55	0.01	7.19	399.82	9.09	0.53	13.44
8/31/2024 10:40	15.49	23.61	0.01	7.18	402.96	9.1	0.49	13.46
8/31/2024 10:30	15.33	23.33	0.01	7.19	406.26	9.1	0.49	13.44
8/31/2024 10:20	15.19	23.65	0.01	7.17	410.95	9.08	0.48	13.46
8/31/2024 10:10	15.03	23.36	0.01	7.15	415.41	9.05	0.47	13.36

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8/31/2024 10:00	14.88	23.61	0.01	7.14	418.2	9.04	0.48	13.36
8/31/2024 9:50	14.83	23.51	0.01	7.15	417.77	9.02	0.47	13.51
8/31/2024 9:40	14.8	23.7	0.01	7.13	418.9	9.03	0.46	13.51
8/31/2024 9:30	14.79	23.38	0.01	7.12	420.16	9.01	0.45	13.48
8/31/2024 9:20	14.75	23.75	0.01	7.12	421.42	9.03	0.45	13.05
8/31/2024 9:10	14.74	23.59	0.01	7.13	421.96	9.02	0.44	12.91
8/31/2024 9:00	14.72	23.67	0.01	7.12	423.3	9	0.43	12.55
8/31/2024 8:50	14.68	23.65	0.01	7.14	423.27	9	0.45	12.5
8/31/2024 8:40	14.66	23.81	0.01	7.12	424.34	9	0.45	12.45
8/31/2024 8:30	14.65	23.33	0.01	7.11	425.89	8.99	0.47	12.41
8/31/2024 8:20	14.64	23.76	0.01	7.11	425.51	8.97	0.46	12.33
8/31/2024 8:10	14.63	23.56	0.01	7.11	426.59	8.97	0.46	12.29
8/31/2024 8:00	14.63	23.72	0.01	7.1	427.01	8.95	0.43	12.26
8/31/2024 7:50	14.63	23.53	0.01	7.09	427.79	8.96	0.43	12.19
8/31/2024 7:40	14.63	23.86	0.01	7.11	427.31	8.96	0.46	12.05
8/31/2024 7:30	14.63	23.65	0.01	7.11	427.79	8.95	0.46	12.12
8/31/2024 7:20	14.64	23.88	0.01	7.1	427.66	8.92	0.46	12.12
8/31/2024 7:10	14.65	23.83	0.01	7.08	429.05	8.93	0.45	12
8/31/2024 7:00	14.66	23.88	0.01	7.09	428.27	8.92	0.44	12.07
8/31/2024 6:50	14.66	23.52	0.01	7.11	427.77	8.9	0.45	11.97
8/31/2024 6:40	14.68	23.85	0.01	7.09	428.15	8.91	0.46	11.97
8/31/2024 6:30	14.68	23.83	0.01	7.08	429.08	8.89	0.45	11.97
8/31/2024 6:20	14.69	23.97	0.01	7.09	428.55	8.91	0.45	12.07
8/31/2024 6:10	14.7	23.95	0.01	7.09	428.73	8.89	0.45	12.07
8/31/2024 6:00	14.71	24	0.01	7.09	428.32	8.9	0.45	12.07
8/31/2024 5:50	14.72	23.59	0.01	7.09	428.72	8.91	0.48	12.09
8/31/2024 5:40	14.73	23.99	0.01	7.09	428.24	8.89	0.46	12.09
8/31/2024 5:30	14.73	24.02	0.01	7.12	426.76	8.87	0.47	12.09
8/31/2024 5:20	14.74	24.1	0.01	7.07	429.32	8.87	0.45	12.09
8/31/2024 5:10	14.75	23.81	0.01	7.09	428.73	8.89	0.48	12.07
8/31/2024 5:00	14.76	24.11	0.01	7.08	428.93	8.88	0.42	12
8/31/2024 4:50	14.78	23.99	0.01	7.08	429.6	8.87	0.45	12
8/31/2024 4:40	14.79	24.13	0.01	7.09	428.87	8.88	0.46	12.09
8/31/2024 4:30	14.8	24.12	0.01	7.08	428.81	8.88	0.46	12.02
8/31/2024 4:20	14.81	24.2	0.01	7.08	428.42	8.88	0.45	12.02
8/31/2024 4:10	14.82	23.74	0.01	7.09	427.83	8.87	0.49	12.09
8/31/2024 4:00	14.84	24.14	0.01	7.09	427.25	8.86	0.47	12
8/31/2024 3:50	14.85	24.11	0.01	7.07	428.38	8.86	0.47	12.02
8/31/2024 3:40	14.86	24.17	0.01	7.09	427.16	8.87	0.47	12.02
8/31/2024 3:30	14.88	24.04	0.01	7.08	427.24	8.86	0.47	12.14
8/31/2024 3:20	14.89	24.26	0.01	7.09	426.45	8.86	0.49	12.14
8/31/2024 3:10	14.9	24.24	0.01	7.09	426.34	8.84	0.47	12.14
8/31/2024 3:00	14.92	24.26	0.01	7.08	426.1	8.83	0.46	12.14
8/31/2024 2:50	14.93	24.18	0.01	7.09	425.42	8.85	0.48	12.14
8/31/2024 2:40	14.95	24.39	0.01	7.07	426.01	8.82	0.61	12.14
8/31/2024 2:30	14.96	24.3	0.01	7.07	426.15	8.81	0.46	12.14
8/31/2024 2:20	14.98	24.37	0.01	7.07	428.38	8.82	0.47	12.07

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8/31/2024 2:10	14.99	24.35	0.01	7.07	429.04	8.82	0.48	12.17
8/31/2024 2:00	15.01	24.4	0.01	7.08	428.26	8.83	0.49	12.17
8/31/2024 1:50	15.02	24.31	0.01	7.08	428.5	8.82	0.46	12.17
8/31/2024 1:40	15.04	24.48	0.01	7.07	427.99	8.81	0.47	12.07
8/31/2024 1:30	15.05	24.35	0.01	7.1	426.66	8.81	0.49	12.17
8/31/2024 1:20	15.07	24.52	0.01	7.08	427.45	8.82	0.46	12.07
8/31/2024 1:10	15.09	24.46	0.01	7.08	427.82	8.81	0.48	12.07
8/31/2024 1:00	15.1	24.53	0.01	7.06	428.03	8.8	0.49	12.19
8/31/2024 0:50	15.11	24.51	0.01	7.07	427.99	8.81	0.48	12.19
8/31/2024 0:40	15.13	24.54	0.01	7.07	426.66	8.79	0.48	12.12
8/31/2024 0:30	15.14	24.35	0.01	7.07	427.49	8.8	0.48	12.19
8/31/2024 0:20	15.16	24.62	0.01	7.08	425.82	8.8	0.49	12.19
8/31/2024 0:10	15.18	24.47	0.01	7.05	427.58	8.76	0.49	12.12
8/31/2024 0:00	15.2	24.7	0.01	7.06	426.38	8.76	0.48	12.09
8/30/2024 23:50	15.21	24.6	0.01	7.07	427.31	8.78	0.48	12.09
8/30/2024 23:40	15.23	24.7	0.01	7.06	426.83	8.78	0.5	12.12
8/30/2024 23:30	15.25	24.48	0.01	7.07	426.15	8.77	0.48	12.21
8/30/2024 23:20	15.28	24.71	0.01	7.07	425.49	8.75	0.49	12.21
8/30/2024 23:10	15.3	24.65	0.01	7.06	426.5	8.75	1.21	12.21
8/30/2024 23:00	15.32	24.71	0.01	7.06	425.49	8.76	0.53	12.21
8/30/2024 22:50	15.34	24.68	0.01	7.08	424.7	8.72	0.5	12.21
8/30/2024 22:40	15.36	24.79	0.01	7.07	424.76	8.74	0.47	12.12
8/30/2024 22:30	15.38	24.6	0.01	7.07	425.13	8.75	0.49	12.14
8/30/2024 22:20	15.4	24.81	0.01	7.07	424.68	8.74	0.49	12.12
8/30/2024 22:10	15.41	24.79	0.01	7.06	425.46	8.71	0.5	12.14
8/30/2024 22:00	15.43	24.8	0.01	7.06	425	8.73	0.48	12.24
8/30/2024 21:50	15.45	24.55	0.01	7.09	424.03	8.73	0.48	12.24
8/30/2024 21:40	15.47	24.91	0.01	7.06	424.66	8.73	0.49	12.24
8/30/2024 21:30	15.49	24.74	0.01	7.08	423.79	8.7	0.5	12.17
8/30/2024 21:20	15.51	24.88	0.01	7.07	423.44	8.71	0.5	12.24
8/30/2024 21:10	15.53	24.74	0.01	7.08	423	8.69	0.47	12.21
8/30/2024 21:00	15.55	24.97	0.01	7.07	422.79	8.69	0.5	12.26
8/30/2024 20:50	15.57	24.9	0.01	7.08	422.39	8.7	0.52	12.26
8/30/2024 20:40	15.59	25.01	0.01	7.08	421.58	8.7	0.48	12.26
8/30/2024 20:30	15.6	24.81	0.01	7.07	421.96	8.69	0.5	12.26
8/30/2024 20:20	15.62	25.02	0.01	7.08	421.21	8.67	0.52	12.26
8/30/2024 20:10	15.63	24.94	0.01	7.08	421.14	8.67	0.49	12.17
8/30/2024 20:00	15.64	25.02	0.01	7.08	420.14	8.67	0.49	12.19
8/30/2024 19:50	15.65	24.76	0.01	7.07	421.31	8.69	0.49	12.29
8/30/2024 19:40	15.67	24.94	0.01	7.08	420.11	8.69	0.51	12.31
8/30/2024 19:30	15.68	24.95	0.01	7.1	418.84	8.68	0.51	12.24
8/30/2024 19:20	15.69	24.97	0.01	7.06	419.56	8.7	0.49	12.24
8/30/2024 19:10	15.7	24.64	0.01	7.08	419.05	8.7	0.51	12.33
8/30/2024 19:00	15.72	24.97	0.01	7.08	418.17	8.7	0.51	12.33
8/30/2024 18:50	15.73	24.81	0.01	7.06	418.7	8.69	0.52	12.26
8/30/2024 18:40	15.75	24.97	0.01	7.07	417.52	8.69	0.76	12.29
8/30/2024 18:30	15.77	24.78	0.01	7.07	418.02	8.71	0.51	12.43

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8/30/2024 18:20	15.79	24.89	0.01	7.08	416.89	8.72	0.5	12.48
8/30/2024 18:10	15.81	24.41	0.01	7.09	416.15	8.71	0.51	12.5
8/30/2024 18:00	15.83	24.71	0.01	7.09	415.6	8.71	0.52	12.5
8/30/2024 17:50	15.84	24.57	0.01	7.1	414.91	8.71	0.51	12.53
8/30/2024 17:40	15.86	24.73	0.01	7.11	413.65	8.71	0.51	12.55
8/30/2024 17:30	15.87	24.55	0.01	7.1	413.72	8.72	0.54	12.55
8/30/2024 17:20	15.87	24.7	0.01	7.12	411.81	8.73	0.53	12.53
8/30/2024 17:10	15.87	24.51	0.01	7.13	411.21	8.75	0.51	12.57
8/30/2024 17:00	15.87	24.66	0.01	7.14	409.63	8.74	0.51	12.57
8/30/2024 16:50	15.88	24.47	0.01	7.15	409.1	8.77	0.56	12.45
8/30/2024 16:40	15.89	24.67	0.01	7.15	407.58	8.77	0.51	12.57
8/30/2024 16:30	15.9	24.51	0.01	7.17	406.17	8.79	0.51	13.05
8/30/2024 16:20	15.92	24.64	0.01	7.17	405.04	8.8	0.53	12.81
8/30/2024 16:10	15.93	24.28	0.01	7.2	403.15	8.8	0.54	12.76
8/30/2024 16:00	15.94	24.71	0.01	7.18	403.47	8.83	0.52	13.32
8/30/2024 15:50	15.95	24.65	0.01	7.23	400.54	8.83	0.63	12.79
8/30/2024 15:40	15.93	24.62	0.01	7.18	402.91	8.83	0.54	12.55
8/30/2024 15:30	15.88	24.52	0.01	7.19	401.04	8.85	0.5	12.67
8/30/2024 15:20	15.87	24.66	0.01	7.18	400.66	8.86	0.5	12.6
8/30/2024 15:10	15.85	24.54	0.01	7.17	400.93	8.89	0.69	12.65
8/30/2024 15:00	15.83	24.72	0.01	7.2	398.56	8.89	0.52	12.88
8/30/2024 14:50	15.83	24.53	0.01	7.18	397.7	8.9	0.5	13.22
8/30/2024 14:40	15.8	24.72	0.01	7.2	395.46	8.92	0.51	13.34
8/30/2024 14:30	15.74	24.59	0.01	7.21	395.04	8.94	0.5	13.34
8/30/2024 14:20	15.7	24.76	0.01	7.19	394.55	8.95	0.48	13.32
8/30/2024 14:10	15.65	24.56	0.01	7.22	392.47	8.97	0.5	13.32
8/30/2024 14:00	15.6	24.74	0.01	7.21	390.67	8.97	0.49	13.32
8/30/2024 13:50	15.51	24.64	0.01	7.21	389.78	9	0.49	13.32
8/30/2024 13:40	15.5	24.77	0.01	7.21	387.63	9.01	0.49	13.32
8/30/2024 13:30	15.46	24.59	0.01	7.24	385.96	9.02	0.51	13.22
8/30/2024 13:20	15.42	24.77	0.01	7.21	386.72	9.07	0.49	13.22
8/30/2024 13:10	15.37	24.61	0.01	7.2	387.14	9.06	0.49	13.36
8/30/2024 13:00	15.33	24.82	0.01	7.21	386.5	9.08	0.48	13.39
8/30/2024 12:50	15.34	24.66	0.01	7.19	386.96	9.11	0.48	13.41
8/30/2024 12:40	15.3	24.79	0.01	7.21	385.8	9.11	0.46	13.41
8/30/2024 12:30	15.3	24.84	0.01	7.21	386.99	9.13	0.46	13.44
8/30/2024 12:20	15.34	24.96	0.01	7.22	386.33	9.11	0.49	13.32
8/30/2024 12:10	15.31	24.82	0.01	7.21	388.12	9.16	0.45	13.44
8/30/2024 12:00	15.26	24.94	0.01	7.22	388.03	9.14	0.47	13.36
8/30/2024 11:50	15.24	24.95	0.01	7.2	390.87	9.17	0.45	13.34
8/30/2024 11:40	15.21	25.09	0.01	7.2	391.61	9.16	0.49	13.46
8/30/2024 11:30	15.18	24.66	0.01	7.21	392.43	9.17	0.48	13.44
8/30/2024 11:20	15.17	25.03	0.01	7.21	393.22	9.19	0.5	13.36
8/30/2024 11:10	15.1	24.85	0.01	7.21	395.1	9.2	0.45	13.46
8/30/2024 11:00	15	25.09	0.01	7.21	397.62	9.21	0.5	13.46
8/30/2024 10:50	14.88	24.7	0.01	7.2	401.06	9.23	0.47	13.36
8/30/2024 10:40	14.76	25	0.01	7.2	403.66	9.24	0.44	13.48

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8/30/2024 10:30	14.61	24.98	0.01	7.18	408.15	9.23	0.46	13.51
8/30/2024 10:20	14.48	25.04	0.01	7.17	412.02	9.23	0.47	13.51
8/30/2024 10:10	14.35	24.87	0.01	7.16	416.65	9.21	0.43	13.53
8/30/2024 10:00	14.21	25.14	0.01	7.14	420.02	9.18	0.45	13.53
8/30/2024 9:50	14.16	25	0.01	7.15	420.04	9.18	0.41	13.44
8/30/2024 9:40	14.14	25.15	0.01	7.14	420.57	9.21	0.44	13.44
8/30/2024 9:30	14.12	25.04	0.01	7.13	422.46	9.19	0.44	13.08
8/30/2024 9:20	14.09	25.22	0.01	7.12	423.27	9.17	0.41	13
8/30/2024 9:10	14.07	24.94	0.01	7.13	423.7	9.18	0.43	12.84
8/30/2024 9:00	14.05	25.15	0.01	7.11	426.35	9.18	0.41	12.55
8/30/2024 8:50	14.02	24.93	0.01	7.12	427.41	9.18	0.43	12.48
8/30/2024 8:40	14	25.28	0.01	7.11	427.56	9.13	0.41	12.31
8/30/2024 8:30	13.99	25.25	0.01	7.1	428.9	9.16	0.4	12.33
8/30/2024 8:20	13.98	25.42	0.01	7.12	428	9.14	0.42	12.24
8/30/2024 8:10	13.97	25.27	0.01	7.11	429.68	9.14	0.42	12.29
8/30/2024 8:00	13.97	25.53	0.01	7.12	428.33	9.14	0.41	12.29
8/30/2024 7:50	13.96	25.45	0.01	7.1	430.38	9.13	0.4	12.24
8/30/2024 7:40	13.96	25.47	0.01	7.1	430.25	9.12	0.41	12.19
8/30/2024 7:30	13.97	25.23	0.01	7.11	430.48	9.12	0.43	12.14
8/30/2024 7:20	13.97	25.62	0.01	7.12	429.73	9.12	0.43	12.12
8/30/2024 7:10	13.98	25.64	0.01	7.1	431.43	9.1	0.42	12.02
8/30/2024 7:00	13.99	25.7	0.01	7.11	430.79	9.1	0.44	12.09
8/30/2024 6:50	13.99	25.58	0.01	7.1	431.69	9.1	0.44	12.09
8/30/2024 6:40	14	25.81	0.01	7.1	431.14	9.07	0.41	12.07
8/30/2024 6:30	14.02	25.69	0.01	7.1	431.52	9.06	0.42	12.09
8/30/2024 6:20	14.03	25.88	0.01	7.09	431.13	9.06	0.44	12
8/30/2024 6:10	14.04	25.56	0.01	7.1	431.14	9.07	0.41	11.97
8/30/2024 6:00	14.06	25.92	0.01	7.09	431.55	9.06	0.44	12.07
8/30/2024 5:50	14.07	25.76	0.01	7.11	430.75	9.07	0.42	12.09
8/30/2024 5:40	14.08	25.98	0.01	7.09	431.23	9.06	0.42	12.07
8/30/2024 5:30	14.09	25.64	0.01	7.11	430.61	9.06	0.42	12
8/30/2024 5:20	14.11	26.04	0.01	7.09	431.44	9.07	0.45	12.09
8/30/2024 5:10	14.13	25.72	0.01	7.11	430.44	9.03	0.4	12.09
8/30/2024 5:00	14.15	26.07	0.01	7.09	430.97	9.04	0.42	12.09
8/30/2024 4:50	14.16	25.57	0.01	7.09	431.69	9.05	0.43	12.09
8/30/2024 4:40	14.18	26.21	0.01	7.09	430.85	9.04	0.43	12
8/30/2024 4:30	14.19	25.63	0.01	7.11	430.3	9.04	0.45	12
8/30/2024 4:20	14.21	26.34	0.01	7.07	431.54	9.03	0.43	12.12
8/30/2024 4:10	14.22	26.16	0.01	7.09	430.79	9.02	0.42	12.09
8/30/2024 4:00	14.23	26.27	0.01	7.09	430.46	9.01	0.44	12.12
8/30/2024 3:50	14.25	26.3	0.01	7.1	430.55	9.01	0.43	12.12
8/30/2024 3:40	14.27	26.46	0.01	7.08	430.74	9.01	0.44	12.02
8/30/2024 3:30	14.28	26.42	0.01	7.11	429.09	9.02	0.41	12.12
8/30/2024 3:20	14.3	26.46	0.01	7.09	429.31	9.01	0.45	12.02
8/30/2024 3:10	14.31	26.46	0.01	7.12	428	9.01	0.42	12.02
8/30/2024 3:00	14.33	26.57	0.01	7.09	429.16	8.99	0.44	12.05
8/30/2024 2:50	14.34	26.2	0.01	7.09	429.51	9	0.43	12.14

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8/30/2024 2:40	14.36	26.71	0.01	7.08	429.83	8.99	0.47	12.14
8/30/2024 2:30	14.37	26.34	0.01	7.12	427.96	9	0.42	12.14
8/30/2024 2:20	14.39	26.9	0.01	7.08	429.48	9	0.89	12.14
8/30/2024 2:10	14.4	26.87	0.01	7.13	426.88	8.99	0.45	12.14
8/30/2024 2:00	14.41	26.97	0.01	7.1	427.84	9	0.49	12.17
8/30/2024 1:50	14.42	27.01	0.01	7.08	429.12	8.97	0.44	12.17
8/30/2024 1:40	14.44	27.16	0.01	7.09	428.15	8.97	0.44	12.17
8/30/2024 1:30	14.45	27.16	0.01	7.09	428.15	8.97	0.45	12.17
8/30/2024 1:20	14.47	27.25	0.01	7.07	428.83	8.97	0.44	12.17
8/30/2024 1:10	14.48	27.26	0.01	7.09	428.41	8.97	0.46	12.07
8/30/2024 1:00	14.5	27.42	0.01	7.1	427.55	8.94	0.45	12.17
8/30/2024 0:50	14.51	27.45	0.01	7.08	428.09	8.94	0.5	12.17
8/30/2024 0:40	14.52	27.65	0.01	7.11	426.36	8.96	0.45	12.07
8/30/2024 0:30	14.53	27.62	0.01	7.1	427	8.96	0.47	12.09
8/30/2024 0:20	14.55	27.83	0.01	7.09	426.38	8.95	0.46	12.09
8/30/2024 0:10	14.56	27.66	0.01	7.1	426.37	8.95	0.46	12.09
8/30/2024 0:00	14.58	28.01	0.01	7.08	426.96	8.93	0.46	12.19
8/29/2024 23:50	14.59	27.89	0.01	7.08	426.67	8.95	0.45	12.09
8/29/2024 23:40	14.61	28.18	0.01	7.08	426.16	8.94	0.46	12.09
8/29/2024 23:30	14.63	28.06	0.01	7.09	425.58	8.93	0.45	12.12
8/29/2024 23:20	14.65	28.32	0.01	7.06	426.62	8.93	0.48	12.19
8/29/2024 23:10	14.67	28.09	0.01	7.07	426.15	8.9	0.43	12.21
8/29/2024 23:00	14.68	28.5	0.01	7.09	424.62	8.92	0.45	12.21
8/29/2024 22:50	14.7	28.5	0.01	7.08	425.23	8.9	0.45	12.21
8/29/2024 22:40	14.73	28.63	0.01	7.1	423.75	8.91	0.5	12.24
8/29/2024 22:30	14.74	28.49	0.01	7.1	423.78	8.92	0.45	12.24
8/29/2024 22:20	14.76	28.87	0.01	7.1	423.27	8.9	0.46	12.14
8/29/2024 22:10	14.77	28.85	0.01	7.09	423.93	8.92	0.46	12.14
8/29/2024 22:00	14.79	29.04	0.01	7.1	422.72	8.89	0.47	12.24
8/29/2024 21:50	14.81	29	0.01	7.09	423.26	8.89	0.45	12.24
8/29/2024 21:40	14.83	29.35	0.01	7.08	422.77	8.89	0.48	12.24
8/29/2024 21:30	14.84	29.27	0.01	7.1	421.99	8.89	0.46	12.24
8/29/2024 21:20	14.86	29.46	0.01	7.09	421.44	8.86	0.46	12.24
8/29/2024 21:10	14.88	29.54	0.01	7.09	421.61	8.89	0.45	12.24
8/29/2024 21:00	14.9	29.71	0.01	7.1	419.85	8.87	0.45	12.17
8/29/2024 20:50	14.92	29.77	0.01	7.09	420.56	8.86	0.48	12.17
8/29/2024 20:40	14.94	30.01	0.01	7.1	419.23	8.87	0.49	12.26
8/29/2024 20:30	14.95	30.02	0.01	7.1	419.07	8.86	0.44	12.26
8/29/2024 20:20	14.97	30.16	0.01	7.1	417.88	8.87	0.47	12.26
8/29/2024 20:10	14.99	29.96	0.01	7.11	417.64	8.87	0.46	12.26
8/29/2024 20:00	15	30.44	0.01	7.11	416.47	8.85	0.51	12.26
8/29/2024 19:50	15.01	30.48	0.01	7.11	416.98	8.86	0.47	12.19
8/29/2024 19:40	15.02	30.72	0.01	7.11	415.89	8.88	0.48	12.26
8/29/2024 19:30	15.03	30.72	0.01	7.1	416.61	8.85	0.46	12.24
8/29/2024 19:20	15.04	30.97	0.01	7.1	415.13	8.88	0.47	12.33
8/29/2024 19:10	15.05	30.97	0.01	7.09	415.73	8.87	0.49	12.33
8/29/2024 19:00	15.06	31.14	0.02	7.1	413.84	8.88	0.47	12.33

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8/29/2024 18:50	15.08	31.07	0.02	7.1	413.87	8.86	0.48	12.36
8/29/2024 18:40	15.09	31.53	0.02	7.09	413.23	8.88	0.46	12.36
8/29/2024 18:30	15.11	31.6	0.02	7.11	411.73	8.86	0.47	12.38
8/29/2024 18:20	15.13	31.81	0.02	7.11	411.01	8.87	0.47	12.26
8/29/2024 18:10	15.15	31.25	0.02	7.12	410.85	8.87	0.49	12.41
8/29/2024 18:00	15.17	32.18	0.02	7.12	409.65	8.88	0.49	12.31
8/29/2024 17:50	15.18	32.27	0.02	7.14	408.68	8.89	0.52	12.43
8/29/2024 17:40	15.19	32.55	0.02	7.13	407.78	8.9	0.5	12.45
8/29/2024 17:30	15.2	32.63	0.02	7.14	407.29	8.89	0.46	12.41
8/29/2024 17:20	15.2	32.87	0.02	7.15	405.36	8.9	2.12	12.41
8/29/2024 17:10	15.19	33	0.02	7.13	406.19	8.91	0.51	12.48
8/29/2024 17:00	15.19	33.39	0.02	7.16	403.75	8.9	0.47	12.45
8/29/2024 16:50	15.19	33.59	0.02	7.15	403.69	8.93	0.46	12.57
8/29/2024 16:40	15.2	33.96	0.02	7.17	401.58	8.94	0.48	12.6
8/29/2024 16:30	15.2	34.22	0.02	7.19	400.29	8.96	0.47	12.55
8/29/2024 16:20	15.2	34.74	0.02	7.17	399.95	8.95	0.48	13.24
8/29/2024 16:10	15.21	34.98	0.02	7.21	398.31	8.97	0.49	12.93
8/29/2024 16:00	15.21	35.51	0.02	7.18	398.19	8.97	0.48	13.34
8/29/2024 15:50	15.19	35.73	0.02	7.2	397.03	9	0.48	12.72
8/29/2024 15:40	15.17	36.47	0.02	7.19	396.4	9	0.48	12.86
8/29/2024 15:30	15.15	36.94	0.02	7.19	395.97	9.02	0.53	12.72
8/29/2024 15:30	15.15	36.94	0.02	7.19	395.97	9.02	0.53	12.72
8/29/2024 15:20	15.13	37.65	0.02	7.19	394.13	9.03	0.46	13
8/29/2024 15:10	15.1	38.2	0.02	7.21	393.08	9.04	0.5	13.15
8/29/2024 15:00	15.08	39.09	0.02	7.21	390.85	9.07	0.46	13.2
8/29/2024 14:50	15.07	39.86	0.02	7.2	390.96	9.07	0.5	13.2
8/29/2024 14:40	15.04	41.02	0.02	7.21	388.53	9.08	0.45	13.2
8/29/2024 14:30	15.01	41.8	0.02	7.21	387.83	9.09	0.46	13.39
8/29/2024 14:20	14.96	43.05	0.02	7.21	385.21	9.12	0.46	13.36
8/29/2024 14:10	14.91	43.89	0.02	7.21	384.16	9.13	0.49	13.36
8/29/2024 14:00	14.85	45.03	0.02	7.21	381.64	9.14	0.48	13.24
8/29/2024 13:50	14.78	45.04	0.02	7.22	380.18	9.17	0.47	13.34
8/29/2024 13:40	14.73	46.69	0.02	7.21	378.46	9.2	1	13.39
8/29/2024 13:30	14.69	46.44	0.02	7.22	377.72	9.22	0.44	13.27
8/29/2024 13:20	14.65	47.89	0.02	7.21	376.77	9.19	0.45	13.32
8/29/2024 13:10	14.61	48.13	0.02	7.22	377.26	9.23	0.46	13.44
8/29/2024 13:00	14.58	49.06	0.02	7.21	376.73	9.23	0.47	13.46
8/29/2024 12:50	14.57	49.13	0.02	7.21	377.75	9.24	0.43	13.46
8/29/2024 12:40	14.57	49.89	0.03	7.21	376.41	9.27	0.47	13.48
8/29/2024 12:30	14.54	49.74	0.03	7.21	378.08	9.29	0.44	13.48
8/29/2024 12:20	14.55	50.45	0.03	7.22	377.2	9.28	0.47	13.48
8/29/2024 12:10	14.5	49.71	0.03	7.21	378.59	9.3	0.43	13.51
8/29/2024 12:00	14.48	50.83	0.03	7.22	377.59	9.29	0.44	13.39
8/29/2024 11:50	14.44	50.13	0.03	7.22	378.76	9.34	0.44	13.39
8/29/2024 11:40	14.42	50.99	0.03	7.22	379.5	9.33	0.45	13.48
8/29/2024 11:30	14.4	50.68	0.03	7.22	380.72	9.35	0.43	13.51
8/29/2024 11:20	14.36	51.23	0.03	7.21	381.61	9.36	0.44	13.39

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8/29/2024 11:10	14.32	50.49	0.03	7.22	383.17	9.37	0.4	13.51
8/29/2024 11:00	14.23	51.39	0.03	7.21	384.32	9.39	0.44	13.53
8/29/2024 10:50	14.11	51.04	0.03	7.21	387.11	9.4	0.44	13.44
8/29/2024 10:40	13.99	51.3	0.03	7.2	389.5	9.41	0.41	13.53
8/29/2024 10:30	13.88	51.27	0.03	7.2	393.85	9.41	0.4	13.56
8/29/2024 10:20	13.76	51.49	0.03	7.2	397.29	9.39	0.42	13.58
8/29/2024 10:10	13.61	51.37	0.03	7.18	402.87	9.4	0.37	13.58
8/29/2024 10:00	13.48	51.75	0.03	7.19	405.18	9.39	0.39	13.58
8/29/2024 9:50	13.43	51.93	0.03	7.18	406.09	9.37	0.37	13.6
8/29/2024 9:40	13.41	52.43	0.03	7.19	405.98	9.38	0.38	13.6
8/29/2024 9:30	13.39	52.48	0.03	7.17	407.53	9.39	0.38	12.98
8/29/2024 9:20	13.37	52.88	0.03	7.17	407.67	9.38	0.39	13
8/29/2024 9:10	13.35	52.86	0.03	7.16	409.31	9.4	0.39	12.88
8/29/2024 9:00	13.33	53.05	0.03	7.16	409.98	9.38	0.37	12.48
8/29/2024 8:50	13.29	53.15	0.03	7.15	411.99	9.37	0.39	12.5
8/29/2024 8:40	13.28	53.71	0.03	7.16	411.54	9.37	0.67	12.43
8/29/2024 8:30	13.26	53.67	0.03	7.16	412.31	9.36	0.36	12.36
8/29/2024 8:20	13.25	54.26	0.03	7.15	412.7	9.34	0.38	12.29
8/29/2024 8:10	13.23	54.41	0.03	7.15	413.61	9.35	0.4	12.17
8/29/2024 8:00	13.22	55.06	0.03	7.16	413.49	9.35	0.37	12.17
8/29/2024 7:50	13.21	55.03	0.03	7.14	414.93	9.35	0.46	12.21
8/29/2024 7:40	13.21	55.45	0.03	7.16	414.19	9.35	0.38	12.09
8/29/2024 7:30	13.21	55.23	0.03	7.15	415.25	9.34	0.39	12.14
8/29/2024 7:20	13.21	55.98	0.03	7.15	414.82	9.33	0.34	12.12
8/29/2024 7:10	13.22	56.21	0.03	7.15	414.94	9.33	0.37	12
8/29/2024 7:00	13.23	56.76	0.03	7.15	414.93	9.33	0.39	12
8/29/2024 6:50	13.24	56.72	0.03	7.14	416.59	9.31	0.38	12.12
8/29/2024 6:40	13.25	57.18	0.03	7.15	415.72	9.32	0.43	12.02
8/29/2024 6:30	13.26	57.31	0.03	7.14	416.64	9.31	0.4	12.12
8/29/2024 6:20	13.28	57.5	0.03	7.15	415.68	9.29	0.38	12.12
8/29/2024 6:10	13.29	57.36	0.03	7.13	416.56	9.3	0.41	12.12
8/29/2024 6:00	13.31	58.1	0.03	7.15	414.83	9.28	0.38	12.12
8/29/2024 5:50	13.32	58.02	0.03	7.13	415.78	9.27	0.37	12.12
8/29/2024 5:40	13.34	58.24	0.03	7.14	414.25	9.29	0.36	12.09
8/29/2024 5:30	13.36	58.36	0.03	7.15	414	9.29	0.38	12
8/29/2024 5:20	13.37	58.76	0.03	7.15	413.5	9.27	0.39	12
8/29/2024 5:10	13.38	58.73	0.03	7.15	413.64	9.27	0.38	12.09
8/29/2024 5:00	13.39	59.04	0.03	7.15	412.84	9.26	0.39	12.12
8/29/2024 4:50	13.4	58.89	0.03	7.14	413.71	9.26	0.37	12.12
8/29/2024 4:40	13.41	59.3	0.03	7.15	412.43	9.26	0.38	12.12
8/29/2024 4:30	13.42	58.8	0.03	7.14	413.02	9.26	0.37	12.09
8/29/2024 4:20	13.44	59.22	0.03	7.15	411.83	9.25	0.39	12.09
8/29/2024 4:10	13.46	58.69	0.03	7.14	412.29	9.26	0.38	12.02
8/29/2024 4:00	13.48	59.07	0.03	7.15	411.37	9.25	0.4	12.14
8/29/2024 3:50	13.49	58.38	0.03	7.15	411.48	9.25	0.39	12.14
8/29/2024 3:40	13.51	58.99	0.03	7.15	410.67	9.23	0.38	12.14
8/29/2024 3:30	13.52	58.16	0.03	7.15	410.61	9.25	0.4	12.14

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8/29/2024 3:20	13.54	58.82	0.03	7.15	410.44	9.24	0.41	12.14
8/29/2024 3:10	13.55	58.74	0.03	7.15	410.32	9.24	0.4	12.14
8/29/2024 3:00	13.57	58.84	0.03	7.15	409.59	9.24	0.41	12.14
8/29/2024 2:50	13.58	58	0.03	7.14	410.05	9.23	0.41	12.07
8/29/2024 2:40	13.59	58.78	0.03	7.15	409.15	9.24	0.39	12.14
8/29/2024 2:30	13.61	57.64	0.03	7.15	409.21	9.21	0.4	12.05
8/29/2024 2:20	13.63	58.29	0.03	7.16	408.16	9.23	0.47	12.07
8/29/2024 2:10	13.65	58.02	0.03	7.15	408.32	9.23	0.4	12.14
8/29/2024 2:00	13.66	58.14	0.03	7.15	407.44	9.21	0.39	12.07
8/29/2024 1:50	13.68	57.62	0.03	7.15	407.47	9.21	0.39	12.07
8/29/2024 1:40	13.7	57.98	0.03	7.15	406.46	9.2	0.4	12.14
8/29/2024 1:30	13.71	57.1	0.03	7.15	407	9.21	0.39	12.14
8/29/2024 1:20	13.72	57.77	0.03	7.15	405.93	9.2	1.06	12.17
8/29/2024 1:10	13.74	57.21	0.03	7.15	406.66	9.2	0.4	12.19
8/29/2024 1:00	13.75	57.43	0.03	7.14	406	9.21	0.39	12.19
8/29/2024 0:50	13.77	56.68	0.03	7.15	405.68	9.2	0.39	12.19
8/29/2024 0:40	13.78	57.16	0.03	7.15	404.3	9.22	0.4	12.19
8/29/2024 0:30	13.79	56.63	0.03	7.14	404.87	9.18	0.42	12.09
8/29/2024 0:20	13.8	56.59	0.03	7.16	402.86	9.17	0.51	12.17
8/29/2024 0:10	13.83	56.26	0.03	7.15	403.36	9.18	0.41	12.12
8/29/2024 0:00	13.85	56.35	0.03	7.15	402.22	9.18	0.42	12.12
8/28/2024 23:50	13.87	55.99	0.03	7.17	401.31	9.18	0.41	12.19
8/28/2024 23:40	13.89	56.25	0.03	7.17	399.01	9.17	0.43	12.19
8/28/2024 23:30	13.91	55.78	0.03	7.15	400.13	9.16	0.39	12.21
8/28/2024 23:20	13.93	55.88	0.03	7.15	399.25	9.14	0.42	12.19
8/28/2024 23:10	13.95	55.58	0.03	7.17	398.79	9.14	0.39	12.21
8/28/2024 23:00	13.97	55.85	0.03	7.2	400.54	9.13	0.44	12.12
8/28/2024 22:50	13.99	56.08	0.03	7.56	400.06	9.11	0.4	12.19
8/28/2024 22:40	14	55.49	0.03	7.15	400.91	9.16	0.46	12.24
8/28/2024 22:30	14.02	54.19	0.03	7.15	401.16	9.15	0.42	12.24
8/28/2024 22:20	14.04	54.98	0.03	7.16	399.64	9.15	0.43	12.24
8/28/2024 22:10	14.06	54.68	0.03	7.14	400.25	9.14	0.46	12.24
8/28/2024 22:00	14.08	54.78	0.03	7.16	398.3	9.13	0.42	12.24
8/28/2024 21:50	14.1	54.92	0.03	7.15	398.74	9.12	0.42	12.24
8/28/2024 21:40	14.12	54.92	0.03	7.16	397.09	9.12	0.4	12.24
8/28/2024 21:30	14.14	55.04	0.03	7.15	397.16	9.1	0.42	12.24
8/28/2024 21:20	14.16	55.51	0.03	7.16	395.58	9.1	0.46	12.26
8/28/2024 21:10	14.18	55.66	0.03	7.15	396.04	9.09	0.46	12.26
8/28/2024 21:00	14.2	56.24	0.03	7.17	394.35	9.09	0.43	12.26
8/28/2024 20:50	14.22	56.01	0.03	7.16	394.47	9.1	0.42	12.26
8/28/2024 20:40	14.24	56.92	0.03	7.16	393.36	9.1	0.42	12.24
8/28/2024 20:30	14.27	56.52	0.03	7.16	393.07	9.1	0.45	12.17
8/28/2024 20:20	14.29	57.84	0.03	7.17	391.47	9.09	0.45	12.26
8/28/2024 20:10	14.31	57.24	0.03	7.16	391.6	9.08	0.57	12.19
8/28/2024 20:00	14.34	58.69	0.03	7.18	389.91	9.08	0.44	12.19
8/28/2024 19:50	14.36	58.88	0.03	7.17	389.25	9.08	0.45	12.19
8/28/2024 19:40	14.38	60.5	0.03	7.18	387.53	9.07	0.42	12.21

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8/28/2024 19:30	14.41	60.76	0.03	7.18	387.26	9.08	0.47	12.21
8/28/2024 19:20	14.43	62.06	0.03	7.18	385.91	9.08	0.42	12.24
8/28/2024 19:10	14.45	62.14	0.03	7.17	385.85	9.07	0.43	12.26
8/28/2024 19:00	14.47	63.29	0.03	7.17	384.43	9.05	3.63	12.38
8/28/2024 18:50	14.49	64.09	0.03	7.18	383.62	9.08	0.46	12.41
8/28/2024 18:40	14.51	65.34	0.03	7.17	383.15	9.06	0.43	12.41
8/28/2024 18:30	14.53	65.56	0.03	7.18	382.2	9.06	0.54	12.45
8/28/2024 18:20	14.55	67.03	0.03	7.2	379.67	9.07	0.45	12.48
8/28/2024 18:10	14.55	68.19	0.04	7.18	380.52	9.07	0.45	12.5
8/28/2024 18:00	14.56	69.7	0.04	7.21	377.74	9.08	0.45	12.5
8/28/2024 17:50	14.57	70.86	0.04	7.21	377.76	9.07	0.47	12.5
8/28/2024 17:40	14.59	73.16	0.04	7.22	375.74	9.08	0.48	12.48
8/28/2024 17:30	14.6	73.18	0.04	7.21	375.91	9.08	0.51	12.53
8/28/2024 17:20	14.61	76.21	0.04	7.23	373.55	9.08	0.45	12.5
8/28/2024 17:10	14.61	77.09	0.04	7.23	373.74	9.09	0.44	12.41
8/28/2024 17:00	14.61	78.35	0.04	7.24	371.81	9.06	0.45	12.6
8/28/2024 16:50	14.62	79.4	0.04	7.24	371.69	9.11	0.42	12.45
8/28/2024 16:40	14.62	80.68	0.04	7.23	370.89	9.08	0.49	12.57
8/28/2024 16:30	14.62	81.02	0.04	7.24	370.6	9.12	0.45	12.74
8/28/2024 16:20	14.62	82.41	0.04	7.25	368.76	9.13	0.45	12.76
8/28/2024 16:10	14.62	82.81	0.04	7.25	368.54	9.13	0.45	13.08
8/28/2024 16:00	14.62	85.53	0.04	7.26	366.62	9.13	0.46	13.29
8/28/2024 15:50	14.6	87.55	0.05	7.26	366.53	9.16	0.46	13.12
8/28/2024 15:40	14.57	92.16	0.05	7.26	364.93	9.16	0.44	12.79
8/28/2024 15:30	14.56	96.15	0.05	7.26	364.22	9.16	0.44	12.96
8/28/2024 15:20	14.53	101.14	0.05	7.27	362.54	9.16	0.44	12.88
8/28/2024 15:10	14.51	105.09	0.06	7.28	361.66	9.19	0.43	13.24
8/28/2024 15:00	14.49	110.86	0.06	7.29	360.06	9.2	0.45	13.05
8/28/2024 14:50	14.48	114.23	0.06	7.28	359.82	9.2	0.44	13.48
8/28/2024 14:40	14.46	119.03	0.06	7.29	357.36	9.21	0.44	13.48
8/28/2024 14:30	14.44	123.21	0.06	7.3	356.51	9.22	0.42	13.48
8/28/2024 14:20	14.41	128.78	0.07	7.3	354.46	9.22	0.45	13.46
8/28/2024 14:10	14.36	131.84	0.07	7.3	354.17	9.25	0.47	13.44
8/28/2024 14:00	14.3	138.36	0.07	7.31	351.18	9.28	0.43	13.34
8/28/2024 13:50	14.21	140.76	0.07	7.3	350.33	9.29	0.42	13.32
8/28/2024 13:40	14.15	143.27	0.08	7.3	348.08	9.32	0.42	13.44
8/28/2024 13:30	14.09	141.22	0.07	7.29	348.38	9.33	0.43	13.46
8/28/2024 13:20	14.04	136.43	0.07	7.29	347.51	9.34	0.44	13.48
8/28/2024 13:10	13.98	130.53	0.07	7.3	347.02	9.35	0.4	13.51
8/28/2024 13:00	13.94	135.76	0.07	7.3	345.64	9.38	0.41	13.53
8/28/2024 12:50	13.89	140.04	0.07	7.3	345.66	9.37	0.4	13.53
8/28/2024 12:40	13.87	147.49	0.08	7.31	344.76	9.39	0.39	13.56
8/28/2024 12:30	13.85	150.26	0.08	7.31	345.3	9.43	0.38	13.56
8/28/2024 12:20	13.83	156.31	0.08	7.31	344.5	9.4	0.41	13.56
8/28/2024 12:10	13.79	158.72	0.08	7.31	345.7	9.46	0.4	13.58
8/28/2024 12:00	13.76	159.96	0.08	7.31	345.46	9.45	0.41	13.58
8/28/2024 11:50	13.72	156.27	0.08	7.31	345.76	9.46	0.43	13.58

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8/28/2024 11:40	13.7	145.2	0.08	7.3	345.83	9.48	0.4	13.58
8/28/2024 11:30	13.7	133.57	0.07	7.29	346.78	9.47	0.44	13.46
8/28/2024 11:20	13.69	132.53	0.07	7.3	346.37	9.48	0.41	13.48
8/28/2024 11:10	13.66	131.83	0.07	7.29	347.78	9.49	0.42	13.6
8/28/2024 11:00	13.6	134.78	0.07	7.3	348.81	9.52	0.38	13.6
8/28/2024 10:50	13.51	133.8	0.07	7.29	350.64	9.5	0.38	13.6
8/28/2024 10:40	13.42	133.84	0.07	7.29	351.16	9.53	0.38	13.63
8/28/2024 10:30	13.35	133	0.07	7.28	354.13	9.54	0.38	13.63
8/28/2024 10:20	13.26	131.83	0.07	7.29	355.84	9.52	0.37	13.56
8/28/2024 10:10	13.16	128.46	0.07	7.27	359.02	9.53	0.4	13.56
8/28/2024 10:00	13.05	128.18	0.07	7.27	361.21	9.5	0.38	13.65
8/28/2024 9:50	13.03	128.38	0.07	7.27	361.35	9.51	0.39	13.67
8/28/2024 9:40	13.02	131.42	0.07	7.27	360.48	9.5	0.4	13.58
8/28/2024 9:30	13.01	131.91	0.07	7.27	360.88	9.52	0.37	13.12
8/28/2024 9:20	12.99	135.97	0.07	7.27	360.67	9.5	0.39	13.1
8/28/2024 9:10	12.97	136.46	0.07	7.27	361.23	9.53	0.38	12.93
8/28/2024 9:00	12.97	141.19	0.07	7.28	360.28	9.54	0.39	12.84
8/28/2024 8:50	12.96	144.37	0.08	7.28	360.57	9.53	0.39	12.84
8/28/2024 8:40	12.95	147.82	0.08	7.28	360.31	9.53	0.38	12.74
8/28/2024 8:30	12.94	151.54	0.08	7.27	360.78	9.51	0.41	12.62
8/28/2024 8:20	12.93	156.93	0.08	7.28	359.8	9.51	0.38	12.53
8/28/2024 8:10	12.92	158.72	0.08	7.28	359.83	9.52	0.39	12.48
8/28/2024 8:00	12.91	165.45	0.09	7.28	359.37	9.48	0.41	12.38
8/28/2024 7:50	12.91	169.2	0.09	7.28	359.44	9.49	0.4	12.21
8/28/2024 7:40	12.91	174.41	0.09	7.28	358.97	9.49	0.37	12.14
8/28/2024 7:30	12.91	178.23	0.1	7.28	359.16	9.48	0.37	12.21
8/28/2024 7:20	12.91	182.98	0.1	7.28	359.08	9.45	0.37	12.19
8/28/2024 7:10	12.92	185.29	0.1	7.27	359.62	9.45	0.68	12.17
8/28/2024 7:00	12.92	187.18	0.1	7.28	358.43	9.43	0.84	12.17
8/28/2024 6:50	12.92	182.45	0.1	7.27	359.32	9.44	0.56	12.14
8/28/2024 6:40	12.93	184.81	0.1	7.27	359.17	9.43	0.37	12.05
8/28/2024 6:30	12.93	178.84	0.1	7.27	359.57	9.45	0.41	12.05
8/28/2024 6:20	12.94	181.86	0.1	7.26	359.28	9.45	0.37	12.12
8/28/2024 6:10	12.94	178.23	0.1	7.27	358.27	9.43	0.36	12.12
8/28/2024 6:00	12.94	178.27	0.1	7.26	358.86	9.44	0.38	12.05
8/28/2024 5:50	12.95	175.03	0.09	7.26	357.99	9.45	0.38	12.17
8/28/2024 5:40	12.95	177.94	0.09	7.26	357.56	9.44	0.43	12.17
8/28/2024 5:30	12.96	177.94	0.09	7.26	357.38	9.44	0.39	12.17
8/28/2024 5:20	12.98	182.12	0.1	7.26	356.95	9.42	0.37	12.14
8/28/2024 5:10	12.99	182.74	0.1	7.26	356.77	9.44	0.39	12.07
8/28/2024 5:00	13	184.67	0.1	7.26	355.98	9.44	0.41	12.05
8/28/2024 4:50	13.01	184.47	0.1	7.26	355.65	9.41	0.42	12.07
8/28/2024 4:40	13.03	186.56	0.1	7.26	354.91	9.42	0.53	12.17
8/28/2024 4:30	13.05	184.71	0.1	7.26	354.74	9.41	0.41	12.17
8/28/2024 4:20	13.06	189.65	0.1	7.27	354.2	9.42	0.42	12.07
8/28/2024 4:10	13.08	183.98	0.1	7.26	354.24	9.39	0.38	12.07
8/28/2024 4:00	13.1	182.32	0.1	7.26	354	9.41	0.38	12.09

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8/28/2024 3:50	13.12	178.43	0.1	7.25	354.78	9.41	0.42	12.07
8/28/2024 3:40	13.15	178.17	0.09	7.25	354.52	9.39	0.39	12.07
8/28/2024 3:30	13.18	175.48	0.09	7.25	354.37	9.38	0.38	12.17
8/28/2024 3:20	13.21	178	0.09	7.25	354.23	9.39	0.41	12.19
8/28/2024 3:10	13.24	174.76	0.09	7.24	353.83	9.37	0.44	12.19
8/28/2024 3:00	13.27	175.87	0.09	7.25	353.28	9.36	0.39	12.19
8/28/2024 2:50	13.3	173.28	0.09	7.27	353.5	9.36	0.39	12.19
8/28/2024 2:40	13.32	173.34	0.09	7.25	352.23	9.35	0.4	12.19
8/28/2024 2:30	13.35	172.23	0.09	7.24	352.09	9.34	0.42	12.19
8/28/2024 2:20	13.37	175.38	0.09	7.25	351.71	9.34	0.42	12.12
8/28/2024 2:10	13.38	175.8	0.09	7.24	351.67	9.34	0.45	12.21
8/28/2024 2:00	13.41	179.43	0.1	7.25	350.78	9.33	0.42	12.19
8/28/2024 1:50	13.43	180.74	0.1	7.24	350.64	9.32	0.43	12.12
8/28/2024 1:40	13.46	183.76	0.1	7.25	350.22	9.33	0.44	12.12
8/28/2024 1:30	13.47	184.12	0.1	7.25	350.09	9.31	0.41	12.21
8/28/2024 1:20	13.5	185.67	0.1	7.25	350.16	9.32	0.42	12.12
8/28/2024 1:10	13.53	185.81	0.1	7.24	350.91	9.3	0.44	12.21
8/28/2024 1:00	13.55	187.99	0.1	7.24	350.98	9.3	0.44	12.19
8/28/2024 0:50	13.57	187.23	0.1	7.24	351.54	9.3	0.46	12.21
8/28/2024 0:40	13.6	187.18	0.1	7.24	351.5	9.29	0.42	12.24
8/28/2024 0:30	13.62	185.34	0.1	7.24	351.82	9.29	0.43	12.24
8/28/2024 0:20	13.65	188.36	0.1	7.24	352.16	9.29	0.46	12.21
8/28/2024 0:10	13.68	186.87	0.1	7.24	353.05	9.28	0.45	12.19
8/28/2024 0:00	13.7	188.28	0.1	7.24	353.17	9.28	0.48	12.21
8/27/2024 23:50	13.73	186.55	0.1	7.24	353.73	9.27	0.47	12.24
8/27/2024 23:40	13.75	185.85	0.1	7.23	352.8	9.25	0.45	12.14
8/27/2024 23:30	13.77	183.96	0.1	7.23	353.48	9.25	0.46	12.24
8/27/2024 23:20	13.79	185.96	0.1	7.23	352.45	9.24	0.44	12.24
8/27/2024 23:10	13.8	185.78	0.1	7.23	353.06	9.24	0.46	12.24
8/27/2024 23:00	13.82	187.25	0.1	7.24	352.33	9.23	0.48	12.24
8/27/2024 22:50	13.85	187.33	0.1	7.23	352.9	9.22	0.48	12.24
8/27/2024 22:40	13.88	188.64	0.1	7.24	351.62	9.22	0.52	12.24
8/27/2024 22:30	13.9	188.31	0.1	7.23	352.04	9.21	0.58	12.17
8/27/2024 22:20	13.92	190.04	0.1	7.24	351.93	9.22	0.47	12.17
8/27/2024 22:10	13.94	190.29	0.1	7.24	352.6	9.23	0.46	12.14
8/27/2024 22:00	13.97	191.68	0.1	7.24	352.24	9.21	0.5	12.26
8/27/2024 21:50	13.99	190.86	0.1	7.23	352.5	9.2	0.52	12.26
8/27/2024 21:40	14.01	192.48	0.1	7.23	351.86	9.22	0.48	12.26
8/27/2024 21:30	14.04	190.88	0.1	7.23	352.3	9.2	0.44	12.17
8/27/2024 21:20	14.07	191.57	0.1	7.23	351.91	9.18	0.53	12.26
8/27/2024 21:10	14.09	190.54	0.1	7.24	352.12	9.17	0.5	12.19
8/27/2024 21:00	14.12	190.7	0.1	7.24	351.88	9.19	0.57	12.29
8/27/2024 20:50	14.15	188.96	0.1	7.23	352.35	9.16	0.47	12.29
8/27/2024 20:40	14.17	188.93	0.1	7.24	351.96	9.16	0.55	12.29
8/27/2024 20:30	14.19	186.93	0.1	7.23	352.28	9.15	0.51	12.19
8/27/2024 20:20	14.22	187.65	0.1	7.24	351.27	9.15	5.39	12.29
8/27/2024 20:10	14.25	185.19	0.1	7.23	351.25	9.12	0.52	12.19

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8/27/2024 20:00	14.28	185.58	0.1	7.24	350.99	9.15	0.5	12.29
8/27/2024 19:50	14.31	185.59	0.1	7.23	351.63	9.13	0.52	12.33
8/27/2024 19:40	14.35	187.14	0.1	7.24	350.5	9.12	0.54	12.33
8/27/2024 19:30	14.37	184.5	0.1	7.24	350.01	9.14	0.52	12.36
8/27/2024 19:20	14.41	185.88	0.1	7.24	348.8	9.14	0.56	12.26
8/27/2024 19:10	14.44	185.37	0.1	7.24	347.36	9.1	0.52	12.38
8/27/2024 19:00	14.47	187.64	0.1	7.25	345.09	9.12	0.53	12.38
8/27/2024 18:50	14.5	187.76	0.1	7.24	343.91	9.11	0.55	12.29
8/27/2024 18:40	14.54	187.97	0.1	7.25	340.95	9.11	0.57	12.41
8/27/2024 18:30	14.56	186.28	0.1	7.25	340.28	9.1	0.53	12.41
8/27/2024 18:20	14.58	185.89	0.1	7.25	339.73	9.09	0.58	12.5
8/27/2024 18:10	14.59	186.42	0.1	7.25	339.92	9.1	0.63	12.55
8/27/2024 18:00	14.61	187.43	0.1	7.25	339.43	9.11	0.56	12.6
8/27/2024 17:50	14.62	186.91	0.1	7.25	339.57	9.12	0.55	12.53
8/27/2024 17:40	14.63	188.1	0.1	7.25	338.86	9.12	0.54	12.65
8/27/2024 17:30	14.64	184.28	0.1	7.25	339.06	9.12	0.59	12.67
8/27/2024 17:20	14.65	187.91	0.1	7.26	338.52	9.14	0.57	12.86
8/27/2024 17:10	14.64	186.75	0.1	7.25	338.21	9.13	0.64	12.69
8/27/2024 17:00	14.65	188.47	0.1	7.26	337.82	9.11	0.59	12.74
8/27/2024 16:50	14.67	188.39	0.1	7.26	337.99	9.12	0.53	12.79
8/27/2024 16:40	14.67	190.73	0.1	7.28	336.12	9.14	0.63	13
8/27/2024 16:30	14.69	190.56	0.1	7.28	336.3	9.17	0.67	13.44
8/27/2024 16:20	14.68	193.18	0.1	7.28	335.59	9.18	0.67	13.29
8/27/2024 16:10	14.66	193.93	0.1	7.27	336.06	9.15	0.65	13.41
8/27/2024 16:00	14.68	195.85	0.1	7.27	335.41	9.17	0.65	13.41
8/27/2024 15:50	14.68	193.28	0.1	7.28	334.93	9.17	0.63	13.48
8/27/2024 15:40	14.66	198.5	0.11	7.29	334.14	9.15	0.63	13.41
8/27/2024 15:30	14.7	197.02	0.1	7.29	333.7	9.18	0.66	13.24
8/27/2024 15:20	14.67	200.78	0.11	7.29	332.71	9.19	0.83	13.48
8/27/2024 15:10	14.68	198.62	0.11	7.29	332.38	9.19	0.77	13.27
8/27/2024 15:00	14.65	202.69	0.11	7.29	332.1	9.2	0.86	13.46
8/27/2024 14:50	14.61	201.46	0.11	7.29	331.83	9.19	0.74	13.29
8/27/2024 14:40	14.64	208.39	0.11	7.29	330.01	9.18	0.76	13.53
8/27/2024 14:30	14.63	211.68	0.11	7.29	329.51	9.19	0.67	13.53
8/27/2024 14:20	14.62	215.73	0.12	7.3	328.06	9.17	0.76	13.51
8/27/2024 14:10	14.64	217.91	0.12	7.31	326.11	9.19	0.67	13.46
8/27/2024 14:00	14.66	225.08	0.12	7.32	323.57	9.2	0.85	13.44
8/27/2024 13:50	14.7	227.53	0.12	7.32	321.74	9.23	0.71	13.44
8/27/2024 13:40	14.63	232.13	0.12	7.32	321	9.23	0.72	13.46
8/27/2024 13:30	14.56	227.97	0.12	7.31	321.83	9.24	0.73	13.48
8/27/2024 13:20	14.49	222.44	0.12	7.31	321.27	9.26	0.9	13.53
8/27/2024 13:10	14.42	216.11	0.12	7.31	322.09	9.26	0.75	13.56
8/27/2024 13:00	14.34	219.56	0.12	7.31	322.19	9.24	0.67	13.56
8/27/2024 12:50	14.38	218.39	0.12	7.31	319.86	9.29	0.8	13.53
8/27/2024 12:40	14.34	222.67	0.12	7.32	319.11	9.28	0.9	13.44
8/27/2024 12:40	14.34	222.67	0.12	7.32	319.11	9.28	0.9	13.44
8/27/2024 12:30	14.33	224.86	0.12	7.32	318.4	9.29	0.91	13.44

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8/27/2024 12:20	14.22	231.01	0.12	7.33	319.35	9.28	0.91	13.58
8/27/2024 12:10	14.17	231.6	0.12	7.32	318.96	9.29	0.88	13.1
8/27/2024 12:00	14.2	237.42	0.13	7.33	316.08	9.28	0.85	13.03
8/27/2024 11:50	14.3	240.97	0.13	7.34	314.87	9.32	0.78	13.44
8/27/2024 11:40	14.16	244.26	0.13	7.34	316.87	9.3	1.2	13.53
8/27/2024 11:30	14.14	244.34	0.13	7.34	316.76	9.3	0.79	13.53
8/27/2024 11:20	14.21	248.95	0.13	7.35	315.75	9.32	1	13.44
8/27/2024 11:10	14.19	247.11	0.13	7.35	317.05	9.34	0.91	13.56
8/27/2024 11:00	14.12	256.53	0.14	7.35	319.31	9.36	0.93	13.58
8/27/2024 10:50	14.02	261.38	0.14	7.35	323.56	9.36	0.99	13.6
8/27/2024 10:40	13.91	265.69	0.14	7.35	330.18	9.37	1.01	13.6
8/27/2024 10:30	13.86	269.13	0.14	7.35	339.52	9.35	1.69	13.6
8/27/2024 10:20						9.36		13.15
8/27/2024 10:10	13.81	275.91	0.15	7.33	358.94	9.23	1.91	13.6
8/27/2024 10:00	13.75	278.98	0.15	7.34	357.38	9.3	3.91	13.32
8/27/2024 9:50	13.72	278.55	0.15	7.33	356.15	9.31	1.4	13.67
8/27/2024 9:40	13.69	279.54	0.15	7.34	357.08	9.32	1.74	13.1
8/27/2024 9:30	13.66	277.81	0.15	7.32	357.36	9.24	1.62	12.96
8/27/2024 9:20	13.64	283.33	0.15	7.34	355.54	9.31	11.14	12.79
8/27/2024 9:10	13.62	283.13	0.15	7.32	356.7	9.25	1.97	12.93
8/27/2024 9:00	13.61	284.01	0.15	7.33	353.94	9.32	15.73	12.6
8/27/2024 8:50	13.59	285.07	0.15	7.34	355.34	9.23	3.2	12.45
8/27/2024 8:40	13.58	288.07	0.15	7.34	354.94	9.29	5.1	12.24
8/27/2024 8:30	13.57	285.41	0.15	7.33	354.24	9.3	1.96	12.12
8/27/2024 8:20	13.56	287.1	0.15	7.32	354.65	9.28	5.99	12.07
8/27/2024 8:10	13.56	286.53	0.15	7.32	355.13	9.25	5.74	12.12
8/27/2024 8:00	13.58	288.91	0.16	7.33	354.62	9.28	2.84	12.02
8/27/2024 7:50	13.59	289.86	0.16	7.35	353.86	9.27	4.72	12.09
8/27/2024 7:40	13.62	291.77	0.16	7.33	357.09	9.27	6.53	12.05
8/27/2024 7:30	13.65	293.51	0.16	7.34	356.98	9.22	16.22	12.05
8/27/2024 7:20	13.7	299.11	0.16	7.36	356.04	9.26	13.17	12.02
8/27/2024 7:20	13.7	299.11	0.16	7.36	356.04	9.26	13.17	12.02
8/27/2024 7:10	13.73	296.76	0.16	7.36	356.46	9.23	4.16	12.05
8/27/2024 7:00	13.77	304.87	0.16	7.36	357.38	9.24	2.87	12.02
8/27/2024 6:50	13.81	308.93	0.17	7.35	358.95	9.18	14.31	12.02
8/27/2024 6:40	13.85	312.91	0.17	7.33	359.3	9.17	7.99	12.02
8/27/2024 6:30	13.89	306.02	0.16	7.29	360.03	9.19	7.77	12.02
8/27/2024 6:20	13.93	306.8	0.17	7.33	361.23	9.13	3.3	12.02
8/27/2024 6:10	13.98	306.02	0.16	7.36	356.04	9.19	12.93	12
8/27/2024 6:00	14.03	310.23	0.17	7.35	357.5	9.2	15.15	11.97
8/27/2024 5:50	14.07	309.3	0.17	7.37	356.01	9.17	3.07	12.02
8/27/2024 5:40	14.11	308.97	0.17	7.31	358.22	9.13	4.25	12
8/27/2024 5:30	14.15	307	0.17	7.34	357.6	9.13	17.62	11.93
8/27/2024 5:20	14.19	306.83	0.17	7.34	358.51	9.11	7.7	12.05
8/27/2024 5:10	14.23	303.5	0.16	7.33	357.3	9.09	9.94	12.05
8/27/2024 5:00	14.28	303.93	0.16	7.34	357.24	9.09	7.82	11.95
8/27/2024 4:50	14.31	301.88	0.16	7.33	358.01	9.08	14	11.93

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8/27/2024 4:40	14.34	301.99	0.16	7.36	357.7	9.13	17.29	11.93
8/27/2024 4:30	14.37	301.16	0.16	7.36	357.52	9.06	8.02	12.02
8/27/2024 4:20	14.41	305.68	0.16	7.37	356.02	9.1	14.6	12.05
8/27/2024 4:10	14.44	303.37	0.16	7.37	355.56	9.07	9.83	12.05
8/27/2024 4:00	14.48	309.72	0.17	7.32	353.76	9.09	26.82	12.05
8/27/2024 3:50	14.5	305.91	0.16	7.37	354	9.09	12.72	12.07
8/27/2024 3:40	14.53	301.44	0.16	7.36	353.75	9.09	14.27	12.07
8/27/2024 3:30	14.55	294.35	0.16	7.35	354.4	9.03	12.71	12.05
8/27/2024 3:20	14.58	294.11	0.16	7.34	354.32	9.05	57.49	12.05
8/27/2024 3:10	14.59	289.37	0.16	7.35	353.23	9.02	12.63	11.97
8/27/2024 3:00	14.61	289.78	0.16	7.34	354.55	9.01	12.51	11.95
8/27/2024 2:50	14.63	283.59	0.15	7.37	352.55	9.04	31.58	12.07
8/27/2024 2:40	14.65	282.72	0.15	7.35	355.67	9	16.02	12.07
8/27/2024 2:30	14.66	277.28	0.15	7.38	353.06	9.04	12.64	12.07
8/27/2024 2:20	14.68	275.76	0.15	7.35	354.42	8.95	23.56	12.05
8/27/2024 2:10	14.69	270.77	0.15	7.34	353.84	8.98	11.53	12.07
8/27/2024 2:00	14.72	270.79	0.15	7.34	355.36	8.93	14.32	12.07
8/27/2024 1:50	14.72	266.08	0.14	7.3	359.25	8.91	12.27	12.07
8/27/2024 1:40	14.74	258.81	0.14	7.31	362.03	9.03	9.94	12.09
8/27/2024 1:30	14.74	250.93	0.13	7.36	366.52	9.08	47.81	12.09
8/27/2024 1:20	14.75	217.67	0.12	7.31	371.02	9.08	54.76	12.09
8/27/2024 1:10	14.75	228.7	0.12	7.36	376.31	9.07	40.92	12
8/27/2024 1:00	14.75	198.96	0.11	7.34	379.17	9.07	38.79	12
8/27/2024 0:50	14.74	195.96	0.1	7.27	379.3	8.99	114.32	12.07
8/27/2024 0:40	14.74	167.76	0.09	7.27	378.57	8.92	19.38	12.09
8/27/2024 0:30	14.74	166.88	0.09	7.23	379.09	8.93	20.01	12.09
8/27/2024 0:20	14.74	153.88	0.08	7.22	379.08	8.93	63.98	12.09
8/27/2024 0:10	14.75	148.88	0.08	7.29	376.86	9.06	46.06	12
8/27/2024 0:00	14.76	143.55	0.08	7.3	377.08	9.04	96.26	12
8/26/2024 23:50	14.76	139.2	0.07	7.35	376.3	9.1	54.15	12
8/26/2024 23:40	14.75	130.56	0.07	7.37	377.33	9.12	106.34	12
8/26/2024 23:30	14.75	136.74	0.07	7.4	377.1	9.11	42.33	12
8/26/2024 23:20	14.72	120.77	0.06	7.35	380.44	9.16	24.96	12.07
8/26/2024 23:10	14.69	101.46	0.05	7.31	382.3	9.17	50.94	12.02
8/26/2024 23:00	14.7	99.61	0.05	7.34	380.7	9.16	34.02	12.12
8/26/2024 22:50	14.71	97.17	0.05	7.34	380.27	9.15	25.32	12.12
8/26/2024 22:40	14.74	101.14	0.05	7.39	377.29	9.14	15.44	12.12
8/26/2024 22:30	14.76	108.86	0.06	7.43	374.5	9.12	18.75	12.12
8/26/2024 22:20	14.78	113.13	0.06	7.45	372.17	9.15	16.58	12.12
8/26/2024 22:10	14.79	114.88	0.06	7.46	370.83	9.15	23.89	12.02
8/26/2024 22:00	14.8	114.33	0.06	7.48	369.12	9.12	17.02	12.12
8/26/2024 21:50	14.8	111.12	0.06	7.47	368.68	9.12	17.69	12.14
8/26/2024 21:40	14.83	114.6	0.06	7.48	368.29	9.13	10.55	12.12
8/26/2024 21:30	14.87	125.48	0.07	7.5	368.88	9.11	11.82	12.05
8/26/2024 21:20	14.89	131.46	0.07	7.52	368	9.09	9.71	12.14
8/26/2024 21:10	14.92	141.89	0.08	7.52	369.07	9.06	11	12.14
8/26/2024 21:00	14.96	147.75	0.08	7.52	369.27	9.03	8.63	12.05

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8/26/2024 20:50	14.99	158.92	0.08	7.54	370.51	9.03	7.28	12.05
8/26/2024 20:40	15	165.27	0.09	7.55	372.25	9.01	5.39	12.05
8/26/2024 20:30	14.98	156.2	0.08	7.5	377.62	9.03	3.3	12.17
8/26/2024 20:20	14.99	149.82	0.08	7.49	379.53	8.97	2.79	12.19
8/26/2024 20:10	15.01	154.41	0.08	7.47	382.69	8.96	2.24	12.19
8/26/2024 20:00	15.05	163.39	0.09	7.49	383.28	8.92	2.57	12.09
8/26/2024 19:50	15.06	166.45	0.09	7.47	384.47	8.94	1.44	12.09
8/26/2024 19:40	15.06	162.31	0.09	7.44	384.05	8.92	1.63	12.12
8/26/2024 19:30	15.08	158.23	0.08	7.45	384.71	8.94	1.35	12.24
8/26/2024 19:20	15.11	163.7	0.09	7.45	383.45	8.9	1.19	12.24
8/26/2024 19:10	15.13	167.49	0.09	7.49	382.47	8.9	1.44	12.24
8/26/2024 19:00	15.16	175.18	0.09	7.49	382.68	8.87	1.06	12.24
8/26/2024 18:50	15.18	186.5	0.1	7.48	381.93	8.89	1.51	12.26
8/26/2024 18:40	15.19	195.83	0.1	7.48	380.89	8.89	1.37	12.29
8/26/2024 18:30	15.18	197.18	0.1	7.48	380.54	8.89	1.42	12.26
8/26/2024 18:20	15.18	203.95	0.11	7.48	380.38	8.9	1.73	12.29
8/26/2024 18:10	15.16	204.16	0.11	7.47	382.69	8.93	1.19	12.29
8/26/2024 18:00	15.14	193.94	0.1	7.45	382.69	8.94	1.06	12.29
8/26/2024 17:50	15.13	190.04	0.1	7.44	385.92	8.93	1.04	12.21
8/26/2024 17:40	15.13	192.36	0.1	7.44	384.86	8.92	0.85	12.26
8/26/2024 17:30	15.12	188.32	0.1	7.42	387.97	8.92	1.13	12.31
8/26/2024 17:20	15.12	188.49	0.1	7.42	387.08	8.91	1.05	12.31
8/26/2024 17:10	15.11	182.38	0.1	7.4	389.48	8.89	1.01	12.21
8/26/2024 17:00	15.11	182	0.1	7.39	389.21	8.9	1.12	12.21
8/26/2024 16:50	15.09	178.36	0.09	7.35	390.29	8.91	0.82	12.41
8/26/2024 16:40	15.07	157.33	0.08	7.35	390.96	8.93	0.77	12.33
8/26/2024 16:30	15.07	119.26	0.06	7.32	391.37	8.93	0.67	12.38
8/26/2024 16:20	15.08	109.5	0.06	7.33	390.16	8.94	0.72	12.43
8/26/2024 16:10	15.1	117.64	0.06	7.35	388.91	8.92	0.72	12.41
8/26/2024 16:00	15.11	126	0.07	7.36	387.71	8.89	0.53	12.53
8/26/2024 15:50	15.12	134.29	0.07	7.38	388.06	8.92	0.59	12.48
8/26/2024 15:40	15.13	144.3	0.08	7.36	389.69	8.88	0.56	12.45
8/26/2024 15:30	15.14	153.75	0.08	7.38	390.45	8.88	0.59	12.43
8/26/2024 15:20	15.16	164.41	0.09	7.39	389.29	8.9	0.51	12.48
8/26/2024 15:10	15.18	173.73	0.09	7.4	390.01	8.9	0.53	12.55
8/26/2024 15:00	15.19	186.45	0.1	7.42	388.3	8.93	0.55	12.62
8/26/2024 14:50	15.19	195.47	0.1	7.43	389.36	8.98	0.58	12.76
8/26/2024 14:40	15.17	206.07	0.11	7.43	388.2	9.01	0.6	13
8/26/2024 14:30	15.15	207.9	0.11	7.45	389.08	9.02	0.59	12.93
8/26/2024 14:20	15.11	197.46	0.11	7.39	390.15	9.06	0.59	13.17
8/26/2024 14:10	15.06	166.12	0.09	7.34	392.45	9.07	0.58	13.22
8/26/2024 14:00	15.01	129.16	0.07	7.33	393.89	9.05	0.58	13.27
8/26/2024 13:50	14.97	105.41	0.06	7.36	393.77	9.04	0.54	12.74
8/26/2024 13:40	14.95	105.76	0.06	7.36	392.01	9.03	0.56	12.6
8/26/2024 13:30	14.93	108.86	0.06	7.33	393.45	9.03	0.6	12.69
8/26/2024 13:20	14.92	113.51	0.06	7.34	392.85	8.97	0.7	12.53
8/26/2024 13:10	14.92	118.89	0.06	7.35	394.11	8.95	0.57	12.33

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8/26/2024 13:00	14.93	124.93	0.07	7.35	394.08	8.94	0.58	12.45
8/26/2024 12:50	14.94	131.36	0.07	7.35	396.35	8.95	0.51	12.45
8/26/2024 12:40	14.96	139.77	0.07	7.36	394.99	8.95	0.55	12.48
8/26/2024 12:30	14.97	148.86	0.08	7.39	394.93	8.98	0.57	12.57
8/26/2024 12:20	14.97	163.16	0.09	7.39	393.8	9.01	0.57	12.65
8/26/2024 12:10	14.97	175.27	0.09	7.41	393.8	9.02	0.61	12.69
8/26/2024 12:00	14.97	191.91	0.1	7.41	393.09	9.03	0.61	12.74
8/26/2024 11:50	14.95	206.98	0.11	7.44	394.26	8.98	0.88	12.69
8/26/2024 11:40	14.94	231.03	0.12	7.42	393.92	9.02	0.6	12.69
8/26/2024 11:30	14.93	251.07	0.13	7.44	395.19	9.04	0.74	12.79
8/26/2024 11:20	14.89	267.41	0.14	7.35	395.45	9.06	0.79	12.79
8/26/2024 11:10	14.84	255.53	0.14	7.38	400.14	9.07	0.78	12.76
8/26/2024 11:00	14.77	220.69	0.12	7.35	402.93	9.07	0.67	12.6
8/26/2024 10:50	14.72	117.85	0.06	7.21	412.05	9.04	0.64	12.38
8/26/2024 10:40	14.7	45.66	0.02	7.2	408.39	9.09	0.57	12.36
8/26/2024 10:30	14.68	39.77	0.02	7.22	407.23	9.05	0.64	12.36
8/26/2024 10:20	14.67	36.14	0.02	7.18	409.03	9.04	0.75	12.21
8/26/2024 10:10	14.66	31.94	0.02	7.17	412.07	9.02	0.8	12.26
8/26/2024 10:00	14.66	28.75	0.01	7.15	413.64	8.97	0.98	12.24
8/26/2024 9:50	14.66	27.3	0.01	7.24	411.22	8.95	0.82	12.19
8/26/2024 9:40	14.66	26.81	0.01	7.19	414.24	8.96	0.68	12.17
8/26/2024 9:30	14.66	26.44	0.01	7.3	410.87	8.95	0.59	12.14
8/26/2024 9:20	14.67	26.34	0.01	7.18	413.7	8.97	0.56	12.17
8/26/2024 9:10	14.67	26.11	0.01	7.28	410.51	9.01	0.53	12.21
8/26/2024 9:00	14.68	25.86	0.01	7.19	413.55	9.02	0.47	12.26
8/26/2024 8:50	14.68	25.61	0.01	7.24	410.72	9	0.49	12.29
8/26/2024 8:40	14.67	25.3	0.01	7.18	412.72	9	0.5	12.31
8/26/2024 8:30	14.67	25.47	0.01	7.23	411.14	9.01	0.51	12.31
8/26/2024 8:20	14.67	25.43	0.01	7.19	412.57	9.02	0.51	12.21
8/26/2024 8:10	14.66	25.62	0.01	7.24	412.66	9.01	0.5	12.17
8/26/2024 8:00	14.65	25.94	0.01	7.17	418.24	8.97	0.59	12.12
8/26/2024 7:50	14.65	26.02	0.01	7.17	419.34	9.01	0.44	12.19
8/26/2024 7:40	14.64	26.1	0.01	7.18	419.26	9	0.46	12.12
8/26/2024 7:30	14.64	26.49	0.01	7.21	417.8	8.98	0.48	12.12
8/26/2024 7:20	14.64	26.6	0.01	7.17	419.41	8.97	0.48	12.09
8/26/2024 7:10	14.64	26.75	0.01	7.21	419.03	8.97	0.48	12.07
8/26/2024 7:00	14.65	27.05	0.01	7.17	419.79	8.95	0.46	12.07
8/26/2024 6:50	14.66	27.2	0.01	7.18	419.74	8.94	0.47	12.05
8/26/2024 6:40	14.67	27.54	0.01	7.17	420.21	8.96	0.48	12.14
8/26/2024 6:30	14.67	27.86	0.01	7.19	419.19	8.95	0.48	12.17
8/26/2024 6:20	14.68	27.9	0.01	7.16	420.27	8.95	0.46	12.17
8/26/2024 6:10	14.68	28.22	0.01	7.18	420.11	8.95	0.46	12.17
8/26/2024 6:00	14.69	28.42	0.01	7.16	420.22	8.94	0.47	12.17
8/26/2024 5:50	14.69	28.46	0.01	7.2	418.5	8.95	0.48	12.17
8/26/2024 5:40	14.7	28.74	0.01	7.16	420.28	8.93	0.46	12.17
8/26/2024 5:30	14.71	28.75	0.01	7.17	419.44	8.95	0.46	12.07
8/26/2024 5:20	14.71	28.44	0.01	7.16	419.76	8.93	0.47	12.07

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8/26/2024 5:10	14.71	27.9	0.01	7.17	420.2	8.92	0.46	12.17
8/26/2024 5:00	14.72	27.45	0.01	7.15	420.32	8.96	0.47	12.19
8/26/2024 4:50	14.72	26.62	0.01	7.2	417.67	8.95	0.48	12.17
8/26/2024 4:40	14.73	25.79	0.01	7.15	420.32	8.92	0.47	12.17
8/26/2024 4:30	14.74	25.21	0.01	7.24	416.17	8.94	0.47	12.07
8/26/2024 4:20	14.74	24.93	0.01	7.16	419.24	8.94	0.49	12.07
8/26/2024 4:10	14.75	24.74	0.01	7.17	419.45	8.93	0.49	12.07
8/26/2024 4:00	14.76	24.93	0.01	7.16	418.84	8.92	0.49	12.17
8/26/2024 3:50	14.77	24.9	0.01	7.21	416.97	8.92	0.48	12.19
8/26/2024 3:40	14.78	25.11	0.01	7.16	418.97	8.93	0.48	12.19
8/26/2024 3:30	14.78	24.89	0.01	7.23	415.81	8.92	0.47	12.19
8/26/2024 3:20	14.79	25.24	0.01	7.14	419.67	8.93	0.48	12.19
8/26/2024 3:10	14.8	24.86	0.01	7.19	419.1	8.92	0.51	12.19
8/26/2024 3:00	14.8	25.46	0.01	7.16	419.43	8.93	0.47	12.19
8/26/2024 2:50	14.81	25.5	0.01	7.21	417.6	8.92	0.53	12.12
8/26/2024 2:40	14.82	25.55	0.01	7.16	419.35	8.91	0.48	12.21
8/26/2024 2:30	14.83	25.54	0.01	7.2	418.14	8.91	0.49	12.12
8/26/2024 2:20	14.84	25.74	0.01	7.17	419.46	8.91	0.5	12.21
8/26/2024 2:10	14.84	25.83	0.01	7.19	418.81	8.93	0.47	12.21
8/26/2024 2:00	14.86	25.96	0.01	7.17	419.19	8.91	0.51	12.21
8/26/2024 1:50	14.86	25.97	0.01	7.25	415.2	8.92	0.47	12.21
8/26/2024 1:40	14.87	26.02	0.01	7.18	419.38	8.92	0.5	12.12
8/26/2024 1:30	14.88	26.25	0.01	7.23	417.43	8.93	0.5	12.12
8/26/2024 1:20	14.89	26.35	0.01	7.17	419.34	8.91	0.5	12.21
8/26/2024 1:10	14.89	26.31	0.01	7.17	419.38	8.88	0.52	12.24
8/26/2024 1:00	14.9	26.65	0.01	7.18	419.08	8.9	0.49	12.24
8/26/2024 0:50	14.91	26.55	0.01	7.2	417.76	8.9	0.48	12.24
8/26/2024 0:40	14.92	26.93	0.01	7.17	418.93	8.9	0.49	12.21
8/26/2024 0:30	14.93	27.03	0.01	7.2	417.87	8.9	0.51	12.12
8/26/2024 0:20	14.94	27.08	0.01	7.18	418.3	8.91	0.53	12.12
8/26/2024 0:10	14.95	27.03	0.01	7.19	417.59	8.9	0.48	12.24
8/26/2024 0:00	14.96	27.65	0.01	7.19	417.98	8.88	0.46	12.24

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Received	Temperature C	Specific Conductivity ÂµS/cm	Salinity PSU	pH pH	ORP mV	Dissolved Oxygen Concentration mg/L	Turbidity NTU	TL Battery V
9/1/2024 23:50	15.17	208.28	0.1	7.79	378.87	8.34	10.27	12.26
9/1/2024 23:40	15.11	225.55	0.11	7.78	379.88	8.32	9.52	12.17
9/1/2024 23:30	15.12	225.64	0.11	7.78	379.74	8.32	9.45	12.17
9/1/2024 23:20	15.11	225.56	0.11	7.78	379.49	8.33	9.32	12.17
9/1/2024 23:10	15.11	225.44	0.11	7.79	379.07	8.33	9.31	12.19
9/1/2024 23:00	15.12	225.29	0.11	7.79	378.82	8.33	9.25	12.29
9/1/2024 22:50	15.12	225.27	0.11	7.79	378.7	8.32	9.48	12.31
9/1/2024 22:40	15.13	224.8	0.11	7.79	378.51	8.31	8.33	12.31
9/1/2024 22:30	15.14	226.94	0.11	7.79	378.37	8.29	8.45	12.31
9/1/2024 22:20	15.14	226.39	0.11	7.79	378.18	8.32	10.21	12.31
9/1/2024 22:10	15.15	226.83	0.11	7.78	378.13	8.33	8.71	12.31
9/1/2024 22:00	15.16	226.55	0.11	7.79	377.84	8.32	9.43	12.31
9/1/2024 21:50	15.16	226.72	0.11	7.79	377.8	8.32	8.94	12.31
9/1/2024 21:40	15.18	226.15	0.11	7.79	377.62	8.32	8.32	12.31
9/1/2024 21:30	15.19	226.21	0.11	7.79	377.49	8.3	8.08	12.24
9/1/2024 21:20	15.2	225.32	0.11	7.79	377.46	8.29	9.35	12.33
9/1/2024 21:10	15.2	226.76	0.11	7.79	377.36	8.3	9.88	12.31
9/1/2024 21:00	15.21	226.91	0.11	7.78	377.49	8.3	10.86	12.24
9/1/2024 20:50	15.21	226.75	0.11	7.78	377.4	8.29	7.96	12.33
9/1/2024 20:40	15.22	226.99	0.11	7.78	377.27	8.29	8.57	12.33
9/1/2024 20:30	15.23	226.67	0.11	7.78	377.24	8.29	9.81	12.36
9/1/2024 20:20	15.24	226.96	0.11	7.78	376.93	8.28	8.73	12.36
9/1/2024 20:10	15.25	226.79	0.11	7.78	376.83	8.27	8.63	12.36
9/1/2024 20:00	15.26	226.64	0.11	7.78	376.49	8.27	9.15	12.38
9/1/2024 19:50	15.27	226.52	0.11	7.78	376.38	8.27	7.86	12.41
9/1/2024 19:40	15.28	226.22	0.11	7.78	376.03	8.28	7.91	12.45
9/1/2024 19:30	15.29	226.37	0.11	7.78	375.84	8.26	8.03	12.6
9/1/2024 19:20	15.31	226.05	0.11	7.78	375.49	8.27	8.4	12.67
9/1/2024 19:10	15.32	225.71	0.11	7.79	374.94	8.29	7.4	12.79
9/1/2024 19:00	15.34	224.9	0.11	7.79	374.57	8.29	7.23	12.88
9/1/2024 18:50	15.35	224.57	0.11	7.8	374.04	8.29	8.73	12.91
9/1/2024 18:40	15.35	224.34	0.11	7.8	373.71	8.3	8.9	12.93
9/1/2024 18:30	15.36	224.31	0.11	7.8	373.33	8.31	7.31	13.05
9/1/2024 18:20	15.39	223.31	0.11	7.81	372.74	8.32	7.35	13.05
9/1/2024 18:10	15.43	222.55	0.11	7.81	372.19	8.32	7.31	13.1
9/1/2024 18:00	15.47	220.91	0.11	7.82	371.46	8.35	7.51	12.98
9/1/2024 17:50	15.51	219.69	0.1	7.82	370.9	8.38	6.78	13.08
9/1/2024 17:40	15.56	219.71	0.1	7.83	370.24	8.38	8.18	12.93
9/1/2024 17:30	15.65	213.98	0.1	7.82	369.66	8.41	7.96	13.12
9/1/2024 17:20	15.97	198.8	0.09	7.85	368.18	8.41	7.44	13

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9/1/2024 17:10	15.94	200.01	0.1	7.84	369.32	8.41	8.58	13.22
9/1/2024 17:00	15.95	195.37	0.09	7.85	368.97	8.4	7.19	13.15
9/1/2024 16:50	15.92	197.18	0.09	7.85	368.08	8.44	6.68	13
9/1/2024 16:40	15.87	197.43	0.09	7.84	369.09	8.4	6.84	13.36
9/1/2024 16:30	15.89	195.77	0.09	7.85	368.36	8.46	7.24	13.22
9/1/2024 16:20	15.91	191.87	0.09	7.87	367.45	8.5	8.57	13.34
9/1/2024 16:10	15.83	193.83	0.09	7.87	367.59	8.42	9.82	13.32
9/1/2024 16:00	15.74	224.17	0.11	7.85	370.13	8.33	7.64	13.12
9/1/2024 15:50	15.79	224.25	0.11	7.85	370.12	8.34	9.46	13.29
9/1/2024 15:40	15.8	224.53	0.11	7.85	369.93	8.35	8.77	13.29
9/1/2024 15:30	15.81	224.58	0.11	7.85	369.75	8.36	8.19	13.2
9/1/2024 15:20	15.81	224.35	0.11	7.85	369.59	8.33	8.3	13.22
9/1/2024 15:10	15.76	223.84	0.11	7.85	369.44	8.34	8.51	13.29
9/1/2024 15:00	15.74	223.72	0.11	7.85	369.4	8.32	8.7	13.29
9/1/2024 14:50	15.9	221.63	0.11	7.86	369.23	8.36	7.42	13.27
9/1/2024 14:40	15.96	219.87	0.1	7.86	368.97	8.36	8.95	13.29
9/1/2024 14:30	15.97	215.95	0.1	7.85	368.85	8.38	8.81	13.27
9/1/2024 14:20	15.97	209.94	0.1	7.84	368.02	8.44	8.63	13.27
9/1/2024 14:10	16.02	194.94	0.09	7.84	366.93	8.66	8.68	13.27
9/1/2024 14:00	16.16	170.03	0.08	7.9	355.9	8.84	132.72	13.27
9/1/2024 13:50	16.09	143.08	0.07	7.99	362.7	8.95	0	13.17
9/1/2024 13:40	16.1	143.79	0.07	7.98	363.17	8.97	0	13.27
9/1/2024 13:30	16.09	143.08	0.07	7.98	363.19	8.98	0	13.27
9/1/2024 13:20	16.06	144.82	0.07	7.97	363.26	8.97	0	13.27
9/1/2024 13:10	16.02	142.95	0.07	7.98	363.96	8.94	0	13.15
9/1/2024 13:00	15.98	144.03	0.07	7.97	364.62	8.95	0	13.17
9/1/2024 12:50	15.94	142.59	0.07	7.98	363.79	9.02	0	13.27
9/1/2024 12:40	15.87	142.64	0.07	7.98	363.97	8.94	0	13.27
9/1/2024 12:30	15.85	143.77	0.07	7.97	364.83	8.87	0	13.27
9/1/2024 12:20	15.8	144.55	0.07	7.98	364.98	8.76	0	13.24
9/1/2024 12:10	15.8	144.71	0.07	7.97	366.53	8.78	0	13.24
9/1/2024 12:00	15.79	145.59	0.07	7.97	365.55	8.79	0	13.27
9/1/2024 11:50	15.71	149.76	0.07	7.96	365.61	8.49	0	13.27
9/1/2024 11:40	15.65	199.19	0.09	7.86	369.14	8.41	0	13.17
9/1/2024 11:30	15.63	165.55	0.08	7.95	367.5	8.45	0	13.27
9/1/2024 11:20	15.58	175.13	0.08	7.89	369.9	8.5	0.36	13.29
9/1/2024 11:10	15.48	210.22	0.1	7.86	371.5	8.56	0.91	13.22
9/1/2024 11:00	15.43	206.31	0.1	7.87	371.45	8.66	0.39	13.34
9/1/2024 10:50	15.39	191.34	0.09	7.87	371.69	8.79	0.31	13.36
9/1/2024 10:40	15.4	165.65	0.08	7.94	367.8	9.03	8.98	13.29
9/1/2024 10:30	15.3	201.22	0.1	7.86	377.98	8.71	2384.51	13.41
9/1/2024 10:20	15.29	199.46	0.09	7.86	377.83	8.73	2381.98	13.44
9/1/2024 10:10	15.25	199.61	0.09	7.86	378.26	8.72	2381.48	13.46
9/1/2024 10:00	15.2	194.44	0.09	7.87	377.85	8.82	2363.85	13.51
9/1/2024 9:50	15.17	203.33	0.1	7.86	378.19	8.7	2358.37	13.56
9/1/2024 9:40	15.12	202.48	0.1	7.86	378.19	8.7	2354.9	13.6
9/1/2024 9:30	15.09	200.14	0.1	7.86	378.14	8.72	2335.62	13.63

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9/1/2024 9:20	15.05	200.64	0.1	7.86	378.11	8.72	2369.92	12.74
9/1/2024 9:10	15.03	199.07	0.09	7.86	378.43	8.72	2384.14	12.69
9/1/2024 9:00	15.06	193.18	0.09	7.87	377.9	8.79	2397.49	12.65
9/1/2024 8:50	15.04	195.1	0.09	7.86	378.32	8.78	2367.66	12.6
9/1/2024 8:40	15.03	194.8	0.09	7.87	378.05	8.79	2362.55	12.57
9/1/2024 8:30	15.04	194.44	0.09	7.87	378.17	8.78	2293.14	12.53
9/1/2024 8:20	15.03	194.62	0.09	7.87	377.99	8.78	2303.83	12.45
9/1/2024 8:10	15.04	195.45	0.09	7.86	378.18	8.79	2351.36	12.41
9/1/2024 8:00	15.04	196.55	0.09	7.87	378.01	8.77	2368.04	12.33
9/1/2024 7:50	15.05	197.38	0.09	7.87	378.04	8.77	2384.31	12.29
9/1/2024 7:40	15.05	195.37	0.09	7.87	377.95	8.77	2371.65	12.17
9/1/2024 7:30	15.05	196.17	0.09	7.87	377.82	8.77	2373.38	12.19
9/1/2024 7:20	15.06	195.35	0.09	7.87	377.52	8.77	2392.8	12.14
9/1/2024 7:10	15.06	195.68	0.09	7.87	377.59	8.76	2408.75	12.12
9/1/2024 7:00	15.08	195.67	0.09	7.87	377.29	8.77	2421.28	12.09
9/1/2024 6:50	15.07	196	0.09	7.87	377.42	8.76	2438.87	12.02
9/1/2024 6:40	15.1	194.36	0.09	7.87	377.41	8.76	2444.97	12.05
9/1/2024 6:30	15.11	194.83	0.09	7.87	377.45	8.77	2444.06	12.12
9/1/2024 6:20	15.11	194.97	0.09	7.87	377.52	8.77	2457.8	12.12
9/1/2024 6:10	15.12	195.05	0.09	7.87	377.65	8.75	2464.97	12.12
9/1/2024 6:00	15.15	192.01	0.09	7.87	377.21	8.75	2469.59	12.14
9/1/2024 5:50	15.18	191.39	0.09	7.87	377.62	8.76	2510.26	12.14
9/1/2024 5:40	15.19	191.58	0.09	7.87	377.54	8.79	2527.86	12.12
9/1/2024 5:30	15.17	196.39	0.09	7.86	377.83	8.78	2529.64	12.12
9/1/2024 5:20	15.1	197.49	0.09	7.85	378.13	8.78	2494.37	12.02
9/1/2024 5:10	14.97	209.31	0.1	7.83	378.72	8.52	2532.02	12.02
9/1/2024 5:00	14.95	214.52	0.1	7.83	378.3	8.09	2538.04	12.09
9/1/2024 4:50	14.97	213.29	0.1	7.83	378.16	8.18	2518.25	12.14
9/1/2024 4:40	15	210.77	0.1	7.84	377.81	8.43	2516.27	12.14
9/1/2024 4:30	15.01	209.91	0.1	7.84	377.79	8.38	2521.55	12.14
9/1/2024 4:20	15.05	206.68	0.1	7.84	377.46	8.51	2528.8	12.05
9/1/2024 4:10	15.09	204.67	0.1	7.85	377.39	8.58	2527.96	12.07
9/1/2024 4:00	15.13	201.95	0.1	7.85	377.07	8.63	2515.33	12.07
9/1/2024 3:50	15.15	202.27	0.1	7.85	376.93	8.62	2405.05	12.17
9/1/2024 3:40	15.19	200.37	0.1	7.85	376.44	8.64	2409.11	12.17
9/1/2024 3:30	15.22	200.67	0.1	7.85	376.47	8.64	2403.66	12.17
9/1/2024 3:20	15.24	200.34	0.1	7.85	376.15	8.64	2404.21	12.19
9/1/2024 3:10	15.34	194.61	0.09	7.86	375.94	8.66	2392.1	12.19
9/1/2024 3:00	15.39	194.1	0.09	7.86	375.57	8.73	2365.75	12.19
9/1/2024 2:50	15.39	195.69	0.09	7.86	375.66	8.72	2326.9	12.19
9/1/2024 2:40	15.41	194.1	0.09	7.86	375.24	8.7	2299.65	12.17
9/1/2024 2:30	15.4	195.69	0.09	7.86	375.23	8.7	2271.21	12.12
9/1/2024 2:20	15.43	194.47	0.09	7.86	374.73	8.7	2102.86	12.19
9/1/2024 2:10	15.46	195.38	0.09	7.86	374.66	8.72	2091.27	12.09
9/1/2024 2:00	15.49	193.86	0.09	7.85	374.89	8.69	2096.39	12.12
9/1/2024 1:50	15.53	193.66	0.09	7.86	374.49	8.68	2072.84	12.19
9/1/2024 1:40	15.53	193.19	0.09	7.86	374.29	8.69	2076.8	12.19

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9/1/2024 1:30	15.55	193.89	0.09	7.85	374.52	8.69	2069.04	12.09
9/1/2024 1:20	15.56	194.4	0.09	7.86	373.99	8.69	2055.44	12.12
9/1/2024 1:10	15.57	194.28	0.09	7.85	373.85	8.67	2061.32	12.24
9/1/2024 1:00	15.59	194.15	0.09	7.86	373.71	8.68	2082.89	12.24
9/1/2024 0:50	15.61	194.01	0.09	7.85	373.79	8.65	2081.82	12.24
9/1/2024 0:40	15.69	190.45	0.09	7.86	373.64	8.66	2078.87	12.26
9/1/2024 0:30	15.83	186.2	0.09	7.87	373.32	8.7	2051.92	12.24
9/1/2024 0:20	15.84	185.07	0.09	7.87	373.27	8.68	2041.4	12.24
9/1/2024 0:10	15.85	187.93	0.09	7.86	373.58	8.68	2036.69	12.24
9/1/2024 0:00	15.87	184.84	0.09	7.86	373.34	8.68	2047.43	12.14
8/31/2024 23:50	15.9	183.93	0.09	7.86	373.24	8.67	2030.35	12.21
8/31/2024 23:40	15.9	185.55	0.09	7.86	373.4	8.67	2002.13	12.26
8/31/2024 23:30	15.89	185.19	0.09	7.85	373.45	8.67	2000.99	12.29
8/31/2024 23:20	15.85	186.15	0.09	7.85	374.26	8.68	1972.39	12.29
8/31/2024 23:10	15.6	190.29	0.09	7.83	374.91	8.72	1974.08	12.29
8/31/2024 23:00	15.44	204.64	0.1	7.82	375.94	8.55	1934.77	12.29
8/31/2024 22:50	15.5	202.32	0.1	7.82	375.43	8.57	1935.48	12.05
8/31/2024 22:40	15.52	202.71	0.1	7.82	375.26	8.58	1935.06	12.26
8/31/2024 22:30	15.54	200.73	0.1	7.82	375.56	8.6	1949.03	12.29
8/31/2024 22:20	15.57	193.94	0.09	7.83	373.69	8.71	1835.96	12.29
8/31/2024 22:10	15.33	214.1	0.1	7.81	375.44	8.2	1898.3	12.31
8/31/2024 22:00	15.38	212.1	0.1	7.81	375.14	8.27	1851.12	12.31
8/31/2024 21:50	15.43	209.71	0.1	7.81	375.08	8.39	1851.28	12.31
8/31/2024 21:40	15.5	205.91	0.1	7.82	374.53	8.5	1846.08	12.31
8/31/2024 21:30	15.57	203.27	0.1	7.82	374.31	8.52	1853.34	12.31
8/31/2024 21:20	15.62	202.48	0.1	7.83	373.81	8.54	1794.43	12.31
8/31/2024 21:10	15.66	201.41	0.1	7.83	373.49	8.54	1790.08	12.31
8/31/2024 21:00	15.73	199.81	0.1	7.84	372.87	8.55	1791.61	12.31
8/31/2024 20:50	15.78	198.49	0.09	7.84	372.52	8.52	1778.82	12.26
8/31/2024 20:40	15.86	196.82	0.09	7.85	371.7	8.52	1740.67	12.24
8/31/2024 20:30	16.01	192.96	0.09	7.86	370.71	8.51	1748.39	12.33
8/31/2024 20:20	16.33	185.15	0.09	7.88	369.41	8.55	1742.49	12.33
8/31/2024 20:10	16.65	180.13	0.09	7.9	367.98	8.62	1739.08	12.33
8/31/2024 20:00	16.67	177.42	0.08	7.9	367.82	8.61	1744.58	12.26
8/31/2024 19:50	16.66	178.45	0.08	7.9	367.52	8.62	1722.09	12.26
8/31/2024 19:40	16.65	179.87	0.09	7.89	367.19	8.61	1729.51	12.29
8/31/2024 19:30	16.53	184.75	0.09	7.89	367.22	8.6	1730.23	12.29
8/31/2024 19:20	16.48	187.78	0.09	7.88	367.89	8.58	1719.17	12.29
8/31/2024 19:10	16.47	184.55	0.09	7.88	368.53	8.6	1737.55	12.33
8/31/2024 19:00	16.51	182.98	0.09	7.88	369.63	8.6	1734.94	12.43
8/31/2024 18:50	16.46	178.42	0.08	7.88	370	8.64	1725.53	12.81
8/31/2024 18:40	15.94	185.23	0.09	7.85	370.74	8.65	1770.23	12.88
8/31/2024 18:30	15.79	201.88	0.1	7.84	372.64	8.4	1692.03	13.03
8/31/2024 18:20	15.86	200.58	0.1	7.85	371.85	8.52	1712.13	13.03
8/31/2024 18:10	15.93	199.92	0.1	7.86	371.14	8.53	1685.44	13.03
8/31/2024 18:00	16.01	199.53	0.09	7.87	370.2	8.53	1688.81	13.03
8/31/2024 17:50	16.14	196.13	0.09	7.88	369.05	8.51	1691.82	13.05

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8/31/2024 17:40	16.5	186.93	0.09	7.91	366.91	8.57	1583.66	13.05
8/31/2024 17:30	16.72	180.2	0.09	7.92	366.1	8.61	1676.34	13.03
8/31/2024 17:20	16.77	181.13	0.09	7.93	366.23	8.59	1706.83	12.93
8/31/2024 17:10	16.82	182.15	0.09	7.92	366.3	8.6	1718.17	13.08
8/31/2024 17:00	16.89	180.1	0.09	7.93	365.57	8.6	1630.73	12.91
8/31/2024 16:50	16.89	181.82	0.09	7.94	365.15	8.6	1676.04	13.03
8/31/2024 16:40	16.89	182.62	0.09	7.94	365.53	8.61	1612.2	13.05
8/31/2024 16:30	16.9	180.97	0.09	7.93	366.12	8.61	1629.85	13.05
8/31/2024 16:20	16.85	179.73	0.09	7.93	367.18	8.64	1659.79	12.98
8/31/2024 16:10	16.34	197.59	0.09	7.88	369.86	8.59	1664.64	13.15
8/31/2024 16:00	16.39	202.64	0.1	7.91	368.84	8.52	1682.02	13.22
8/31/2024 15:50	16.49	200.48	0.1	7.91	367.69	8.52	1698.68	13.24
8/31/2024 15:40	16.8	193.95	0.09	7.94	365.81	8.57	1725.39	13.15
8/31/2024 15:30	17.09	183.79	0.09	7.97	364.91	8.61	1675.7	13.29
8/31/2024 15:20	17.03	183.34	0.09	7.96	365.65	8.61	1714.64	13.2
8/31/2024 15:10	17	183.88	0.09	7.96	366.89	8.63	1699.77	13.29
8/31/2024 15:00	16.96	182.47	0.09	7.96	369.82	8.65	1727.89	13.29
8/31/2024 14:50	16.88	183.78	0.09	7.95	370.09	8.65	1776.97	13.27
8/31/2024 14:40	16.82	183.16	0.09	7.95	370.65	8.66	1813.11	13.27
8/31/2024 14:30	16.72	181.55	0.09	7.93	372.55	8.69	1706.57	13.27
8/31/2024 14:20	16.5	180.6	0.09	7.92	374.2	8.72	1695.23	13.27
8/31/2024 14:10	16.02	224.37	0.11	7.84	377.78	8.21	1477.61	13.27
8/31/2024 14:00	16.01	228.68	0.11	7.85	377.63	8.09	1243.96	13.27
8/31/2024 13:50	15.98	228.73	0.11	7.85	377.72	8.07	1253.84	13.27
8/31/2024 13:40	15.96	228.99	0.11	7.85	377.8	8.16	1263.06	13.17
8/31/2024 13:30	15.93	229.32	0.11	7.85	377.89	7.92	1274.99	13.17
8/31/2024 13:20	15.92	229.91	0.11	7.85	377.85	8.03	1277.23	13.17
8/31/2024 13:10	15.9	228.93	0.11	7.85	377.8	7.84	1273.93	13.27
8/31/2024 13:00	15.88	230.22	0.11	7.85	378.21	7.64	1286.76	13.24
8/31/2024 12:50	15.87	229.83	0.11	7.85	378.27	7.7	1285.28	13.24
8/31/2024 12:40	15.84	230.72	0.11	7.85	378.55	7.88	1405.63	13.15
8/31/2024 12:30	15.81	230.03	0.11	7.85	378.47	8.12	1288.65	13.24
8/31/2024 12:20	15.78	230.4	0.11	7.85	378.7	7.84	1294.22	13.24
8/31/2024 12:10	15.75	229.61	0.11	7.84	378.87	7.76	1307.28	13.24
8/31/2024 12:00	15.71	230.23	0.11	7.84	379.07	7.81	1313.38	13.24
8/31/2024 11:50	15.65	229.98	0.11	7.84	379.09	7.78	1334.58	13.17
8/31/2024 11:40	15.6	231.33	0.11	7.84	379.28	7.68	1354.63	13.27
8/31/2024 11:30	15.55	230.66	0.11	7.84	379.42	7.62	1365.51	13.27
8/31/2024 11:20	15.49	230.51	0.11	7.84	379.58	7.76	1367.65	13.2
8/31/2024 11:10	15.43	229.91	0.11	7.84	379.64	7.87	1391.31	13.29
8/31/2024 11:00	15.38	230.38	0.11	7.84	379.53	7.66	1373.65	13.34
8/31/2024 10:50	15.33	229.5	0.11	7.84	379.7	7.9	1393.7	13.34
8/31/2024 10:40	15.27	230.78	0.11	7.84	379.5	7.81	1301.53	13.36
8/31/2024 10:30	15.22	230.37	0.11	7.83	380.01	7.82	1325.69	13.39
8/31/2024 10:20	15.17	231.61	0.11	7.84	379.9	7.89	1348.06	13.44
8/31/2024 10:10	15.11	230.49	0.11	7.83	380.19	7.8	1321.19	13.46
8/31/2024 10:00	15.07	231.56	0.11	7.83	380.31	7.89	1354.53	13.51

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8/31/2024 9:50	15.02	231.97	0.11	7.83	380.78	8.02	1389.62	13.56
8/31/2024 9:40	14.96	232.42	0.11	7.82	380.67	7.98	1524.75	13.6
8/31/2024 9:30	14.89	231.57	0.11	7.83	381	8	1539.25	12.93
8/31/2024 9:20	14.83	232.96	0.11	7.82	381.13	8.14	1495.88	12.6
8/31/2024 9:10	14.78	231.2	0.11	7.82	381.04	7.9	1419.46	12.45
8/31/2024 9:00	14.75	233.1	0.11	7.82	381	8.02	1421.64	12.31
8/31/2024 8:50	14.73	230.96	0.11	7.81	381.15	7.99	1439.37	12.33
8/31/2024 8:40	14.73	229.97	0.11	7.81	380.8	8.02	1438.71	12.41
8/31/2024 8:30	14.72	228.92	0.11	7.82	380.98	7.97	1380.48	12.36
8/31/2024 8:20	14.71	229.21	0.11	7.82	380.91	8.01	1394.34	12.33
8/31/2024 8:10	14.7	229.79	0.11	7.83	380.68	7.78	1422.96	12.31
8/31/2024 8:00	14.7	230.09	0.11	7.83	380.27	8.02	1444.88	12.26
8/31/2024 7:50	14.7	227.12	0.11	7.83	380.97	8.13	1461.18	12.24
8/31/2024 7:40	14.7	229.16	0.11	7.83	380.74	8.2	1378.61	12.21
8/31/2024 7:30	14.7	228.36	0.11	7.83	380.76	8.17	1368.08	12.07
8/31/2024 7:20	14.71	229.61	0.11	7.83	380.64	8.11	1229.29	12.05
8/31/2024 7:10	14.71	227.7	0.11	7.83	380.43	8.11	1207.89	12.14
8/31/2024 7:00	14.72	229.77	0.11	7.83	380.41	8.09	1198.01	12.14
8/31/2024 6:50	14.72	228.77	0.11	7.83	380.4	8.12	1198.46	12.14
8/31/2024 6:40	14.72	230.79	0.11	7.83	380.46	8.23	1175.41	12.05
8/31/2024 6:30	14.73	227.41	0.11	7.83	380.18	8.13	1187.46	12.12
8/31/2024 6:20	14.74	227.3	0.11	7.83	380.15	8.21	1180.8	12.14
8/31/2024 6:10	14.75	225.94	0.11	7.83	380.38	8.09	1132.79	12.14
8/31/2024 6:00	14.76	227.03	0.11	7.83	380.05	8.26	1136.72	12.14
8/31/2024 5:50	14.76	224.44	0.11	7.83	380.11	8.2	929.86	12.14
8/31/2024 5:40	14.76	227.73	0.11	7.83	379.87	8.34	937.82	12.14
8/31/2024 5:30	14.76	225.94	0.11	7.83	380.12	8.27	995.28	12.14
8/31/2024 5:20	14.78	226.41	0.11	7.83	379.62	8.35	854.77	12.12
8/31/2024 5:10	14.78	223.71	0.11	7.83	379.61	8.45	860.38	12.14
8/31/2024 5:00	14.8	224.17	0.11	7.84	379.12	8.4	851.7	12.02
8/31/2024 4:50	14.81	221.81	0.11	7.83	379.34	8.5	856.68	12.02
8/31/2024 4:40	14.83	221.78	0.11	7.83	379.27	8.46	862.66	12.02
8/31/2024 4:30	14.86	217.93	0.1	7.84	379.01	8.58	861.96	12.17
8/31/2024 4:20	14.88	216.02	0.1	7.84	378.64	8.5	867.12	12.14
8/31/2024 4:10	14.92	210.71	0.1	7.84	378.42	8.59	869.49	12.07
8/31/2024 4:00	14.96	209.98	0.1	7.84	378.14	8.62	843.05	12.07
8/31/2024 3:50	15	206.63	0.1	7.85	377.72	8.58	848.14	12.14
8/31/2024 3:40	15.03	207.93	0.1	7.85	377.37	8.67	826.9	12.07
8/31/2024 3:30	15.09	204.84	0.1	7.85	376.99	8.68	837.3	12.17
8/31/2024 3:20	15.14	206.82	0.1	7.86	376.48	8.71	823.24	12.19
8/31/2024 3:10	15.19	204.17	0.1	7.86	376.6	8.71	836.23	12.19
8/31/2024 3:00	15.35	194.43	0.09	7.87	375.58	8.8	840.49	12.19
8/31/2024 2:50	15.31	198.04	0.09	7.86	376.39	8.77	820.51	12.19
8/31/2024 2:40	15.33	196.6	0.09	7.86	376.48	8.78	821.28	12.21
8/31/2024 2:30	15.3	198	0.09	7.86	377.24	8.77	823.82	12.21
8/31/2024 2:20	15.27	199.8	0.09	7.85	377.38	8.76	839.07	12.21
8/31/2024 2:10	15.23	199.62	0.09	7.84	378.24	8.76	852.25	12.21

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8/31/2024 2:00	15.25	197.13	0.09	7.84	378.11	8.77	805.75	12.21
8/31/2024 1:50	15.21	195.3	0.09	7.84	378.4	8.78	789.06	12.14
8/31/2024 1:40	15.16	194.77	0.09	7.84	378.69	8.79	808.39	12.21
8/31/2024 1:30	15.05	194.97	0.09	7.83	379.76	8.82	826.09	12.21
8/31/2024 1:20	14.85	197.84	0.09	7.82	380.25	8.86	813.04	12.14
8/31/2024 1:10	14.8	229.41	0.11	7.8	382.82	7.78	466.6	12.24
8/31/2024 1:00	14.81	232.14	0.11	7.8	382.41	7.71	327	12.24
8/31/2024 0:50	14.82	227.58	0.11	7.8	382.8	8.2	324.5	12.24
8/31/2024 0:40	14.82	230.14	0.11	7.8	382.42	7.96	330.55	12.21
8/31/2024 0:30	14.83	227.36	0.11	7.8	382.74	8.56	333.62	12.24
8/31/2024 0:20	14.84	229.92	0.11	7.8	382.36	8.3	330.78	12.26
8/31/2024 0:10	14.84	229.77	0.11	7.8	382.59	8.48	331.41	12.26
8/31/2024 0:00	14.84	230.68	0.11	7.8	382.27	8.28	334.39	12.24
8/30/2024 23:50	14.85	228.54	0.11	7.8	382.45	8.4	336.28	12.19
8/30/2024 23:40	14.86	229.91	0.11	7.8	382.53	8.08	303.34	12.26
8/30/2024 23:30	14.86	227.55	0.11	7.8	382.25	8.02	298.06	12.26
8/30/2024 23:20	14.88	228.62	0.11	7.8	382.37	8.08	299.94	12.29
8/30/2024 23:10	14.89	225.87	0.11	7.8	382.31	8.13	304.6	12.29
8/30/2024 23:00	14.9	226.9	0.11	7.8	381.85	8.14	301.59	12.29
8/30/2024 22:50	14.91	225.64	0.11	7.8	382.29	7.98	302.12	12.29
8/30/2024 22:40	14.92	226.68	0.11	7.8	382.26	7.94	289.31	12.29
8/30/2024 22:30	14.93	224.92	0.11	7.8	382.14	8.11	263.48	12.31
8/30/2024 22:20	14.94	226.62	0.11	7.8	382.31	8.29	265.16	12.31
8/30/2024 22:10	14.95	224.78	0.11	7.79	382.26	7.87	266.19	12.31
8/30/2024 22:00	14.95	226.43	0.11	7.8	382.31	8.02	251.17	12.29
8/30/2024 21:50	14.96	225.87	0.11	7.79	382.31	7.91	252.03	12.21
8/30/2024 21:40	14.97	226.56	0.11	7.79	382.13	8.19	253.3	12.21
8/30/2024 21:30	14.97	224.29	0.11	7.79	381.94	8.08	255.69	12.21
8/30/2024 21:20	14.98	225.71	0.11	7.79	381.73	8.27	267.21	12.29
8/30/2024 21:10	15	222.4	0.11	7.79	381.89	8.06	265.79	12.21
8/30/2024 21:00	15.01	223.48	0.11	7.8	381.08	8.23	264.72	12.33
8/30/2024 20:50	15.01	223.7	0.11	7.79	381.34	8.34	241.56	12.33
8/30/2024 20:40	15.02	225.45	0.11	7.8	381.01	8.24	237.09	12.33
8/30/2024 20:30	15.03	222.28	0.11	7.8	381.53	8.33	241.08	12.36
8/30/2024 20:20	15.05	222.89	0.11	7.8	381.21	8.41	244.8	12.33
8/30/2024 20:10	15.07	219.89	0.1	7.8	381.23	8	252.97	12.36
8/30/2024 20:00	15.08	220.11	0.1	7.81	380.67	8.35	212.4	12.29
8/30/2024 19:50	15.07	220.4	0.1	7.8	380.76	8.45	219.79	12.38
8/30/2024 19:40	15.09	219.97	0.1	7.81	380.3	8.38	224.5	12.43
8/30/2024 19:30	15.09	219.92	0.1	7.8	380.37	8.41	228.4	12.55
8/30/2024 19:20	15.1	223.16	0.11	7.81	379.94	8.34	228.67	12.62
8/30/2024 19:10	15.11	220.63	0.11	7.81	379.95	8.44	232.73	12.69
8/30/2024 19:00	15.12	221.8	0.11	7.81	379.43	8.37	235.39	12.67
8/30/2024 18:50	15.16	217.64	0.1	7.82	379.68	8.43	241.31	12.84
8/30/2024 18:40	15.16	219.26	0.1	7.83	379.16	8.48	248.24	12.91
8/30/2024 18:30	15.18	218.98	0.1	7.83	378.95	8.48	147.49	12.98
8/30/2024 18:20	15.2	219.97	0.1	7.84	378.52	8.39	148.29	12.93

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8/30/2024 18:10	15.24	218.24	0.1	7.85	378.01	8.49	152.73	12.91
8/30/2024 18:00	15.27	220.16	0.1	7.85	377.61	8.25	155.23	13.08
8/30/2024 17:50	15.33	217.95	0.1	7.86	377.37	8.54	162.96	12.96
8/30/2024 17:40	15.36	220.31	0.1	7.87	376.93	8.25	258.71	12.96
8/30/2024 17:30	15.4	217.67	0.1	7.87	376.87	8.41	156.91	13.05
8/30/2024 17:20	15.44	218.96	0.1	7.87	376.57	8.42	130.67	13.05
8/30/2024 17:10	15.49	216.26	0.1	7.88	376.05	8.46	137.45	13.1
8/30/2024 17:00	15.54	216.29	0.1	7.88	375.87	8.44	201.82	13.1
8/30/2024 16:50	15.59	214.42	0.1	7.89	375.61	8.46	42.64	13.08
8/30/2024 16:40	15.65	214.42	0.1	7.89	374.95	8.59	43.94	13.1
8/30/2024 16:30	15.69	212.49	0.1	7.9	375.05	8.47	36.86	13.12
8/30/2024 16:20	15.75	213.59	0.1	7.9	375.37	8.55	39.16	13.15
8/30/2024 16:10	15.8	210.37	0.1	7.9	375.05	8.54	37.44	13.27
8/30/2024 16:00	15.86	210.23	0.1	7.9	375.02	8.56	38.8	13.15
8/30/2024 15:50	15.94	204.54	0.1	7.9	374.62	8.62	38.16	13.17
8/30/2024 15:40	16	203.16	0.1	7.91	373.98	8.66	38.61	13.32
8/30/2024 15:30	16.04	200.62	0.1	7.91	374.15	8.67	40.58	13.32
8/30/2024 15:20	16.08	200.77	0.1	7.91	373.73	8.66	32.14	13.32
8/30/2024 15:10	16.11	198.94	0.09	7.91	373.6	8.67	30.47	13.29
8/30/2024 15:00	16.11	201.4	0.1	7.91	373.38	8.66	25.67	13.22
8/30/2024 14:50	16.15	199.04	0.09	7.91	373.07	8.67	23.39	13.29
8/30/2024 14:40	16.17	199.67	0.09	7.91	372.68	8.67	24.52	13.2
8/30/2024 14:30	16.14	200.12	0.1	7.91	372.7	8.66	25.16	13.32
8/30/2024 14:20	16.16	200.29	0.1	7.91	371.89	8.66	26.01	13.32
8/30/2024 14:10	16.29	186.74	0.09	7.93	371.07	8.67	26.88	13.32
8/30/2024 14:00	16.4	178.07	0.08	7.93	371.27	8.68	28.61	13.34
8/30/2024 13:50	16.35	171.81	0.08	7.94	370.8	8.8	27.99	13.32
8/30/2024 13:40	16.13	198.09	0.09	7.92	371.66	8.67	27.01	13.32
8/30/2024 13:30	16.28	182.7	0.09	7.93	370.47	8.72	28.41	13.24
8/30/2024 13:20	16.38	176.62	0.08	7.95	370.5	8.71	26.1	13.32
8/30/2024 13:10	16.36	171.02	0.08	7.96	369.83	8.79	26.49	13.22
8/30/2024 13:00	16.23	172.36	0.08	7.95	370.53	8.8	28.13	13.32
8/30/2024 12:50	16.05	173.77	0.08	7.94	371.86	8.83	27.86	13.32
8/30/2024 12:40	15.78	176.24	0.08	7.92	373.45	8.9	33.85	13.32
8/30/2024 12:30	15.64	201.78	0.1	7.9	374.8	8.77	27.11	13.32
8/30/2024 12:20	15.63	202.54	0.1	7.9	374.39	8.77	25.39	13.32
8/30/2024 12:10	15.61	201.58	0.1	7.9	374.33	8.77	27.19	13.22
8/30/2024 12:00	15.59	203.01	0.1	7.9	373.85	8.75	28.77	13.32
8/30/2024 11:50	15.59	190.55	0.09	7.91	373.62	8.8	27.7	13.34
8/30/2024 11:40	15.62	184.73	0.09	7.92	372.57	8.85	31.07	13.34
8/30/2024 11:30	15.62	185.54	0.09	7.93	371.75	8.84	36.38	13.34
8/30/2024 11:20	15.6	187.61	0.09	7.91	372.05	8.82	40.02	13.36
8/30/2024 11:10	15.65	172.03	0.08	7.94	371.85	8.89	41.72	13.27
8/30/2024 11:00	15.58	173.57	0.08	7.94	371.51	8.91	44.49	13.27
8/30/2024 10:50	15.51	170.79	0.08	7.94	371.9	8.94	54.19	13.29
8/30/2024 10:40	15.43	173.1	0.08	7.94	372.06	8.95	59.96	13.41
8/30/2024 10:30	15.36	173.78	0.08	7.94	371.89	8.98	71.71	13.44

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8/30/2024 10:20	15.22	183.44	0.09	7.92	372.04	8.95	77.88	13.48
8/30/2024 10:10	15.09	182.13	0.09	7.9	373.97	8.96	101.04	13.51
8/30/2024 10:00	14.92	177.44	0.08	7.9	375.56	9	116.5	13.56
8/30/2024 9:50	14.61	188.95	0.09	7.88	378.07	9.11	182.8	13.6
8/30/2024 9:40	14.66	222.21	0.11	7.87	379.32	8.81	51.67	13.67
8/30/2024 9:30	14.61	221.06	0.11	7.86	379.33	8.8	57.47	13.24
8/30/2024 9:20	14.55	223.06	0.11	7.86	379.57	8.82	62.98	12.53
8/30/2024 9:10	14.52	221.19	0.11	7.86	379.86	8.82	71.85	12.53
8/30/2024 9:00	14.48	222.85	0.11	7.85	379.86	8.82	58.3	12.45
8/30/2024 8:50	14.45	219.04	0.1	7.86	379.46	8.82	66.86	12.48
8/30/2024 8:40	14.44	221.75	0.11	7.86	379.63	8.82	98.36	12.43
8/30/2024 8:30	14.43	218.78	0.1	7.86	379.65	8.81	24.63	12.43
8/30/2024 8:20	14.42	220.25	0.1	7.86	379.08	8.83	26.12	12.38
8/30/2024 8:10	14.42	219.58	0.1	7.86	379.6	8.82	31.38	12.33
8/30/2024 8:00	14.41	221.65	0.11	7.86	379.41	8.82	29.97	12.29
8/30/2024 7:50	14.4	220.61	0.11	7.86	379.5	8.81	23.01	12.26
8/30/2024 7:40	14.39	221.14	0.11	7.87	379.33	8.82	21.53	12.21
8/30/2024 7:30	14.4	221.57	0.11	7.86	379.46	8.81	17.63	12.19
8/30/2024 7:20	14.39	221.1	0.11	7.87	379.42	8.81	19.01	12.12
8/30/2024 7:10	14.4	220.97	0.11	7.86	379.25	8.82	16.74	12.12
8/30/2024 7:00	14.4	221.89	0.11	7.86	379.3	8.81	13.44	12.17
8/30/2024 6:50	14.4	219.92	0.1	7.86	379.42	8.81	14.29	12.17
8/30/2024 6:40	14.4	222.69	0.11	7.87	379.2	8.8	13.55	12.12
8/30/2024 6:30	14.4	219.7	0.1	7.86	379.12	8.81	13.59	12.14
8/30/2024 6:20	14.4	221.94	0.11	7.86	378.92	8.8	10.56	12.14
8/30/2024 6:10	14.4	219.16	0.1	7.86	378.96	8.81	11.97	12.14
8/30/2024 6:00	14.41	220.1	0.1	7.86	378.59	8.82	10.63	12.14
8/30/2024 5:50	14.42	221	0.11	7.86	379.31	8.8	11.56	12.05
8/30/2024 5:40	14.43	222.48	0.11	7.86	379.35	8.81	11.74	12.14
8/30/2024 5:30	14.43	221.06	0.11	7.86	379.07	8.8	9.72	12.14
8/30/2024 5:20	14.43	221.73	0.11	7.86	379.03	8.81	9.33	12.14
8/30/2024 5:10	14.44	220.59	0.1	7.86	379.22	8.8	9.54	12.12
8/30/2024 5:00	14.45	223.18	0.11	7.86	379.33	8.8	9.09	12.17
8/30/2024 4:50	14.46	220.53	0.1	7.86	379.6	8.79	9.98	12.07
8/30/2024 4:40	14.46	222.03	0.11	7.86	378.85	8.8	10.66	12.07
8/30/2024 4:30	14.47	219.48	0.1	7.86	379.47	8.8	7.86	12.09
8/30/2024 4:20	14.48	223.23	0.11	7.86	379.13	8.78	6.23	12.09
8/30/2024 4:10	14.49	221.95	0.11	7.86	379.58	8.78	6.47	12.09
8/30/2024 4:00	14.49	222.87	0.11	7.86	379.19	8.78	7.04	12.19
8/30/2024 3:50	14.49	221.24	0.11	7.86	379.09	8.77	5.77	12.19
8/30/2024 3:40	14.5	220.97	0.11	7.86	378.86	8.79	5.37	12.24
8/30/2024 3:30	14.51	220.51	0.1	7.86	379.17	8.78	20.2	12.19
8/30/2024 3:20	14.52	222.41	0.11	7.86	378.68	8.78	6.67	12.21
8/30/2024 3:10	14.53	222.28	0.11	7.86	379.07	8.78	5.57	12.21
8/30/2024 3:00	14.54	222.43	0.11	7.85	378.67	8.79	6.48	12.21
8/30/2024 2:50	14.54	222.54	0.11	7.85	379.32	8.77	5.26	12.19
8/30/2024 2:40	14.56	224.92	0.11	7.85	379.41	8.76	7.89	12.12

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8/30/2024 2:30	14.56	219.74	0.1	7.85	379.56	8.77	6.67	12.24
8/30/2024 2:20	14.57	224.11	0.11	7.85	379.53	8.76	4.81	12.26
8/30/2024 2:10	14.57	221.06	0.11	7.85	379.17	8.76	4.62	12.21
8/30/2024 2:00	14.57	222.68	0.11	7.85	378.68	8.78	13.65	12.21
8/30/2024 1:50	14.57	221.07	0.11	7.85	378.87	8.77	4.29	12.24
8/30/2024 1:40	14.58	222.59	0.11	7.85	378.46	8.77	4.2	12.26
8/30/2024 1:30	14.59	221.42	0.11	7.85	378.59	8.77	4.72	12.26
8/30/2024 1:20	14.59	220.38	0.1	7.85	378.45	8.78	3.89	12.26
8/30/2024 1:10	14.6	220.22	0.1	7.84	378.22	8.77	3.44	12.26
8/30/2024 1:00	14.6	223.28	0.11	7.84	378.45	8.77	3.7	12.24
8/30/2024 0:50	14.61	220.7	0.11	7.84	378.36	8.75	5.71	12.17
8/30/2024 0:40	14.62	221.87	0.11	7.84	377.51	8.77	4.36	12.24
8/30/2024 0:30	14.63	220.73	0.11	7.84	378	8.76	3.93	12.26
8/30/2024 0:20	14.63	223.47	0.11	7.84	377.91	8.76	3.14	12.26
8/30/2024 0:10	14.63	220.6	0.11	7.84	378.33	8.75	2.96	12.29
8/30/2024 0:00	14.63	221.52	0.11	7.84	378.07	8.76	48.15	12.29
8/29/2024 23:50	14.64	219.02	0.1	7.84	378.17	8.77	3.58	12.19
8/29/2024 23:40	14.65	221.25	0.11	7.83	378.2	8.76	2.7	12.17
8/29/2024 23:30	14.66	221.44	0.11	7.84	378.33	8.76	4.2	12.17
8/29/2024 23:20	14.66	223.15	0.11	7.84	377.96	8.74	3.94	12.17
8/29/2024 23:10	14.66	220.21	0.1	7.83	378.16	8.76	2.73	12.19
8/29/2024 23:00	14.67	222.89	0.11	7.84	377.5	8.75	2.92	12.29
8/29/2024 22:50	14.68	220.45	0.1	7.83	378.18	8.75	2.52	12.29
8/29/2024 22:40	14.7	223.27	0.11	7.82	377.29	8.74	2.57	12.29
8/29/2024 22:30	14.71	221.32	0.11	7.82	378.28	8.74	2.74	12.31
8/29/2024 22:20	14.71	222.37	0.11	7.82	377.24	8.74	2.31	12.31
8/29/2024 22:10	14.71	219.2	0.1	7.82	377.91	8.75	2.21	12.31
8/29/2024 22:00	14.72	221.95	0.11	7.82	377.92	8.75	2.78	12.31
8/29/2024 21:50	14.72	219.19	0.1	7.82	378.28	8.75	2.49	12.31
8/29/2024 21:40	14.73	220.96	0.11	7.82	378.01	8.75	2.73	12.31
8/29/2024 21:30	14.74	218.73	0.1	7.82	377.83	8.75	2.5	12.31
8/29/2024 21:20	14.75	219.51	0.1	7.81	377.38	8.75	3.93	12.31
8/29/2024 21:10	14.76	219.13	0.1	7.82	377.28	8.73	2.23	12.33
8/29/2024 21:00	14.77	219.47	0.1	7.82	377.03	8.73	26.05	12.33
8/29/2024 20:50	14.77	216.39	0.1	7.82	377.32	8.75	2.62	12.33
8/29/2024 20:40	14.78	218.09	0.1	7.82	376.3	8.74	2.6	12.33
8/29/2024 20:30	14.79	216.45	0.1	7.82	376.88	8.74	2.21	12.33
8/29/2024 20:20	14.8	218.13	0.1	7.82	376.24	8.73	2.2	12.31
8/29/2024 20:10	14.81	215.33	0.1	7.82	376.46	8.74	3.49	12.36
8/29/2024 20:00	14.82	215.63	0.1	7.83	376.3	8.74	2.63	12.36
8/29/2024 19:50	14.83	213.33	0.1	7.83	376.07	8.76	2.21	12.36
8/29/2024 19:40	14.84	215.58	0.1	7.83	376.4	8.75	2.77	12.26
8/29/2024 19:30	14.84	212.03	0.1	7.82	376.72	8.75	1.97	12.33
8/29/2024 19:20	14.84	215.77	0.1	7.82	376.64	8.75	1.99	12.65
8/29/2024 19:10	14.85	214.69	0.1	7.82	376.93	8.75	2.44	12.76
8/29/2024 19:00	14.86	215.82	0.1	7.82	376.79	8.75	2.11	12.79
8/29/2024 18:50	14.87	213.92	0.1	7.82	376.28	8.76	11.44	12.88

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8/29/2024 18:40	14.88	213.46	0.1	7.83	376.24	8.75	1.84	12.96
8/29/2024 18:30	14.89	213.28	0.1	7.83	376.63	8.76	3.54	13
8/29/2024 18:30	14.89	213.22	0.1	7.83	375.8	8.77	2.14	13.1
8/29/2024 18:20	14.91	213.14	0.1	7.84	375.38	8.76	2.22	13
8/29/2024 18:10	14.94	211.49	0.1	7.85	374.84	8.77	3.07	12.91
8/29/2024 18:00	14.97	211.15	0.1	7.85	374.75	8.77	2.37	12.88
8/29/2024 17:50	15.01	211.97	0.1	7.86	373.92	8.77	1.7	12.93
8/29/2024 17:40	15.04	213.41	0.1	7.87	373.28	8.77	2.69	12.81
8/29/2024 17:30	15.08	210.65	0.1	7.87	373.23	8.78	1.9	12.74
8/29/2024 17:20	15.11	210.43	0.1	7.87	373.08	8.78	2.98	12.67
8/29/2024 17:10	15.14	209.7	0.1	7.88	372.61	8.79	2.73	12.84
8/29/2024 17:00	15.18	209.39	0.1	7.89	372.4	8.79	2.05	13.12
8/29/2024 16:50	15.21	208.31	0.1	7.89	372.57	8.79	2.43	13.12
8/29/2024 16:40	15.24	209.77	0.1	7.89	372.16	8.79	51.7	13.15
8/29/2024 16:30	15.29	208.99	0.1	7.9	372.14	8.79	2.54	13.15
8/29/2024 16:20	15.33	208.29	0.1	7.9	371.95	8.79	1.65	13.15
8/29/2024 16:10	15.37	206.91	0.1	7.9	372.15	8.79	3.13	13.24
8/29/2024 16:00	15.4	206.93	0.1	7.9	371.27	8.78	1.46	13.39
8/29/2024 15:50	15.43	205.47	0.1	7.9	371.06	8.79	1.88	13.36
8/29/2024 15:40	15.46	206.71	0.1	7.9	370.43	8.78	1.95	13.36
8/29/2024 15:30	15.48	206.28	0.1	7.9	369.98	8.8	1.71	13.36
8/29/2024 15:20	15.48	205.88	0.1	7.9	370.05	8.79	2.1	13.36
8/29/2024 15:10	15.48	206.08	0.1	7.9	369.51	8.8	1.72	13.36
8/29/2024 15:00	15.48	207.1	0.1	7.9	369.33	8.8	1.73	13.27
8/29/2024 14:50	15.45	207.06	0.1	7.9	369.35	8.8	2.75	13.34
8/29/2024 14:40	15.43	206.7	0.1	7.9	368.99	8.81	1.85	13.34
8/29/2024 14:30	15.41	207.84	0.1	7.9	368.8	8.81	2.05	13.27
8/29/2024 14:20	15.39	207.44	0.1	7.9	368.67	8.82	1.93	13.36
8/29/2024 14:10	15.37	204.78	0.1	7.9	368.58	8.83	2.72	13.36
8/29/2024 14:00	15.35	203.98	0.1	7.9	367.57	8.85	3.04	13.36
8/29/2024 13:50	15.35	207.93	0.1	7.9	368.22	8.84	2.07	13.36
8/29/2024 13:40	15.31	204.08	0.1	7.9	368.15	8.85	1.58	13.36
8/29/2024 13:30	15.3	207.18	0.1	7.91	367.35	8.85	2.33	13.29
8/29/2024 13:20	15.26	205.26	0.1	7.9	366.81	8.86	1.41	13.27
8/29/2024 13:10	15.24	207.25	0.1	7.9	367.07	8.85	1.72	13.36
8/29/2024 13:00	15.2	205.29	0.1	7.91	366.5	8.87	2.01	13.34
8/29/2024 12:50	15.18	204.64	0.1	7.91	366.45	8.88	1.71	13.34
8/29/2024 12:40	15.16	206.23	0.1	7.91	366	8.88	183.28	13.34
8/29/2024 12:30	15.13	206.37	0.1	7.9	365.89	8.87	1.27	13.36
8/29/2024 12:20	15.09	206.22	0.1	7.9	365	8.9	1.29	13.36
8/29/2024 12:10	15.07	206.97	0.1	7.9	365.09	8.89	2.62	13.36
8/29/2024 12:00	15.03	208.08	0.1	7.9	365.01	8.9	2.03	13.24
8/29/2024 11:50	14.98	207.78	0.1	7.9	364.92	8.91	2.02	13.29
8/29/2024 11:40	14.95	207.95	0.1	7.9	364.56	8.92	2.45	13.36
8/29/2024 11:30	14.9	208.02	0.1	7.9	364.46	8.92	1.65	13.39
8/29/2024 11:20	14.86	207.32	0.1	7.89	364	8.92	2.1	13.41
8/29/2024 11:10	14.83	210.22	0.1	7.89	363.66	8.93	1.47	13.41

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8/29/2024 11:00	14.77	208.08	0.1	7.89	363.45	8.94	1.24	13.32
8/29/2024 10:50	14.72	208.14	0.1	7.9	362.6	8.96	1.14	13.44
8/29/2024 10:40	14.68	209.88	0.1	7.89	362.19	8.96	1.12	13.48
8/29/2024 10:30	14.63	210.09	0.1	7.89	361.53	8.95	1.09	13.51
8/29/2024 10:20	14.59	211.66	0.1	7.89	360.87	8.96	2.22	13.53
8/29/2024 10:10	14.54	212.1	0.1	7.89	360.65	8.96	1.1	13.58
8/29/2024 10:00	14.5	211.66	0.1	7.89	359.84	8.98	1.31	13.63
8/29/2024 9:50	14.44	211.84	0.1	7.89	358.97	8.96	2.2	13.67
8/29/2024 9:40	14.4	213.13	0.1	7.89	358.34	8.95	1.3	13.7
8/29/2024 9:30	14.35	214.83	0.1	7.89	358.09	8.95	2.42	13.05
8/29/2024 9:20	14.3	214.55	0.1	7.89	357.77	8.96	1.24	12.6
8/29/2024 9:10	14.27	214.35	0.1	7.89	357.28	8.97	2.26	12.5
8/29/2024 9:00	14.24	214.98	0.1	7.89	356.6	8.96	1.57	12.48
8/29/2024 8:50	14.24	215.39	0.1	7.89	355.82	8.95	1.01	12.43
8/29/2024 8:40	14.23	214.5	0.1	7.89	354.88	8.97	2.35	12.38
8/29/2024 8:30	14.22	215.2	0.1	7.89	353.93	8.96	1.11	12.36
8/29/2024 8:20	14.22	218.02	0.1	7.88	352.74	8.95	3.33	12.31
8/29/2024 8:10	14.21	209.52	0.1	7.89	353.13	8.98	1.22	12.29
8/29/2024 8:00	14.17	197.75	0.09	7.9	352.09	9.04	1.14	12.26
8/29/2024 7:50	14.14	178.21	0.08	7.91	352.89	9.1	1.34	12.21
8/29/2024 7:40	14.12	163.14	0.08	7.93	352.98	9.2	1.24	12.17
8/29/2024 7:30	14.13	162.92	0.08	7.93	352.64	9.19	1.42	12.12
8/29/2024 7:20	14.14	163.56	0.08	7.93	352.81	9.18	1.4	12.02
8/29/2024 7:10	14.14	160.56	0.08	7.93	352.82	9.2	3.34	12.02
8/29/2024 7:00	14.15	164.58	0.08	7.92	352.13	9.17	1.85	12.05
8/29/2024 6:50	14.14	162.04	0.08	7.92	353.43	9.2	4.16	12.14
8/29/2024 6:40	14.15	158.91	0.08	7.91	353.74	9.2	2.63	12.12
8/29/2024 6:30	14.19	186.61	0.09	7.91	349.47	9.13	13.19	12.14
8/29/2024 6:20	14.24	222.34	0.11	7.88	352.73	8.92	1.42	12.12
8/29/2024 6:10	14.25	223.57	0.11	7.88	354.19	8.92	1.41	12.12
8/29/2024 6:00	14.26	222.12	0.11	7.88	352.66	8.92	0.9	12.12
8/29/2024 5:50	14.27	224.2	0.11	7.88	352.07	8.91	1.17	12.12
8/29/2024 5:40	14.29	221.12	0.11	7.88	349.27	8.93	1.14	12.02
8/29/2024 5:30	14.3	224.55	0.11	7.88	348.99	8.9	0.95	12.02
8/29/2024 5:20	14.31	224.7	0.11	7.88	348.42	8.91	1.08	12.02
8/29/2024 5:10	14.32	225.42	0.11	7.88	348.37	8.91	0.8	12.09
8/29/2024 5:00	14.32	222.89	0.11	7.89	347.82	8.91	1.27	12
8/29/2024 4:50	14.32	222.47	0.11	7.88	347.31	8.92	2.25	12.05
8/29/2024 4:40	14.32	225.07	0.11	7.89	346.2	8.9	0.79	12.05
8/29/2024 4:30	14.32	225.7	0.11	7.88	345.53	8.9	1.13	12.14
8/29/2024 4:20	14.33	225.02	0.11	7.88	344.97	8.9	0.95	12.07
8/29/2024 4:10	14.34	230.27	0.11	7.88	344.75	8.88	0.81	12.17
8/29/2024 4:00	14.35	228.44	0.11	7.88	343.78	8.88	1.56	12.17
8/29/2024 3:50	14.35	226.33	0.11	7.88	343.84	8.9	0.77	12.19
8/29/2024 3:40	14.37	225.69	0.11	7.88	342.53	8.9	1	12.19
8/29/2024 3:30	14.38	228.81	0.11	7.88	342.05	8.88	1.39	12.17
8/29/2024 3:20	14.39	226.63	0.11	7.88	340.89	8.9	15.75	12.19

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8/29/2024 3:20	14.39	226.63	0.11	7.88	340.89	8.9	15.75	12.19
8/29/2024 3:10	14.39	229.58	0.11	7.88	340.48	8.89	0.7	12.19
8/29/2024 3:00	14.4	231.29	0.11	7.89	338.94	8.88	2.21	12.19
8/29/2024 2:50	14.41	229.64	0.11	7.89	338.32	8.87	1.53	12.19
8/29/2024 2:40	14.42	229.21	0.11	7.88	338.37	8.89	0.79	12.12
8/29/2024 2:30	14.43	228.34	0.11	7.89	337.26	8.88	1.05	12.09
8/29/2024 2:20	14.44	228.9	0.11	7.88	336.25	8.88	1.73	12.12
8/29/2024 2:10	14.46	228.07	0.11	7.89	334.83	8.88	0.71	12.21
8/29/2024 2:00	14.47	229.54	0.11	7.89	334.47	8.86	0.62	12.19
8/29/2024 1:50	14.48	232.24	0.11	7.88	332.89	8.86	0.65	12.12
8/29/2024 1:40	14.5	229.91	0.11	7.89	332.46	8.86	0.69	12.12
8/29/2024 1:30	14.51	229.17	0.11	7.88	331.49	8.87	0.61	12.24
8/29/2024 1:20	14.52	229.18	0.11	7.89	330.1	8.87	1.48	12.26
8/29/2024 1:10	14.53	230.45	0.11	7.89	328.69	8.87	0.59	12.26
8/29/2024 1:00	14.53	234.84	0.11	7.88	328.99	8.85	2.87	12.26
8/29/2024 0:50	14.55	232.47	0.11	7.89	328.44	8.86	0.66	12.24
8/29/2024 0:40	14.55	231.43	0.11	7.88	325.47	8.85	1.28	12.24
8/29/2024 0:30	14.58	230.79	0.11	7.89	323.9	8.85	0.73	12.26
8/29/2024 0:20	14.61	226.43	0.11	7.89	324.24	8.86	0.84	12.24
8/29/2024 0:10	14.65	219.14	0.1	7.89	324.31	8.86	0.87	12.21
8/29/2024 0:00	14.78	200.76	0.1	7.91	324.43	8.9	0.85	12.19
8/28/2024 23:50	14.92	184.72	0.09	7.92	324.89	8.93	3.18	12.29
8/28/2024 23:40	14.99	176.05	0.08	7.93	323.86	8.98	1.74	12.29
8/28/2024 23:30	15.03	174.33	0.08	7.94	324.08	8.97	1.19	12.29
8/28/2024 23:20	15.07	172.59	0.08	7.94	324.28	8.99	1.07	12.21
8/28/2024 23:10	15.11	177.34	0.08	7.94	322.62	8.97	0.85	12.19
8/28/2024 23:00	15.13	180.59	0.09	7.94	320.93	8.95	0.82	12.19
8/28/2024 22:50	15.16	179.19	0.08	7.94	320.44	8.96	7.86	12.29
8/28/2024 22:40	15.18	178.7	0.08	7.95	321.77	8.96	2.78	12.31
8/28/2024 22:30	15.17	186.14	0.09	7.95	322.76	8.94	1.94	12.29
8/28/2024 22:20	15.16	184.54	0.09	7.95	325.98	8.95	1.32	12.31
8/28/2024 22:10	15.16	184.24	0.09	7.95	324.64	8.97	2.63	12.31
8/28/2024 22:00	15.17	181.57	0.09	7.95	323.2	8.97	0.82	12.31
8/28/2024 21:50	15.15	183.97	0.09	7.94	321.68	8.97	45.01	12.31
8/28/2024 21:40	15.11	182.99	0.09	7.94	320.41	8.97	0.85	12.21
8/28/2024 21:30	15.06	188.74	0.09	7.93	316.63	8.98	1.28	12.33
8/28/2024 21:20	14.94	182.41	0.09	7.91	319.65	9	27.02	12.31
8/28/2024 21:10	14.71	235.18	0.11	7.88	316.68	8.81	1.94	12.31
8/28/2024 21:00	14.74	231.37	0.11	7.88	318.29	8.84	1.48	12.31
8/28/2024 20:50	14.74	235.21	0.11	7.88	316.68	8.81	1.2	12.33
8/28/2024 20:40	14.75	233.56	0.11	7.88	317.61	8.81	5.54	12.33
8/28/2024 20:30	14.77	232.39	0.11	7.88	317.77	8.82	2.34	12.33
8/28/2024 20:20	14.8	234.21	0.11	7.88	316.23	8.82	1.11	12.33
8/28/2024 20:10	14.82	232.62	0.11	7.88	314.04	8.81	1.05	12.26
8/28/2024 20:00	14.83	235.2	0.11	7.88	314.43	8.78	1.71	12.26
8/28/2024 19:50	14.87	230.97	0.11	7.89	314.31	8.8	0.9	12.29
8/28/2024 19:40	14.93	225.15	0.11	7.9	315.95	8.82	1.32	12.29

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8/28/2024 19:30	15.01	219.99	0.1	7.91	316.09	8.83	0.91	12.33
8/28/2024 19:20	15.12	214.8	0.1	7.91	315.8	8.82	0.67	12.48
8/28/2024 19:10	15.26	211.22	0.1	7.93	313.99	8.83	1.58	12.84
8/28/2024 19:00	15.55	192.01	0.09	7.96	322.16	8.87	1.63	12.88
8/28/2024 18:50	15.83	168.41	0.08	8	320.23	8.99	0.5	12.96
8/28/2024 18:40	15.77	172.81	0.08	8	318.32	8.98	27.82	13.03
8/28/2024 18:30	15.77	168.5	0.08	7.99	317.25	9.01	0.56	13.12
8/28/2024 18:20	15.66	169.27	0.08	7.99	316.4	9	0.92	13.12
8/28/2024 18:10	15.41	162.53	0.08	7.97	309.01	9.07	0.81	13.15
8/28/2024 18:00	14.9	236.9	0.11	7.9	301.3	8.82	2.15	13.15
8/28/2024 17:50	14.94	236.02	0.11	7.91	299.99	8.81	1.36	13.12
8/28/2024 17:40	15	230.16	0.11	7.91	300.85	8.82	1.84	13.15
8/28/2024 17:30	15.06	230.2	0.11	7.91	300.77	8.84	0.61	13.17
8/28/2024 17:20	15.13	227.02	0.11	7.92	298.66	8.83	0.97	13.12
8/28/2024 17:10	15.25	219.58	0.1	7.93	304.3	8.84	1.17	13.03
8/28/2024 17:00	15.48	184.93	0.09	7.97	306.55	8.97	0.72	13.17
8/28/2024 16:50	15.51	188.38	0.09	7.98	300.85	8.97	11.65	13.12
8/28/2024 16:40	15.52	186.8	0.09	7.98	304.65	8.98	0.61	13.15
8/28/2024 16:30	15.5	189.7	0.09	7.97	304.47	8.98	2.3	13.17
8/28/2024 16:20	15.5	189.54	0.09	7.96	308.59	8.98	0.93	13.1
8/28/2024 16:10	15.47	187.88	0.09	7.96	306.78	9	0.52	13.15
8/28/2024 16:00	15.43	194.83	0.09	7.95	308.59	8.97	1.08	13.24
8/28/2024 15:50	15.4	195.15	0.09	7.95	309.1	8.99	0.92	13.44
8/28/2024 15:40	15.36	193.47	0.09	7.94	314.37	8.99	3.97	13.44
8/28/2024 15:30	15.25	190.6	0.09	7.92	313.02	9.01	11.05	13.44
8/28/2024 15:20	15.16	206.36	0.1	7.92	311.21	8.89	1.04	13.46
8/28/2024 15:10	15.17	224.45	0.11	7.9	311.56	8.91	0.6	13.44
8/28/2024 15:00	15.16	218.92	0.1	7.92	311.89	8.91	0.84	13.41
8/28/2024 14:50	15.16	225.84	0.11	7.9	312.31	8.91	0.76	13.41
8/28/2024 14:40	15.15	226.8	0.11	7.91	311.29	8.89	1.31	13.41
8/28/2024 14:30	15.14	226.72	0.11	7.9	312.13	8.91	0.53	13.44
8/28/2024 14:20	15.13	227.91	0.11	7.9	311.51	8.91	15.44	13.44
8/28/2024 14:10	15.12	225.12	0.11	7.9	312.28	8.93	0.6	13.44
8/28/2024 14:00	15.07	221.08	0.11	7.91	311.01	8.95	0.73	13.34
8/28/2024 13:50	15.06	224.4	0.11	7.9	308.99	8.95	0.76	13.34
8/28/2024 13:40	15	221.01	0.11	7.91	309.02	8.96	0.88	13.46
8/28/2024 13:30	14.99	223.94	0.11	7.91	308.72	8.94	0.51	13.41
8/28/2024 13:20	14.95	221.89	0.11	7.91	308.55	8.98	0.66	13.44
8/28/2024 13:10	14.89	221.43	0.11	7.91	306.05	9	0.65	13.34
8/28/2024 13:00	14.85	221.16	0.11	7.91	304.42	9.02	0.52	13.41
8/28/2024 12:50	14.84	227.43	0.11	7.91	303.87	8.99	0.53	13.44
8/28/2024 12:40	14.72	216.59	0.1	7.91	305.02	9.05	0.49	13.41
8/28/2024 12:30	14.7	221.08	0.11	7.91	303.98	9.05	0.37	13.44
8/28/2024 12:20	14.68	224.89	0.11	7.9	303.45	9.05	0.74	13.41
8/28/2024 12:10	14.61	219.62	0.1	7.91	299.79	9.06	0.45	13.44
8/28/2024 12:00	14.57	222.05	0.11	7.91	299.3	9.08	0.46	13.44
8/28/2024 11:50	14.53	223.07	0.11	7.91	298	9.07	0.43	13.44

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8/28/2024 11:40	14.49	223.29	0.11	7.9	297	9.09	0.45	13.34
8/28/2024 11:30	14.46	221.19	0.11	7.91	295.43	9.08	0.59	13.46
8/28/2024 11:20	14.44	224.62	0.11	7.9	295.56	9.07	1.41	13.46
8/28/2024 11:10	14.39	222.85	0.11	7.91	295.45	9.07	0.41	13.48
8/28/2024 11:00	14.36	224.73	0.11	7.91	293.12	9.09	0.49	13.48
8/28/2024 10:50	14.3	225.32	0.11	7.9	292.6	9.13	0.54	13.51
8/28/2024 10:40	14.26	224.24	0.11	7.9	291.32	9.12	0.85	13.51
8/28/2024 10:30	14.23	225.82	0.11	7.91	289.51	9.1	0.43	13.53
8/28/2024 10:20	14.19	228.66	0.11	7.9	290.44	9.13	2.85	13.48
8/28/2024 10:10	14.16	228.32	0.11	7.91	286.69	9.1	0.5	13.6
8/28/2024 10:00	14.11	226.21	0.11	7.9	285	9.13	0.66	13.65
8/28/2024 9:50	14.1	230.55	0.11	7.9	283.24	9.11	10.06	13.7
8/28/2024 9:40	14.03	226.4	0.11	7.9	283.01	9.14	0.54	13.75
8/28/2024 9:30	14.01	229.13	0.11	7.9	282.14	9.12	0.87	13.77
8/28/2024 9:20	13.94	225.06	0.11	7.91	282.39	9.13	1	12.81
8/28/2024 9:10	13.94	226.7	0.11	7.9	283.39	9.15	0.44	12.91
8/28/2024 9:00	13.96	230.09	0.11	7.9	283.21	9.13	6.69	13.08
8/28/2024 8:50	13.95	229	0.11	7.9	281.73	9.12	0.48	13.08
8/28/2024 8:40	13.93	227.43	0.11	7.91	280.95	9.12	0.61	12.96
8/28/2024 8:30	13.93	229.09	0.11	7.9	277.63	9.14	0.54	12.81
8/28/2024 8:20	13.95	230.64	0.11	7.9	273.66	9.11	0.92	12.69
8/28/2024 8:10	13.93	232.12	0.11	7.9	272.94	9.13	0.44	12.6
8/28/2024 8:00	13.91	229.55	0.11	7.9	270.01	9.13	0.56	12.45
8/28/2024 7:50	13.9	228.6	0.11	7.9	272.68	9.14	2.16	12.31
8/28/2024 7:40	13.91	231.94	0.11	7.9	270.55	9.11	1.35	12.17
8/28/2024 7:30	13.91	231.91	0.11	7.9	267.4	9.1	0.57	12.12
8/28/2024 7:20	13.9	230.03	0.11	7.9	269.9	9.1	1.23	12.07
8/28/2024 7:10	13.9	229.93	0.11	7.9	267.63	9.12	0.45	12.14
8/28/2024 7:00	13.9	227.15	0.11	7.9	268.99	9.1	0.72	12.14
8/28/2024 6:50	13.92	231.99	0.11	7.9	267.92	9.1	0.71	12.12
8/28/2024 6:40	13.9	228.4	0.11	7.89	268.64	9.13	1.85	12.12
8/28/2024 6:30	13.92	228.98	0.11	7.9	265.51	9.09	1.08	12.12
8/28/2024 6:20	13.91	230.2	0.11	7.89	266.1	9.13	0.42	12.12
8/28/2024 6:10	13.91	233.31	0.11	7.89	264.56	9.13	1.36	12.12
8/28/2024 6:00	13.92	230.4	0.11	7.9	263.68	9.1	3.03	12.12
8/28/2024 5:50	13.92	231.25	0.11	7.9	260.83	9.1	0.92	12.14
8/28/2024 5:40	13.92	230.99	0.11	7.9	264.12	9.11	0.87	12.12
8/28/2024 5:30	13.93	231.3	0.11	7.9	262.61	9.09	1.7	12.12
8/28/2024 5:20	13.91	231.06	0.11	7.89	264.59	9.12	0.72	12
8/28/2024 5:10	13.9	227.29	0.11	7.9	264.12	9.12	0.79	12
8/28/2024 5:00	13.9	227.04	0.11	7.9	264.35	9.11	2.93	12
8/28/2024 4:50	13.9	230.32	0.11	7.9	261.08	9.13	0.52	12.12
8/28/2024 4:40	13.91	232.06	0.11	7.9	263.12	9.1	1.43	12.17
8/28/2024 4:30	13.89	227.27	0.11	7.9	258.77	9.12	1.42	12.14
8/28/2024 4:20	13.91	229.39	0.11	7.9	260.2	9.11	0.61	12.07
8/28/2024 4:10	13.94	234.95	0.11	7.89	259.05	9.1	2.23	12.07
8/28/2024 4:00	13.94	229.83	0.11	7.9	256.85	9.1	1.07	12.07

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8/28/2024 3:50	13.95	232.07	0.11	7.9	257.68	9.1	0.72	12.17
8/28/2024 3:40	13.98	233.56	0.11	7.9	256.56	9.09	2.26	12.21
8/28/2024 3:30	13.98	231.66	0.11	7.9	254.02	9.09	1.83	12.21
8/28/2024 3:20	14	230.77	0.11	7.9	253.11	9.08	1.21	12.21
8/28/2024 3:10	14.03	238.75	0.11	7.9	251.55	9.07	7.68	12.14
8/28/2024 3:00	14.04	233.43	0.11	7.9	253.68	9.07	1.41	12.21
8/28/2024 2:50	14.06	236.37	0.11	7.9	251.58	9.06	0.75	12.21
8/28/2024 2:40	14.07	234.73	0.11	7.9	254.37	9.08	0.52	12.21
8/28/2024 2:30	14.09	235.47	0.11	7.9	251.66	9.05	0.53	12.21
8/28/2024 2:20	14.1	234.59	0.11	7.91	250.3	9.03	4.66	12.21
8/28/2024 2:10	14.12	238.9	0.11	7.9	250.56	9.06	0.45	12.24
8/28/2024 2:00	14.13	235.97	0.11	7.91	248.44	9.05	2.02	12.14
8/28/2024 1:50	14.17	242.95	0.12	7.9	245.51	9.03	0.72	12.21
8/28/2024 1:40	14.19	244.63	0.12	7.9	247.71	9.02	4.53	12.14
8/28/2024 1:30	14.22	252.47	0.12	7.9	244.9	8.99	0.31	12.24
8/28/2024 1:20	14.23	250.76	0.12	7.9	243.78	8.98	0.64	12.24
8/28/2024 1:10	14.24	248.49	0.12	7.91	244.14	8.98	0.53	12.24
8/28/2024 1:00	14.26	248.15	0.12	7.91	241.17	8.97	2.76	12.24
8/28/2024 0:50	14.25	243.82	0.12	7.91	246.07	9	0.28	12.26
8/28/2024 0:40	14.29	253.55	0.12	7.91	246.88	8.98	1.29	12.26
8/28/2024 0:30	14.28	250.36	0.12	7.91	245.04	8.99	1.29	12.17
8/28/2024 0:20	14.29	246.73	0.12	7.91	248.02	9	1.21	12.26
8/28/2024 0:10	14.27	238.41	0.11	7.91	249.35	9.03	0.27	12.21
8/28/2024 0:00	14.29	238.95	0.11	7.92	248.3	9	1.65	12.26
8/27/2024 23:50	14.33	246.79	0.12	7.91	251.92	8.98	2.32	12.29
8/27/2024 23:40	14.34	247.42	0.12	7.91	250.62	9	1.48	12.26
8/27/2024 23:30	14.33	237.55	0.11	7.91	252.56	8.99	0.26	12.29
8/27/2024 23:20	14.33	236.59	0.11	7.91	253.8	9.01	4.12	12.29
8/27/2024 23:10	14.32	230.36	0.11	7.91	256.79	9.04	2.64	12.29
8/27/2024 23:00	14.36	241.99	0.12	7.9	257.82	9.03	1.31	12.29
8/27/2024 22:50	14.35	232.88	0.11	7.91	255.7	9.03	0.84	12.29
8/27/2024 22:40	14.37	233.07	0.11	7.91	258.65	9.03	0.44	12.31
8/27/2024 22:30	14.38	233.53	0.11	7.9	258.23	9.02	0.47	12.21
8/27/2024 22:20	14.4	233.73	0.11	7.91	260.3	9.02	0.72	12.21
8/27/2024 22:10	14.41	235.36	0.11	7.91	259.01	9.02	3.45	12.21
8/27/2024 22:00	14.41	233.35	0.11	7.9	262.92	9.03	0.49	12.19
8/27/2024 21:50	14.42	228.59	0.11	7.91	260.98	9.01	0.42	12.19
8/27/2024 21:40	14.45	235.38	0.11	7.91	261.74	9	0.95	12.29
8/27/2024 21:30	14.45	227.73	0.11	7.91	262.83	8.99	1.26	12.21
8/27/2024 21:20	14.46	231.12	0.11	7.91	260.2	9.01	2.24	12.24
8/27/2024 21:10	14.48	231.31	0.11	7.9	257.93	9.01	1.03	12.33
8/27/2024 21:00	14.5	233.86	0.11	7.9	261.15	9	1.26	12.33
8/27/2024 20:50	14.51	232.73	0.11	7.9	262.16	9.01	0.25	12.33
8/27/2024 20:40	14.53	237.54	0.11	7.9	260.16	8.99	1.45	12.36
8/27/2024 20:30	14.54	232.44	0.11	7.9	259.39	9	0.22	12.33
8/27/2024 20:20	14.56	231.83	0.11	7.9	261.18	9	1.37	12.33
8/27/2024 20:10	14.57	227.23	0.11	7.91	262.61	8.99	0.37	12.31

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8/27/2024 20:00	14.6	233.39	0.11	7.9	261.54	8.97	0.98	12.24
8/27/2024 19:50	14.61	231.63	0.11	7.91	262.53	8.98	0.52	12.36
8/27/2024 19:40	14.64	235.33	0.11	7.9	262.92	8.98	1.33	12.57
8/27/2024 19:30	14.65	230.44	0.11	7.9	264.45	8.98	0.6	12.62
8/27/2024 19:20	14.67	231.97	0.11	7.91	265.01	8.99	3	12.69
8/27/2024 19:10	14.7	236.46	0.11	7.91	265.54	8.96	1.37	12.76
8/27/2024 19:00	14.71	236.41	0.11	7.9	264.37	8.98	1.07	12.79
8/27/2024 18:50	14.73	234.48	0.11	7.9	265.5	8.98	0.97	12.74
8/27/2024 18:40	14.75	232.43	0.11	7.89	265.5	8.98	1.34	12.88
8/27/2024 18:30	14.77	234.64	0.11	7.89	264.22	8.97	0.73	12.98
8/27/2024 18:20	14.78	236.57	0.11	7.89	265.86	8.97	1.85	13.2
8/27/2024 18:10	14.79	232.67	0.11	7.89	266.35	8.97	0.62	13.2
8/27/2024 18:00	14.8	233.54	0.11	7.9	267.85	8.98	2.93	13.15
8/27/2024 17:50	14.83	230.1	0.11	7.9	266.27	8.98	0.23	12.98
8/27/2024 17:40	14.84	235.24	0.11	7.9	270.84	9	0.93	12.98
8/27/2024 17:30	14.85	234.69	0.11	7.9	273.34	8.98	0.51	13.2
8/27/2024 17:20	14.89	224.18	0.11	7.91	272.95	9.01	0.32	13.51
8/27/2024 17:10	14.85	227.12	0.11	7.9	278.02	9.01	0.97	13.24
8/27/2024 17:00	14.86	223.64	0.11	7.91	275.52	9.01	1.77	13.22
8/27/2024 16:50	14.87	224.84	0.11	7.91	277.77	9.02	0.25	13.24
8/27/2024 16:40	14.89	224.31	0.11	7.92	282.63	9.03	0.39	13.36
8/27/2024 16:30	14.98	223.99	0.11	7.93	282.39	9.03	1.03	13.51
8/27/2024 16:20	14.96	222.22	0.11	7.93	281.48	9.04	0.1	13.53
8/27/2024 16:10	14.92	227.94	0.11	7.91	278.92	9.03	11.69	13.32
8/27/2024 16:00	14.92	226.43	0.11	7.91	281.76	9.03	0.35	13.51
8/27/2024 15:50	14.92	225.63	0.11	7.93	280.75	9.03	0.46	13.48
8/27/2024 15:40	14.93	222.29	0.11	7.92	282.54	9.03	0.41	13.41
8/27/2024 15:30	15.03	228.96	0.11	7.94	280.29	9.04	1.44	13.41
8/27/2024 15:20	15.02	224.3	0.11	7.94	279.24	9.04	0.31	13.51
8/27/2024 15:10	15.04	229.72	0.11	7.93	279.45	9.04	1.02	13.51
8/27/2024 15:00	14.98	230.73	0.11	7.93	277.82	9.06	1.36	13.53
8/27/2024 14:50	14.9	231.47	0.11	7.92	277.2	9.05	17.84	13.51
8/27/2024 14:40	14.99	233.37	0.11	7.93	279.34	9.03	0.34	13.53
8/27/2024 14:30	14.9	231.29	0.11	7.92	273.67	9.06	0.29	13.56
8/27/2024 14:20	14.84	230.36	0.11	7.93	275.01	9.06	0.72	13.53
8/27/2024 14:10	14.86	230.71	0.11	7.95	273.66	9.05	6.45	13.51
8/27/2024 14:00	14.93	241.87	0.12	7.94	274.42	9.02	0.24	13.51
8/27/2024 13:50	15.1	243.42	0.12	7.96	272.32	9	0.56	13.44
8/27/2024 13:40	15.05	238.28	0.11	7.96	272.76	9.01	1.21	13.44
8/27/2024 13:30	15	242.33	0.12	7.96	269.78	9.02	0.21	13.56
8/27/2024 13:20	14.97	247.94	0.12	7.96	267.38	8.99	0.67	13.58
8/27/2024 13:10	14.85	249.33	0.12	7.96	266.64	9.03	0.36	13.58
8/27/2024 13:00	14.74	250.06	0.12	7.96	264.53	9.01	0.23	13.58
8/27/2024 12:50	14.85	252.96	0.12	7.96	267.82	9.02	1.25	13.56
8/27/2024 12:40	14.76	243.84	0.12	7.96	270.62	9.06	0.38	13.56
8/27/2024 12:30	14.75	247.55	0.12	7.96	271.32	9.06	17.45	13.46
8/27/2024 12:20	14.55	244.9	0.12	7.95	274.87	9.1	0	13.56

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8/27/2024 12:10	14.53	246.23	0.12	7.94	277.74	9.11	1.55	13.51
8/27/2024 12:00	14.58	243	0.12	7.94	280.64	9.12	0.44	13.51
8/27/2024 11:50	14.67	241.21	0.12	7.94	282.96	9.13	1.43	13.56
8/27/2024 11:40	14.47	244.62	0.12	7.94	282.92	9.14	0.61	13.53
8/27/2024 11:30	14.47	240.1	0.11	7.94	283.98	9.15	0.21	13.41
8/27/2024 11:20	14.56	241.09	0.11	7.95	283.65	9.12	0.95	13.41
8/27/2024 11:10	14.56	238.41	0.11	7.95	278.28	9.12	0.83	13.53
8/27/2024 11:00			0.12	7.96	257.61	8.92	136.3	13.56
8/27/2024 10:50	14.33	261.86	0.13	7.89	396.65	0	1.05	13.58
8/27/2024 10:40	14.23	261.27	0.12	7.89	400.3	0	1.22	13.58
8/27/2024 10:30	14.17	263.19	0.13	7.9	400.23	0	0.61	13.56
8/27/2024 10:20	14.2	264.27	0.13	7.89	401.12	0	0.69	13.58
8/27/2024 10:10	14.16	264.01	0.13	7.89	402.57	0	0.83	13.6
8/27/2024 10:00	14.1	265.14	0.13	7.89	403.54	0	0.95	13.56
8/27/2024 9:50	14.04	265.9	0.13	7.89	404.07	0	0.9	13.6
8/27/2024 9:40	14	267.31	0.13	7.89	403.91	0	0.96	13.75
8/27/2024 9:30	13.97	267.49	0.13	7.89	403.98	0	0.95	13.2
8/27/2024 9:20	13.92	268.88	0.13	7.89	404.93	0	1.06	12.86
8/27/2024 9:10	13.91	268.67	0.13	7.89	405.7	0	1.09	12.69
8/27/2024 9:00	13.89	269.89	0.13	7.89	405.11	0	1.26	12.76
8/27/2024 8:50	13.88	270.24	0.13	7.89	404.7	0	1.1	12.65
8/27/2024 8:40	13.88	271.2	0.13	7.89	405.94	0	1.22	12.67
8/27/2024 8:30	13.87	272.39	0.13	7.89	405.03	0	1.37	12.62
8/27/2024 8:20	13.86	273.47	0.13	7.89	404.73	0	1.72	12.57
8/27/2024 8:10	13.86	274.39	0.13	7.89	403.59	0	1.72	12.41
8/27/2024 8:00	13.86	276.38	0.13	7.89	403.13	0	2	12.43
8/27/2024 7:50	13.88	277.3	0.13	7.89	401.95	0	1.99	12.38
8/27/2024 7:40	13.91	278.69	0.13	7.89	401.01	0	2.46	12.33
8/27/2024 7:30	13.92	279.86	0.13	7.89	399.96	0	2.04	12.29
8/27/2024 7:20	13.94	280.97	0.13	7.89	399.73	0	2.48	12.21
8/27/2024 7:10	13.97	279.13	0.13	7.89	398.91	0	2.73	12.19
8/27/2024 7:00	14	278.74	0.13	7.89	398.7	0	3.21	12.17
8/27/2024 6:50	14.03	280.18	0.13	7.89	396.94	0	2.31	12.17
8/27/2024 6:40	14.07	280.87	0.13	7.88	395.23	0	2.58	12.14
8/27/2024 6:30	14.1	280.56	0.13	7.88	392.99	0	2.52	12.14
8/27/2024 6:20	14.13	280.42	0.13	7.89	391.42	0	2.94	12.14
8/27/2024 6:10	14.17	280.22	0.13	7.88	389.65	0	3.04	12.12
8/27/2024 6:00	0	0	0	7.89	387.84	0	3.63	12.05
8/27/2024 5:50	14.24	279.81	0.13	7.88	386.6	0	3.17	12.12
8/27/2024 5:40	14.27	279.91	0.13	7.88	383.66	0	3.32	12.12
8/27/2024 5:30	14.3	280.05	0.13	7.88	377.66	0	3.14	12.12
8/27/2024 5:20	14.33	280.65	0.13	7.88	372.96	0	3.78	12.12
8/27/2024 5:10	14.36	280.62	0.13	7.88	366.07	0	2.88	12.12
8/27/2024 5:00	14.4	280.64	0.13	7.87	355.33	0	3.24	12.02
8/27/2024 4:50	14.43	281.04	0.13	7.87	337.61	0	3.81	12.05
8/27/2024 4:40	0	0	0	7.88	313.73	0	4.65	12.12
8/27/2024 4:30	14.47	279.7	0.13	7.87	315.55	0	4.21	12.02

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8/27/2024 4:20	14.49	278.16	0.13	7.86	316.63	0	4.62	12.12
8/27/2024 4:10	14.5	275.68	0.13	7.87	297.1	0	3.87	12.14
8/27/2024 4:00	14.52	273.71	0.13	7.87	273.12	0	5.24	12.17
8/27/2024 3:50	14.54	273.45	0.13	7.86	261.61	0	6.26	12.17
8/27/2024 3:40	14.57	270.1	0.13	7.86	276.68	0	6.14	12.17
8/27/2024 3:30	14.59	268.7	0.13	7.85	262.7	0	4.97	12.17
8/27/2024 3:20	14.61	265.57	0.13	7.85	244.85	0	4.91	12.07
8/27/2024 3:10	14.62	264.97	0.13	7.85	239.73	0	6	12.14
8/27/2024 3:00	14.64	261.73	0.13	7.84	251.74	0	7.37	12.05
8/27/2024 2:50	14.65	260.22	0.12	7.84	260.3	0	6.57	12.17
8/27/2024 2:40	14.66	259.16	0.12	7.83	262.95	0	8.22	12.17
8/27/2024 2:30	14.67	256.19	0.12	7.83	272.45	0	7.01	12.17
8/27/2024 2:20	14.67	252.29	0.12	7.82	284.94	0	7.5	12.14
8/27/2024 2:10	14.68	247.76	0.12	7.8	292.42	0	6.01	12.19
8/27/2024 2:00	14.69	239.33	0.11	7.79	291.52	0	7.11	12.19
8/27/2024 1:50	14.7	235.4	0.11	7.78	338.62	0	8.54	12.19
8/27/2024 1:40	14.71	230.16	0.11	7.77	355.03	0	11.24	12.19
8/27/2024 1:30	14.71	224.27	0.11	7.75	364.19	0	7.35	12.19
8/27/2024 1:20	0	0	0	7.72	366.49	0	8.2	12.19
8/27/2024 1:10	14.71	210.17	0.1	7.71	367.63	0	9.83	12.19
8/27/2024 1:00	14.7	204.42	0.1	7.73	363.76	0	9.65	12.19
8/27/2024 0:50	14.71	196.18	0.09	7.73	365.34	0	10.76	12.12
8/27/2024 0:40	14.7	191.81	0.09	7.71	366.06	0	13.05	12.21
8/27/2024 0:30	14.7	187.19	0.09	7.72	368.76	0	13.51	12.19
8/27/2024 0:20	14.7	184.87	0.09	7.74	368.77	0	14.14	12.21
8/27/2024 0:10	14.7	180.79	0.09	7.75	370.36	0	13.24	12.14
8/27/2024 0:00	14.7	178.5	0.08	7.77	372.07	0.03	15.92	12.12
8/26/2024 23:50	14.69	176.18	0.08	7.77	372.4	0.08	17.22	12.14
8/26/2024 23:40	14.69	170.8	0.08	7.77	372.35	0.19	22.25	12.14
8/26/2024 23:30	14.69	166.23	0.08	7.76	372.67	0.4	17.74	12.24
8/26/2024 23:20	14.7	176.59	0.08	7.76	373.3	0.15	21.1	12.26
8/26/2024 23:10	14.71	174.78	0.08	7.79	373.8	0.07	24.69	12.26
8/26/2024 23:00	14.72	176.83	0.08	7.81	374.25	0.06	31.62	12.26
8/26/2024 22:50	14.72	173.15	0.08	7.84	373.1	0.03	41.12	12.26
8/26/2024 22:40	14.73	173.65	0.08	7.86	371.18	0.01	52.5	12.26
8/26/2024 22:30	14.74	164.7	0.08	7.89	369.79	0	54.27	12.26
8/26/2024 22:20	14.75	162.91	0.08	7.86	369.58	0	65.71	12.26
8/26/2024 22:10	14.76	162.68	0.08	7.86	373.72	0	76.4	12.29
8/26/2024 22:00	14.78	154.16	0.07	7.84	382.13	0	90.12	12.26
8/26/2024 21:50	14.8	156.46	0.07	7.85	376.75	0	125.77	12.29
8/26/2024 21:40	14.82	157.76	0.07	7.84	376.86	0	169.51	12.29
8/26/2024 21:30	14.84	158.75	0.08	7.85	376.83	0	320.18	12.17
8/26/2024 21:20	0	0	0	7.86	375.43	0	421.6	12.29
8/26/2024 21:10	14.88	158.35	0.07	7.86	372.18	0	579.12	12.31
8/26/2024 21:00	14.9	161.78	0.08	7.86	370.22	0	765.21	12.21
8/26/2024 20:50	14.93	163.5	0.08	7.88	369.04	0	626.78	12.29
8/26/2024 20:40	14.95	172.85	0.08	7.87	368.8	0	521.71	12.21

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8/26/2024 20:30	14.97	174.34	0.08	7.87	366.74	0	892.28	12.31
8/26/2024 20:20	14.99	175.66	0.08	7.86	365.73	0.01	751.3	12.31
8/26/2024 20:10	15.01	175.69	0.08	7.87	359.97	0.02	1123.68	12.29
8/26/2024 20:00	15.03	178.12	0.08	7.86	357.51	0.01	921.31	12.29
8/26/2024 19:50	15.04	179	0.08	7.88	351.5	0	333.35	12.29
8/26/2024 19:40	15.06	180.42	0.09	7.88	351.97	0.01	314.29	12.33
8/26/2024 19:30	15.07	180.46	0.09	7.88	349.43	0.01	220.17	12.36
8/26/2024 19:20	15.08	179.07	0.08	7.86	343.33	0.01	231.26	12.36
8/26/2024 19:10	15.1	178.06	0.08	7.88	342.29	0.02	210.56	12.38
8/26/2024 19:00	15.11	177.36	0.08	7.86	341.47	0.02	278.57	12.38
8/26/2024 18:50	15.12	176.65	0.08	7.86	338.43	0.01	169.16	12.41
8/26/2024 18:40	15.12	175.73	0.08	7.86	343.03	0.01	183.92	12.43
8/26/2024 18:30	15.11	174.72	0.08	7.87	351.11	0.02	148.8	12.43
8/26/2024 18:20	15.11	175.93	0.08	7.87	348.66	0.02	157.84	12.43
8/26/2024 18:10	15.11	177.9	0.08	7.87	346.78	0.03	147.85	12.43
8/26/2024 18:00	15.11	179.06	0.08	7.86	342.88	0.03	167.74	12.45
8/26/2024 17:50	15.1	180.48	0.09	7.86	341.72	0.02	133.64	12.43
8/26/2024 17:40	15.1	179.19	0.08	7.87	341.91	0.02	133.97	12.31
8/26/2024 17:30	15.09	178.53	0.08	7.87	342.34	0.01	123.8	12.36
8/26/2024 17:20	15.09	179.08	0.08	7.87	344.09	0.01	149.39	12.41
8/26/2024 17:10	15.08	180.69	0.09	7.87	345.58	0.01	120.76	12.43
8/26/2024 17:00	15.08	181.5	0.09	7.86	343.85	0	107.64	12.6
8/26/2024 16:50	15.1	192.15	0.09	7.84	386.6	0	98.16	12.65
8/26/2024 16:40	15.1	194.11	0.09	7.84	384.58	0	99.86	12.62
8/26/2024 16:30	15.12	196.84	0.09	7.84	377.77	0	98.53	12.84
8/26/2024 16:20	15.12	196.95	0.09	7.84	374.44	0.01	94.98	12.86
8/26/2024 16:10	15.14	195.9	0.09	7.84	370.93	0.01	94.68	12.96
8/26/2024 16:00	15.14	193.02	0.09	7.85	369.99	0.02	94.35	12.91
8/26/2024 15:50	15.14	190.43	0.09	7.85	364.05	0.03	95.16	12.76
8/26/2024 15:40	15.13	190.07	0.09	7.86	351.89	0.03	93.77	12.76
8/26/2024 15:30	15.14	188.95	0.09	7.89	343.92	0.04	91.45	12.72
8/26/2024 15:20	15.15	189.36	0.09	7.87	332.82	0.04	89.33	12.93
8/26/2024 15:10	15.17	188.93	0.09	7.88	339.5	0.04	91	13.1
8/26/2024 15:00	15.19	187.29	0.09	7.9	337.82	0.04	89.55	13.22
8/26/2024 14:50	15.23	187.93	0.09	7.91	342.68	0.03	89.76	13.29
8/26/2024 14:40	15.24	190.67	0.09	7.9	342.03	0.03	105.33	13.67
8/26/2024 14:30	15.25	193.7	0.09	7.91	347.24	0.03	87.84	13.6
8/26/2024 14:20	15.26	196.77	0.09	7.9	348.73	0.03	85.94	13.56
8/26/2024 14:10	15.26	199.09	0.09	7.89	348.7	0.03	84.46	13.65
8/26/2024 14:00	15.21	201.34	0.1	7.87	346.85	0.03	83.78	13.65
8/26/2024 13:50	15.14	201.53	0.1	7.87	351.44	0.03	86.48	13.65
8/26/2024 13:40	15.14	200.03	0.1	7.87	351.09	0.03	83.67	13.34
8/26/2024 13:30	15.1	198.03	0.09	7.88	352.88	0.03	81.97	13.17
8/26/2024 13:20	15.07	196.29	0.09	7.87	352.43	0.03	90.09	13
8/26/2024 13:10	15.05	195.23	0.09	7.87	350.94	0.03	83.12	12.81
8/26/2024 13:00	15.04	195.53	0.09	7.87	351.99	0.03	81.55	12.79
8/26/2024 12:50	15.04	196.17	0.09	7.89	348.82	0.03	81.22	12.81

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8/26/2024 12:40	15.05	198.68	0.09	7.88	347.59	0.03	77.66	12.88
8/26/2024 12:30	15.07	198.87	0.09	7.89	344.59	0.03	80.48	13.03
8/26/2024 12:20	15.09	201.41	0.1	7.89	347.34	0.04	82.2	13.17
8/26/2024 12:10	15.13	206.52	0.1	7.89	345.71	0.03	81.14	13.24
8/26/2024 12:00	15.14	209.78	0.1	7.88	348.61	0.03	80.4	13.24
8/26/2024 11:50	15.13	210.35	0.1	7.89	347.85	0.04	79.07	13.24
8/26/2024 11:40	15.13	210.92	0.1	7.89	345.77	0.04	81.11	13.24
8/26/2024 11:30	15.15	212.01	0.1	7.89	345.98	0.04	79.35	13.41
8/26/2024 11:20	15.15	213.5	0.1	7.88	347.43	0.04	79.27	13.34
8/26/2024 11:10	15.11	214.71	0.1	7.88	348.83	0.03	77.06	13.24
8/26/2024 11:00	15.09	215	0.1	7.88	347.73	0.03	79.85	12.98
8/26/2024 10:50	15.05	215.65	0.1	7.88	350.46	0.03	80.61	12.81
8/26/2024 10:40	15.04	216.99	0.1	7.87	344.76	0.02	79.41	12.81
8/26/2024 10:30	15.03	216.79	0.1	7.87	353.63	0.02	95.79	12.79
8/26/2024 10:20	15	212.69	0.1	7.86	360.91	0.03	67.19	12.69
8/26/2024 10:10	14.98	205.53	0.1	7.86	360.94	0.04	73.99	12.55
8/26/2024 10:00	14.97	200.63	0.1	7.86	358.09	0.04	65.31	12.36
8/26/2024 9:50	14.98	202.08	0.1	7.87	358.29	0.04	60.71	12.19
8/26/2024 9:40	14.99	204.24	0.1	7.87	358.23	0.04	54.43	12.26
8/26/2024 9:30	14.99	204.55	0.1	7.87	363.72	0.05	50.93	12.33
8/26/2024 9:20	15	204.62	0.1	7.87	364.82	0.05	51.3	12.36
8/26/2024 9:10	15.01	204.92	0.1	7.88	356.07	0.05	50.17	12.41
8/26/2024 9:00	15.02	205.07	0.1	7.87	342.75	0.05	50.21	12.43
8/26/2024 8:50	15.02	204.8	0.1	7.88	343	0.04	50.93	12.38
8/26/2024 8:40	15.02	205.13	0.1	7.87	343.13	0.04	50.58	12.48
8/26/2024 8:30	15.02	205.41	0.1	7.87	348.71	0.04	51.93	12.45
8/26/2024 8:20	15.02	204.9	0.1	7.86	350.36	0.04	52.41	12.43
8/26/2024 8:10	15.01	204.17	0.1	7.86	359.05	0.03	54.2	12.36
8/26/2024 8:00	15	205.27	0.1	7.86	361	0.04	60.28	12.24
8/26/2024 7:50	14.99	205.08	0.1	7.87	352.65	0.04	47.97	12.21
8/26/2024 7:40	14.99	204.2	0.1	7.88	346.06	0.04	48.04	12.21
8/26/2024 7:30	14.97	203.97	0.1	7.88	346.01	0.04	48.9	12.12
8/26/2024 7:20	14.96	203.8	0.1	7.88	346.34	0.04	48.38	12.17
8/26/2024 7:10	14.95	203.8	0.1	7.88	347.1	0.04	48.78	12.07
8/26/2024 7:00	14.96	204.08	0.1	7.87	346.19	0.04	47.65	12.17
8/26/2024 6:50	14.96	203.89	0.1	7.88	345.57	0.03	48.49	12.19
8/26/2024 6:40	14.96	203.82	0.1	7.87	344.74	0.03	47.8	12.17
8/26/2024 6:30	14.97	203.8	0.1	7.88	345.96	0.03	48.34	12.17
8/26/2024 6:20	14.98	204.07	0.1	7.87	345.94	0.03	49.35	12.17
8/26/2024 6:10	14.98	203.91	0.1	7.87	348.07	0.03	49.39	12.17
8/26/2024 6:00	0	0	0	7.87	353.02	0.04	70.77	12.17
8/26/2024 5:50	14.99	204.37	0.1	7.87	344.24	0.03	46.11	12.17
8/26/2024 5:40	14.99	204.46	0.1	7.87	341.45	0.03	45.83	12.07
8/26/2024 5:30	14.99	204.66	0.1	7.87	343.57	0.02	45.45	12.14
8/26/2024 5:20	14.99	204.52	0.1	7.87	347.13	0.02	45.04	12.19
8/26/2024 5:10	15	204.21	0.1	7.87	354.78	0.02	45.3	12.19
8/26/2024 5:00	15	204.12	0.1	7.87	373.9	0.03	44.78	12.17

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8/26/2024 4:50	15	204.39	0.1	7.87	374.34	0.03	44.26	12.17
8/26/2024 4:40	15	204.18	0.1	7.86	369.18	0.03	45.05	12.09
8/26/2024 4:30	15	204.07	0.1	7.87	365.25	0.03	44.75	12.07
8/26/2024 4:20	15	203.76	0.1	7.87	352.21	0.03	45.33	12.19
8/26/2024 4:10	15	203.46	0.1	7.88	360.38	0.03	45.07	12.19
8/26/2024 4:00	15	203.72	0.1	7.87	372.72	0.03	44.84	12.21
8/26/2024 3:50	15.01	203.8	0.1	7.87	368.14	0.03	44.93	12.21
8/26/2024 3:40	0	0	0	7.88	360.75	0.03	44.99	12.21
8/26/2024 3:30	15.02	203.73	0.1	7.87	368.05	0.03	44.83	12.21
8/26/2024 3:20	15.03	203.91	0.1	7.87	360.81	0.03	45.3	12.21
8/26/2024 3:10	15.03	204.07	0.1	7.87	372.61	0.03	45.68	12.24
8/26/2024 3:00	15.03	203.99	0.1	7.86	368.39	0.03	45.15	12.21
8/26/2024 2:50	15.03	203.81	0.1	7.87	374.72	0.03	44.98	12.24
8/26/2024 2:40	15.04	203.79	0.1	7.86	367.65	0.03	45.43	12.14
8/26/2024 2:30	15.04	203.95	0.1	7.87	366.23	0.03	45.42	12.24
8/26/2024 2:20	15.04	203.86	0.1	7.87	352.5	0.03	46.22	12.21
8/26/2024 2:10	15.05	203.72	0.1	7.87	364.08	0.03	45.38	12.19
8/26/2024 2:00	15.05	203.9	0.1	7.87	360.46	0.03	45.9	12.17
8/26/2024 1:50	15.06	203.89	0.1	7.87	357.67	0.03	45.5	12.14
8/26/2024 1:40	15.07	203.93	0.1	7.87	346.51	0.02	46.46	12.17
8/26/2024 1:30	15.07	204.13	0.1	7.86	359.52	0.03	45.6	12.26
8/26/2024 1:20	15.07	204.07	0.1	7.86	368.44	0.03	45.39	12.26
8/26/2024 1:10	15.07	204	0.1	7.87	365.57	0.03	45.07	12.26
8/26/2024 1:00	15.07	203.9	0.1	7.86	363.62	0.03	45.63	12.26
8/26/2024 0:50	15.07	203.76	0.1	7.87	359.94	0.04	45.38	12.19
8/26/2024 0:40	15.08	203.69	0.1	7.87	350.58	0.03	46.53	12.26
8/26/2024 0:30	15.08	203.84	0.1	7.87	360.25	0.04	45.9	12.24
8/26/2024 0:20	15.08	203.94	0.1	7.87	354.51	0.04	46.19	12.21
8/26/2024 0:10	15.09	203.72	0.1	7.87	348.5	0.04	46.16	12.26
8/26/2024 0:00	15.09	203.45	0.1	7.87	329.97	0.03	47.27	12.29