TECHNICAL MEMORANDUM



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From:	Holly Pelletier and Patrick Mueller (Lorax)	Project #: A633-7
Subject:	PE-111578 Weekly Discharge and Compliance Report #	17 for June 2 – 8

Waste Discharge Authorization Effluent Permit PE-111578 was issued by the British Columbia Energy Regulator (BCER) to Woodfibre LNG on February 9, 2024. The permit specifies monitoring and reporting requirements that are required to be met by Woodfibre LNG during construction of the LNG Export Facility. Reporting is required on a weekly basis.

Discharge and compliance monitoring is conducted by on-site Environmental Monitors (Roe Environmental) that are sub-contracted to the civil works contractor (LB LNG). Analytical samples are submitted by Roe Environmental to ALS Environmental in Burnaby, BC, for testing. Lorax Environmental provides water quality database management and WDA compliance reporting services for Woodfibre LNG.

This technical memorandum (Report #17) was prepared by Lorax Environmental and summarizes monitoring conducted the week of June 2 - 8 for contact waters directed to a WWTP or a sedimentation pond and presents monitoring data that were available at the time of reporting including results that were pending from prior reporting periods. Figures referenced in the report discussion are included at the end of this report. Report #17 has been prepared to meet the reporting requirements specified in Condition 4.2 of WDA Effluent Permit PE-111578:

"The Permittee shall summarize the results of the discharge and compliance monitoring program in a report that shall be submitted to the BCER weekly over the term of this permit. Reports must include suitable tabulated data. The table must include any applicable regulatory limits/guidelines e.g. permit limits, BC Water Quality Guidelines etc. Any exceedances of respective regulatory limits/guidelines must be clearly highlighted. Any missed sampling events/missing data must 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 this subject permit, and also made publicly available on the Woodfibre LNG Environmental Reporting webpage."

The site layout is shown in Figure 1 at the end of this report. Sedimentation pond photographs are included in Appendix A, and monitoring results are tabulated in Appendix B through Appendix G for contact water and receiving environment samples.

1. Current Conditions

The Construction Phase of the Woodfibre LNG Export Facility commenced in October 2023. Early stage civil works are ongoing, and these include site grading, levelling, bedrock excavation and sedimentation pond and WWTP construction. Shoring works along the shoreline and foreshore areas were initiated in December 2023, and in early 2024 construction of water management infrastructure was initiated and has continued through the June 2 - 8 monitoring period. The East WWTP, and East and West sedimentation ponds have been completed, and the West WWTP is being assembled. The PE- 111578 water management facilities that are completed or were under construction during the reporting period are shown in Figure 1.

The East and West Catchment contact water conveyance ditches described in PE-111578 will be constructed following completion of site preparation activities (*e.g.*, site grading, bedrock excavation) along the ditch lines. Until the ditches are operational, non-contaminated contact waters are managed to remain on site or are directed to the East Sedimentation Pond. Contaminated contact waters are contained and directed to the East WWTP.

A revised schedule is being developed to complete the installation of the East Sedimentation Pond permanent outfall structure. Until those structures are constructed, a temporary discharge system (*i.e.*, pump, hosing and diffusor) is used to convey East Sedimentation Pond effluent to the authorized discharge location when necessary for the discharge of excess water, and if the effluent water quality meets the requirements set out in PE-111578.

The West Sedimentation Pond is complete, except for the outfall structure, and has not been commissioned for discharge. The schedule for completion of the pond outfall structure is being revised. The West WWTP has been assembled. Commissioning of the WWTP will be completed in June.

The completed non-contact water diversion ditch west of Mill Creek was commissioned for use on April 7. The diversion ditch discharges to Mill Creek at OUT-06 (Figure 1). Monitoring stations OUT-01, OUT-02, and OUT-11 at pre-existing culvert outlets have been established. Non-contact water diversion ditches leading to these outlets will be upgraded and extended, later in the construction schedule.

The weather was variable during the monitoring period (June 2 - 8) with heavy precipitation (99.5 mm) recorded June 2 - 4 at the on-site weather station. No precipitation was received for the balance of the week. The daily weather conditions are summarized in Table 1.

Date	Precipitation (mm)	Max. Temp (°C)	Min. Temp (°C)	Weather Description
2024/06/02	44.6	12.7	10.6	Overcast and rain
2024/06/03	36.4	12.7	9.3	Overcast and rain
2024/06/04	18.5	15.8	8.5	Overcast and rain
2024/06/05	0.0	17.7	7.8	Sun and cloud
2024/06/06	0.0	20.4	8.3	Sun and cloud
2024/06/07	0.0	22.2	10.2	Sunny
2024/06/08	0.0	26.2	12.6	Sunny

Table 1: Summary of Certified Project Area (CPA) Daily Weather Conditions.

Pilot testing of the East WWTP continued during the monitoring period (June 2 – 8). Contaminated and potentially contaminated contact waters from excavations within the East Catchment (Excavation Areas 1100, 1200, 1300) and the West Catchment (Excavation Areas 4100 and 4200, and the Hydrovac dump) were directed to the East WWTP for treatment, as well as water recirculated from the East Sedimentation Pond. The contact water source areas are shown in Figure 2 and Figure 3 in Appendix A. A total of 4,180 m³ of treated WWTP effluent was discharged to the East Sedimentation Pond during the reporting period (June 2 – 8). Daily WWTP effluent flows are provided in Appendix C (Table C-4).

During the monitoring period (June 2 – 8), the East Sedimentation Pond received treated WWTP effluent each day. Due to heavy rains on June 2 and 3, some non-contaminated contact waters from excavation areas within the East Catchment (Excavation Areas 1100, 1200, 1300) and the West Catchment (Excavation Areas 4100 and 4200) were directed to the West Sedimentation Pond on June 2 and the East Sedimentation Pond on June 3. There were no discharges from the East and West Sedimentation Ponds during the monitoring period (June 2 – 8), except on June 3 and 8 when a total of 1,270 m³ of effluent were discharged from the East Sedimentation Pond to Howe Sound. Daily effluent flows are provided in Appendix B (Table B-3). Photographs of the ponds are included in Appendix A (Figure 4 and Figure 5).

2. Monitoring Summary

The PE-111578 authorized works were under construction during the June 2-8 monitoring period. Compliance monitoring stations are progressively established by as water management infrastructure is completed. Monitoring is conducted by the on-site Environmental Monitors (Roe Environmental). Analytical samples are submitted by Roe Environmental to ALS Environmental in Burnaby, BC, for testing.

The following monitoring stations have been established (Figure 1):

- Creek water (SW-01, SW-02, SW-03, SW-04, SW-07).
- Howe Sound reference and IDZ locations (WQR1, WQR2, IDZ-E1 and IDZ-E2).

- Non-contact diversion ditch outlets (OUT-01, OUT-02, OUT-06, and OUT-11).
- Contact water monitoring locations (WWTP-E-IN, WWTP-E-OUT, SP-E-IN-2, SP-E-OUT, SP-E-NE, and SP-E-NW).

East Sedimentation Pond influent and effluent stations SP-E-NW and SP-E-NE, respectively, are in-pond stations that may be monitored in place of stations SP-E-IN-2 and SP-E-OUT when there is no influent to, or discharge from the East Sedimentation Pond.

Stations IDZ-E1, IDZ-E2, WQR1, WWTP-E-IN, WWTP-E-OUT, SP-E-NE, and SP-E-OUT were monitored during the monitoring period (June 2 - 8). Sampling dates and parameters tested are summarized in Table 1.

Overall, the PE-111578 monitoring requirements that were applicable during the monitoring period (June 2 - 8) were met. However, field parameters and an analytical sample were not collected at station SP-E-IN-2. The East Sedimentation Pond did not receive non-contaminated contact water inflows, except on June 3 during heavy rains and high surface runoff flows. The pond was not receiving influent at the time of monitoring on June 3, therefore daily field parameters and a weekly analytical sample were not collected at station SP-E-IN-2 during the monitoring period.

Sampling Date	Sample	Description	Parameters Tested	Monitoring Frequency
	SP-E-NE ¹	East Sedimentation Pond, in-pond sample, represents effluent quality	Field and Physical Parameters, Total,	
June 2, 2024	WWTP-E-OUT	East WWTP effluent	Dissolved and Speciated Metals, EPHs and PAHs.	D, P
	WWTP-E-IN	East WWTP influent	Field Parameters.	D
	SP-E-NE ¹	East Sedimentation Pond, in-pond sample, represents effluent quality	Field and Physical Parameters, Total,	
	WWTP-E-OUT	East WWTP effluent	Dissolved and Speciated Metals, EPHs and PAHs.	D, W1, P
	WWTP-E-IN	East WWTP influent	Field and Physical Parameters.	D, W_1
June 3, 2024	SP-E-OUT	East Sedimentation Pond effluent (compliance point)	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Dioxins and Furans, Oil and Grease, Glycols, and Methyl Mercury.	D, W ₁ , W ₂
	SP-E-NE ¹	East Sedimentation Pond, in-pond sample, represents effluent quality	Field and Physical Parameters, Total,	
	WWTP-E-OUT	East WWTP effluent	Dissolved and Speciated Metals, EPHs and PAHs.	D, P
	WWTP-E-IN	East WWTP influent	Field Parameters.	D
	IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface.		
June 4, 2024	IDZ-E1-2m	Howe Sound IDZ station E1; 2 m below surface.		
	IDZ-E1-SF	Howe Sound IDZ station E1; 2 m above the seafloor.	Field, Physical & General	
	IDZ-E2-0.5	Howe Sound IDZ station E2; 0.5 m below surface.	Parameters, VII & DIEA, EPHS & PAHs Total Dissolved and	
	IDZ-E2-2m	Howe Sound IDZ station E2; 2 m below surface.	Speciated Metals VOCs Dioxins	Р
	IDZ-E2-SF	Howe Sound IDZ station E2; 2 m above the seafloor.	and Furans. Oil and Grease. Glycols.	
	WQR1-0.5	Reference site 1; 0.5 m below surface.	and Methyl Mercury.	
	WQR1-2m	Reference site 1; 2 m below surface.		
	WQR1-SF	Reference site 1; 2 m above the seafloor.		
	SP-E-NE ¹	East Sedimentation Pond, in-pond sample, represents effluent quality		
June 5, 2024	WWTP-E-OUT	East WWTP effluent	Field Parameters.	D
	WWTP-E-IN	East WWTP influent		
L (2024	SP-E-NE ¹	East Sedimentation Pond, in-pond sample, represents effluent quality	Field and Physical Parameters, Total,	
June 6, 2024	WWIP-E-UUI	East WWITP influent	Dissolved and Speciated Metals,	D, P
	WWIP-E-IN	East W W IP initiation	EPHS and PAHS.	
June 7, 2024	WWTP-E-OUT	East Sedmentation Point, in-point sample, represents erriterit quanty	Dissolved and Speciated Metals,	D, P
	WWTP-F-IN	East WWTP influent	Field Parameters	D
June 8, 2024	SP-E-OUT	East Sedimentation Pond effluent (compliance point)	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Dioxins and Furans, and Methyl Mercury.	D, W ₁ , W ₂
	WWTP-E-OUT	East WWTP effluent	Field and Physical Parameters, Total.	
	WWTP-E-IN	East WWTP influent	Dissolved and Speciated Metals, EPHs and PAHs.	D, P

Table 2: Summary of PE-111578 monitoring samples collected June 2 – 8.

Notes:

Monitoring frequency requirements under PE-111578 are indicated as follows:

Monitoring frequency requirements under PE-111578 are indicated as follows: D – daily monitoring of field parameters at WWTP and sedimentation pond influent and effluent stations. M – Monthly monitoring for all parameters at WWTP, sedimentation pond and receiving environment stations. W₁ – initial high frequency monitoring for physical parameters at WWTP and sedimentation pond influent and effluent stations (weekly for the first 6 months of monitoring). W₂ - initial high frequency monitoring for all parameters at WWTP and sedimentation pond influent and effluent stations (weekly for the first 5 weeks of monitoring). W₂ - spring and fall high frequency sampling for all parameters receiving environment stations (5 samples collected over a 30 day period). P - periodic monitoring for targeted parameters that is supplementary to PE-111578 requirements. ¹ In-Pond stations SP-E-NE may be monitored in place of stations SP-E-IN-2 and SP-E-OUT, respectively when there is no influent to, or discharge from the East Sedimentation Pond at the time of monitoring.

3. Water Quality Results

3.1 Screening and Reporting Overview

Water quality and flow monitoring results are screened against field quality control (QC) criteria, benchmark values and PE-111578 discharge limits. The screening results are discussed and items outside the screening criteria are also summarized in the Section 4 tracking table (Table 7).

All water quality results are stored in the Woodfibre LNG environmental monitoring database. However, for brevity, a sub-set of the results are presented in the weekly report appendices. Results are reported for parameters with a freshwater, estuarine or marine water quality guideline for the protection of aquatic life, parameters with a discharge limit, parameters of potential concern (*i.e.*, dioxins and furans), as well as other parameters that useful for water quality characterization.

Federal and Provincial Water Quality Guidelines (WQG) are not specified for dioxins and furans. The general term "dioxins and furans" refers to a grouping of hundreds of individual compounds with similar chemical composition and properties. To simplify result presentation and interpretation, the results of individual compounds are converted to a total toxic equivalent (TEQ) value and are summed to produce single TEQ values for each sample by the laboratory. Consistent with the pre-construction monitoring program, a lower-bound TEQ value is reported. The lower-bound TEQ is calculated assuming a concentration of zero for results reported as not detected, therefore, if individual compounds are not detected the TEQ will equal zero.

3.2 Summary of Reported Results

Field measurements and analytical results for the monitoring period (June 2-8) that were available at the time of reporting are listed below in Table 3.

Methylmercury analytical results for samples collected May 8 and 10 and described in Weekly Report #13 were available at the time of reporting (Table 3). Methylmercury results for the samples collected May 9 are pending due to a delay in requesting this test.

Field measurements collected at station SP-E-OUT on May 24 and not previously reported are included in this report.

Analytical results for samples collected May 26 - 28 and described in Report #16 were available at the time of reporting for parameters listed in Table 3. Results for methyl mercury, dioxins and furans are pending for the following samples and will be included in future weekly reports when available:

• SW-02, SW-03, SW-04, and SW-07 collected May 26 (methyl mercury, dioxins and furans)

- SW-01 collected May 27 (methyl mercury, dioxins and furans)
- OUT-02 collected May 27 (methyl mercury, dioxins and furans)
- IDZ-E1, IDZ-E2, and WQR1 collected May 28 (methyl mercury, dioxins and furans)

Sample	Description	Sampling Date	Parameters Reported
IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface		
IDZ-E1-2m	Howe Sound IDZ station E1; 2 m below surface		
IDZ-E1-SF	Howe Sound IDZ station E1; 2 m above the seafloor	-	
IDZ-E2-0.5	Howe Sound IDZ station E2: 0.5 m below surface		
IDZ-E2-2m	Howe Sound IDZ station E2: 2 m below surface	-	
IDZ-E2-SF	Howe Sound IDZ station E2: 2 m above the seafloor	-	
WOR1-0.5	Reference site 1:0.5 m below surface	May 8 2024	Methylmercury
WOR1 2m	Reference site 1: 2 m below surface	Widy 0, 2024	Wienrymereury
WQR1-2III WOD1 SE	Deference site 1, 2 m shows the seefloor	-	
WQR1-SF	Deference site 1, 2 in above the seanoor.	-	
WQR2-0.5	Reference site 2; 0.5 m below surface.	-	
WQR2-2m	Reference site 2; 2 m below surface.	-	
WQR2-SF	Reference site 2; 2 m above the seafloor.	-	
SP-E-OUT	East Sedimentation Pond effluent (compliance point)		
OUT-02	Non-Contact Water Diversion Ditch Outlet		
SW-01	Lower Reach of Woodfibre Creek (near the mouth)	_	
SW-04	Lower Reach of East Creek (near the outlet to the outfall culvert)	May 10, 2024	Methylmercury
WWTP-E-IN	East WWTP influent		
WWTP-E-OUT	East WWTP effluent		
SP-E-OUT	East Sedimentation Pond effluent (compliance point)	May 24, 2024	Field Parameters
SW-02	Upper Reach of Mill Creek (upstream of the third bridge)		
SW-03	Lower Reach of Mill Creek (near the mouth in the estuarine zone)	-	Field, Physical and General Parameters, Total
SW-04	Lower Reach of Fast Creek (near the outlet to the outfall culvert)	May 26, 2024	and Dissolved Metals, Hexavalent Chromium,
SW-04	Lower Reach of East Creek (near the outlet to the outlan curvert)	-	PAHs, and VOCs.
510-07	Opsiteant with Creek (at the diversion filler)		Field Dhysical and Constal Decemptors Total
OUT-02	Non-Contact Water Diversion Ditch Outlet		Field, Physical and General Parameters, Total
		M. 07 0004	and Dissolved Metals.
SW-01	Lower Reach of Woodfibre Creek (near the mouth)	May 27, 2024	and Dissolved Metals, Hexavalent Chromium, PAHs, and VOCs.
IDZ-E1-0.5	Howe Sound IDZ station E1: 0.5 m below surface		
IDZ-E1-2m	Howe Sound IDZ station E1; 0.5 m below surface	-	
IDZ-E1-2III IDZ E1 SE	Howe Sound IDZ station E1; 2 m above the seafloor	-	
$\frac{1DZ-E1-51}{1DZ-E2.0.5}$	Howe Sound IDZ station E1, 2 in above the seanoor	-	Field Dhaniard and Conserval Demonstrate Testal
IDZ-E2-0.3	Howe Sound IDZ station E2, 0.5 In below surface	M. 29 2024	Field, Physical and General Parameters, Total
IDZ-E2-2m	Howe Sound IDZ station E2; 2 m below surface	May 28, 2024	and Dissolved Metals, Hexavalent Chromium,
IDZ-E2-SF	Howe Sound IDZ station E2; 2 m above the seafloor	-	PAHs, and VOCs.
WQR1-0.5	Reference site 1; 0.5 m below surface.	_	
WQR1-2m	Reference site 1; 2 m below surface.	-	
WQR1-SF	Reference site 1; 2 m above the seafloor.		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	June 2 2024	Field and Physical Parameters, Total, Dissolved
WWTP-E-OUT	East WWTP effluent	Julie 2, 2021	Metals, Hexavalent Chromium, and PAHs.
SP-E-OUT	East Sedimentation Pond effluent (compliance point)	L 2 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, and VOCs.
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	June 3, 2024	Field and Physical Parameters, Total, Dissolved
	East WWTP influent	-	Field and Dhaviant Drawnstern
WWIP-E-IN	East wwiPinfluent		Field and Physical Parameters.
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	-	Field and Physical Parameters, Total, Dissolved
WWTP-E-OUT	East WWTP effluent	-	Metals, Hexavalent Chromium, and PAHs.
IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	_	
IDZ-E1-2m	Howe Sound IDZ station E1; 2 m below surface	-	
IDZ-E1-SF	Howe Sound IDZ station E1; 2 m above the seafloor	-	
IDZ-E2-0.5	Howe Sound IDZ station E2; 0.5 m below surface	June 4, 2024	Field, Physical and General Parameters, Total
IDZ-E2-2m	Howe Sound IDZ station E2; 2 m below surface		and Dissolved Metals, Hexavalent Chromium,
IDZ-E2-SF	Howe Sound IDZ station E2; 2 m above the seafloor		PAHs, and VOCs.
WQR1-0.5	Reference site 1; 0.5 m below surface.		
WOR1-2m	Reference site 1: 2 m below surface.	-	
WOR1-SF	Reference site 1: 2 m above the seafloor.	-	
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality		
WWTP-E-OUT	East WWTP effluent	June 6 2024	Field and Physical Parameters, Total, Dissolved
WWTP-F-IN	Fast WWTP influent		Metals, Hexavalent Chromium, and PAHs.
SP-F-NF	Fast Sedimentation Pond in-pond sample represents effluent quality		Field and Physical Parameters Total Dissolved
	East WWTD affluant	June 7, 2024	Metals Heyavalant Chromium and DAUs
W W IT-L-UUI			Field Dhysical and Conoral Daramators Total
SP-E-OUT	East Sedimentation Pond effluent (compliance point)	June 8, 2024	and Dissolved Metals, Hexavalent Chromium, PAHs, and VOCs.
WWTP-E-OUT	East WWTP effluent	-	Field and Physical Parameters, Total, Dissolved
WWTP-E-IN	East WWTP influent		Metals, Hexavalent Chromium, and PAHs.

 Table 3: Summary of Analytical Results Included in Weekly Discharge and Compliance Report #17.

3.3 East Sedimentation Pond

The East Sedimentation Pond influent and effluent results are screened against PE-111578 discharge limits. Parameters without a discharge limit are screened against BC, Canadian and Federal water quality guidelines (WQGs) for the protection of marine water aquatic life. Influent water is not discharged from site, therefore only effluent water quality is assessed for exceedances. The analytical results, daily field parameters, discharge limits and WQGs are summarized in Table B-1 and Table B-2 (analytical results) and Table B-3 (field measurements) of Appendix B.

During the monitoring period (June 2 - 8), the East Sedimentation Pond received East WWTP effluent each day. The sedimentation pond received contact water and stormwater June 3; however, field measurements at station SP-E-IN-2 were not collected as waters were not being transferred to the pond at the time that field measurements were collected.

Daily field measurements at in-pond effluent station (SP-E-NE) met PE-111578 discharge limits for pH and WQG for dissolved oxygen, except on June 6 when dissolved oxygen was 7.42 mg/L, below the lower limit for dissolved oxygen (8.0 mg/L). However, the pond did not discharge on June 6.

The in-pond effluent samples (station SP-E-NE) collected June 2, 3, 4, 6, and 7 proximal to the effluent intake (Figure 1) were tested for total and dissolved metals, hexavalent chromium, and PAHs and met PE-111578 discharge limits for the tested parameters except total suspended solids, total copper, total lead, total vanadium, and total zinc on June 4. The in-pond samples met WQGs for parameters without discharge limits except total cadmium from the sample collected June 4 (0.000129 mg/L) which was 1.1 times greater than the WQG (0.00012 mg/L), total mercury (0.0000352 mg/L) which was 2.2 times greater than the WQG (0.00016 mg/L) on June 4, and benzo(a)pyrene which was detected at a concentration of 0.0000538 mg/L on June 4, 5.4 times above the WQG value of 0.00001 mg/L. The pond did not discharge on June 4 and therefore the June 4 sample results are not considered discharge limit exceedances.

Based on favorable water quality results from June 1 and June 6 samples, and due to significant runoff flows from heavy rains, the East Sedimentation Pond effluent was intermittently discharged June 3 and June 8. Field measurements and analytical results for the East Sedimentation Pond effluent sample (station SP-E-OUT) collected on June 3 met PE-111578 discharge limits and were within WQGs.

Field measurements and analytical results for station SP-E-OUT collected on June 8 met PE-111578 discharge limits, except total copper, total lead, and total vanadium (Table 4). Analytical results were received on June 10, after discharge from the East Sedimentation Pond had ceased. The field measurements collected at SP-E-OUT on June 8 showed elevated turbidity (33.55 NTU) at the time of collecting the analytical sample and the analytical results indicate the total

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suspended solid concentration was also elevated in the sample (TSS = 9.6 mg/L). Discharge was temporarily suspended after sample collection to reduce the effluent turbidity prior to resuming discharge the evening of June 8. The June 10 total copper, lead and vanadium exceedances are attributed to particle-bound forms of these metals that are associated with TSS (Table 4).

The effluent sample (SP-E-OUT) collected on June 8 met WQGs for parameters without discharge limits, except for dissolved oxygen and benzo(a)pyrene (Table 5). Dissolved oxygen was 7.62 mg/L and did not meet the WQG (\geq 8 mg/L). Benzo(a)pyrene was detected at a concentration of 0.0000201 mg/L, 2.0 times greater than the WQG (0.00001 mg/L).

Methylmercury analytical results were available at the time of reporting for the May 8 sample discussed in Weekly Report #13 and for the June 3 sample for the East Sedimentation Pond discharge point (SP-E-OUT). The methylmercury concentration at SP-E-OUT was 0.000023 μ g/L on May 8 and 0.000037 μ g/L on June 3.

 Table 4:

 Summary of Discharge Limit Exceedances for Effluent Discharged from the East Sedimentation Pond Station SP-E-OUT.

Parameter	Units	Discharge Limit	N	N > Discharge Limit	Commentary				
Total Copper	mg/L	0.0043	1	1	Analytical results from the sample collected on June 8 from SP- E-OUT showed concentrations above the discharge limit for total copper (0.00532 mg/L), total lead (0.00362 mg/L), and total vanadium (0.0118 mg/L).				
					Discharge from the East Sedimentation Pond was conducted based on favorable water quality for an in-pond sample collected lune 6 (SP-F-NE). To confirm the effluent would				
Total Lead	mg/L	0.0035	1	1	collected June 6 (SP-E-NE). To confirm the effluent would continue to meet discharge limits during discharge, turbidity was measured every two hours. The field turbidity was 33.55 NTU at 10:45 and effluent sampling at SP-E-OUT was conducted. Discharge was stopped after effluent sampling was completed and resumed later that day at 18:58 after effluent				
Total Vanadium	mg/L	0.0081	1	1	turbidity levels were reduced. The exceedance is attributed to particle-bound forms of these metals that are associated with TSS. Discharge from the East Sedimentation Pond has not occurred since the June 8 discharge ceased. A flocculant addition system that will improve TSS removal has been designed and once installed, will aid with the settling of TSS. This item remains open.				

PE-111578 discharge limits for the East Sedimentation Pond.

N = number of samples.

Non-detect results are screened using the detection limit value.

Table 5:
Summary of WQG Exceedances for the East Sedimentation Pond at Effluent Station SP-E-
OUT.

Parameter	Units	WQG (LT)	N	N >WQG	Commentary
Dissolved Oxygen	mg/L	>= 8.0	1	1	The field measurement of dissolved oxygen at the effluent station (SP-E-OUT) on June 8 (7.62 mg/L) was below the lower limit of the WQG. This concentration is in the range of baseline values observed in marine water samples and the mixing zone model indicates the concentration would be raised above the lower limit of the WQG within the initial dilution zone defined in PE-111578.
Benzo(a)pyrene	mg/L	0.00001	1	1	Analytical results collected on May 8 from SP-E-OUT showed parameters concentrations above the WQG for benzo(a)pyrene (0.0000201 mg/L). This concentration is in the range of baseline values observed in marine water samples and the mixing zone model indicates the concentration would be diluted to below the WQG within the initial dilution zone defined in PE-111578.

WQG = British Columbia or Canadian Water Quality Guideline for the Protection of Aquatic Life. LT = long-term freshwater or estuarine aquatic life guideline. Variable dependant guidelines were calculated for each sample using sample specific parameter values. The nearest boundary value was used if a variable was outside the formula range.

N = number of samples.

Non-detect results are screened using the detection limit value.

3.4 East Wastewater Treatment Plant

The East WWTP influent and effluent results are screened against the minimum discharge objectives (MDOs) which the WWTP was designed to meet. Contaminated contact water is directed to the WWTP influent, and it is expected that influent water is unlikely to meet MDOs, therefore only effluent water quality is assessed for exceedances. The analytical results, daily field measurements, and MDOs are summarized in Table C-1 (analytical results) and Table C-2 (field measurements) of Appendix C. Screening results are summarized in Table 6 for parameter concentrations that are above a MDOs.

The East WWTP discharged treated effluent to the East Sedimentation Pond each day of the monitoring period (June 2 - 8). Field measurements were collected each day at the influent and effluent stations, WWTP-E-IN and WWTP-E-OUT, respectively. Analytical samples were collected from the effluent station on June 2, 3, 4, 6, 7, and 8 and were measured for general parameters, total and dissolved metals, hexavalent chromium, and PAHs.

Field measurements of pH at East WWTP influent (station WWTP-E-IN) collected during the monitoring period (June 2 - 8) ranged from pH 7.1 to 9.0 and were generally within the MDO (pH 7.0 - 8.7); however, dissolved oxygen was generally below the minimum MDO value (8 mg/L), and ranged from 2.22 to 11.29 mg/L. Low dissolved oxygen levels are suspected to originate from anoxic groundwaters that accumulate in excavated areas and are directed to the East WWTP for treatment. The influent turbidity readings ranged from 4.48 to 172 NTU.

Field pH, turbidity and dissolved oxygen in East WWTP effluent samples (station WWTP-E-OUT) ranged from pH 5.2 to 9.3, 0.43 to 41 NTU and 4.52 to 10.28 mg/L, respectively (Appendix C, Table C-4). The effluent field measurements met the MDOs, except pH on June 2 - 7 (pH 5.2 to 9.3) and dissolved oxygen on June 3, 6, and 7 (7.96, 7.28, and 4.52 mg/L, respectively). Pilot testing of the East WWTP is underway and the deviations in pH are attributed to WWTP process adjustments that were underway during the monitoring period. Deviations from MDOs are expected to occasionally occur during the East WWTP pilot trial. Elevated turbidity (11.2 to 41.0 NTU) was observed June 3 to 5. The turbidity levels returned to below 2 NTU from June 6 to June 8 following maintenance of the WWTP filtration system and replacement of filtration media.

Analytical samples of East WWTP effluent (station WWTP-E-OUT) were collected June 2, 3, 4, 6, 7, and 8 and the results met MDOs, except for total copper, total lead, total vanadium, total zinc, and total hexavalent chromium. The total copper concentrations were 2.4, 1.4, and 2.3 times greater than the MDO (0.002 mg/L) in the samples from WWTP-E-OUT collected on June 3 (0.00485 mg/L), June 4 (0.00275 mg/L), and June 7 (0.00460 mg/L), respectively, due to both soluble and particle-bound forms of the metal. The total lead concentration was 1.9 times greater than the MDO (0.002 mg/L) in the sample from WWTP-E-OUT collected on June 3 (0.00373 mg/L) and is attributed entirely to particle-bound lead. The total vanadium concentrations were 1.2 to 1.7 times greater than the MDO (0.005 mg/L) in the samples from WWTP-E-OUT collected June 2 – 7 and is attributed primarily to the dissolved forms of the metal. The total zinc concentrations were 3.3, 1.2, and 1.5 times greater than the MDO (0.0117 mg/L), and June 7 (0.0152 mg/L), respectively. Total zinc concentrations are from both soluble and particle-bound forms of the metal present in the samples.

The total hexavalent chromium concentration was 1.04 times greater than the MDO (0.0015 mg/L) in the sample from WWTP-E-OUT collected on June 4 (0.00156 mg/L) and is attributed entirely to the dissolved forms of the metal. Concrete contact water, the expected source of hexavalent chromium, was not being generated June 2 – 8 and this component of the East WWTP is not currently activated. Process adjustments are under development to improve the removal of hexavalent chromium from non-concrete contact water.

Methylmercury analytical results were available at the time of reporting for the May 10 sample discussed in Weekly Report #13 for the East WWTP influent and effluent stations. The methylmercury concentration in the East WWTP influent sample (WWTP-E-IN) was 0.000082 μ g/L and <0.000020 μ g/L in the effluent sample (WWTP-E-OUT).

Table 6:
Summary of MDO Exceedances for the East WWTP at Effluent Station WWTP-E-OUT.

Parameter	Units	MDO	N	N >MDO	Commentary
Field pH	s.u.	7.0- 8.7	7	б	Field pH was 0.60 s.u. above the upper MDO for pH in the field measurements collected from WWTP-E-OUT on June 3 (pH 9.3) and below the lower MDO on June 2, 4, 5, 6, and 7. Field records indicate the East WWTP resumed producing effluent that met the MDO for pH on June 8. Process adjustments are underway and occasional deviations from MDOs may occur during the pilot period. This item remains open.
Field Dissolved Oxygen (DO)	mg/L	>=8	7	3	Field DO was below the lower limit MDO for DO in the field measurement collected from WWTP-E-OUT on June 3 (7.96 mg/L), June 6 (7.28 mg/L), and June 7 (4.52 mg/L). Low DO values are suspected to originate from anoxic groundwater that accumulates in excavation areas. This item remains open.
Total Copper	mg/L	0.002	6	3	The total copper concentrations were 2.4, 1.4, and 2.3 times greater than the MDO in the samples from WWTP-E-OUT collected on June 3 (0.00485 mg/L), June 4 (0.00275 mg/L), and June 7 (0.00460 mg/L), respectively. Additional process adjustments are under development to improve the removal of copper. This item remains open.
Total Lead	mg/L	0.002	6	1	The total lead concentration was 1.9 times greater than the MDO in the sample from WWTP-E-OUT collected on June 3 (0.00373 mg/L). Additional process adjustments are under development to improve the removal of lead. This item remains open.
Total Vanadium	mg/L	0.005	6	5	The total vanadium concentrations were 1.2 to 1.7 times greater than the MDO in the samples from WWTP-E-OUT collected June $2-7$. Additional process adjustments are under development to improve the removal of vanadium. This item remains open.
Total Zinc	mg/L	0.01	6	3	The total zinc concentrations were 3.3, 1.2, and 1.5 times greater than the MDO in the samples from WWTP-E-OUT collected on June 2 (0.0331 mg/L), June 6 (0.0117 mg/L), and June 7 (0.0152 mg/L), respectively. Additional process adjustments are under development to improve the removal of zinc. This item remains open.
Total Hexavalent Chromium	mg/L	0.0015	6	1	The total hexavalent chromium concentration was 1.0 times greater than the MDO in the sample from WWTP-E-OUT collected on June 4 (0.00156 mg/L). Concrete contact water, the expected source of hexavalent chromium, is not being generated at site and this component of the East WWTP is not currently activated. Process adjustments are under development to improve the removal of hexavalent chromium from non- concrete contact water. This item remains open.

MDO = Minimum discharge objective.

N = number of samples.

Non-detect results are screened using the detection limit value.

3.5 Non-Contact Water Diversion Ditch Outlets

Water quality results for non-contact water are screened against BC, Canadian and Federal WQGs for the protection of freshwater aquatic life. The analytical results, field parameters and WQGs are summarized in Appendix D.

Analytical results for the May 27 non-contact water diversion ditch outlet sample (OUT-02) described in Weekly Report #16 were available at the time of reporting and met WQGs except for total aluminum and dissolved copper. The concentrations of total aluminum and dissolved copper

were within the concentration ranges observed in the pre-construction baseline monitoring program for creek water and are therefore not considered to be exceedances.

Methylmercury analytical results were available at the time of reporting for the May 10 sample discussed in Weekly Report #13 for non-contact water diversion ditch outlet stations (OUT-02). The methylmercury concentration at OUT-02 was 0.000068 μ g/L. Methylmercury concentrations are within the range observed in the pre-construction baseline monitoring program for freshwater creeks within the CPA.

3.6 Freshwater and Estuarine Water Receiving Environment

Freshwater and estuarine water receiving environment samples are screened against BC, Canadian and Federal WQGs for the protection of freshwater or estuarine water aquatic life. The analytical results, field parameters and WQGs are summarized in Appendix E and Appendix F for freshwater and estuarine water, respectively.

Analytical results were available for the May 26 and 27 samples discussed in Weekly Report #16 for freshwater and estuarine water receiving environment samples collected at Woodfibre Creek (station SW-01), Mill Creek (stations SW-02, SW-03 and SW-07) and East Creek (station SW-04).

All stations are freshwater except the estuarine water collected near the mouth of Mill Creek (station SW-03). Parameter concentrations met WQGs at Mill Creek stations (stations SW- 02 and SW-07), except total aluminum and dissolved copper (SW-02 only), and at Woodfibre and East Creek stations, except field pH, total aluminum, and dissolved copper at Woodfibre Creek (station SW-01; Appendix E). Field pH values and the concentrations of total aluminum and dissolved copper were within the concentration ranges observed in the pre-construction baseline monitoring program and are therefore not considered to be exceedances.

Methylmercury analytical results were available at the time of reporting for the May 10 samples discussed in Weekly Report #13 for freshwater water receiving environment stations. Methylmercury concentrations were <0.000020 μ g/L in the freshwater sample from Woodfibre Creek (SW-01) and 0.000022 μ g/L in the freshwater sample from East Creek (SW-04). Methylmercury concentrations are within the ranges observed in the pre-construction baseline monitoring program.

3.7 Marine Water Receiving Environment

Marine water receiving environment samples are screened against BC, Canadian and Federal WQGs for the protection of marine water aquatic life. Parameter concentrations above a WQG value, but within the range of values observed in the baseline monitoring program are considered

to represent the natural condition of the water and are not flagged as exceedances. The analytical results, field parameters and WQGs are summarized in Appendix G (Table G-1 and G-2). Screening results are summarized in **Error! Reference source not found.** for parameter concentrations that are above WQGs and considered an exceedance.

Analytical results were available for the May 28 samples discussed in Weekly Report #16 for marine receiving environment stations IDZ-E1, IDZ-E2, and WQR1 at 0.5 and 2 m below the water surface and 2 m above the seafloor and met WQGs except for total boron in samples collected at 2 m above the seafloor as well as two samples collected at 2 m below surface. The concentrations of total boron in the samples ranged from 0.58 to 4.46 mg/L and were above the WQG (1.2 mg/L) in all samples collected from 2 m above the seafloor at IDZ-E1, IDZ-E2 and WQR1 and at 2 m below surface at IDZ-E2 and WQR1. The reported concentrations of total boron observed in the marine water samples are within the concentration ranges observed in the preconstruction baseline monitoring program and are therefore not considered to be exceedances.

Analytical results for June 4 marine water monitoring at IDZ-E1, IDZ-E2, and WQR1 at 0.5 and 2 m below the water surface and 2 m above the seafloor (Table 2) were available at the time of reporting and met WQGs except for total boron in two samples and total hexavalent chromium in one sample. The concentrations of total boron in the samples ranged from <0.3 to 4.33 mg/L and were above the WQG (1.2 mg/L) in samples collected from 2 m above the seafloor at IDZ-E1 and WQR1. Total copper was above the long-term WQG (0.002 mg/L) in one sample collected from 0.5 m below surface and IDZ-E1. Total copper concentrations ranged from <0.0005 to 0.00212 mg/L at IDZ-E1, IDZ-E2, and WQR1. Total hexavalent chromium was 1.01 times above the WQG (0.0015 mg/L) in one sample collected from 0.5 m below surface at reference station WQR1 (0.00152 mg/L).

The reported concentrations of total boron and total copper observed in the marine water samples are within the concentration ranges observed in the pre-construction baseline monitoring program and are therefore not considered to be exceedances. Total hexavalent chromium exceeded the WQG at reference station WQR1, located approximately 0.5 km northeast of the CPA and considered to be outside the zone of detectable project influence. Total hexavalent chromium was not measured in the pre-construction baseline monitoring program therefore comparison to baseline values is not possible.

Methylmercury analytical results were available at the time of reporting for the May 8 samples discussed in Weekly Report #13 for marine receiving environment stations IDZ-E1, IDZ-E2, WQR1, and WQR2 at 0.5 and 2 m below the water surface and 2 m above the seafloor. Methylmercury concentrations were <0.000020 μ g/L in all marine receiving environment samples, except at 0.5 m below surface at IDZ-E2 (0.000022 μ g/L). The methylmercury values observed in

the marine water samples are within the concentrations ranges observed in the pre-construction baseline monitoring program.

4. Quality Control

This section presents the results of the quality control (QC) evaluation for the PE-111578 weekly report (Table 7). The evaluation includes a review of field and lab QC, completeness of the weekly report (*i.e.*, pending data), completeness of the monitoring program, confirmation of recordkeeping, evaluation of compliance and review of water management activities. Any items flagged for follow-up in Table 7, and open items from the exceedance tables in section 3 will be carried forward in future reports until they are closed.

QC Procedure	Observation	Investigation/Resolution
Reporting Period	(June 2 – 8, Report #17)	
Monitoring Program Evaluation	PE-111578 contact water, non-contact water and initial dilution zone monitoring stations have not been fully established.	The PE-111578 authorized works were under construction during the reporting period. Monitoring stations are progres completed. The East Sedimentation Pond and East WWTP are completed, and pilot testing of the East WWTP is ongoin for discharge on April 15. The West Sedimentation Pond is complete, except the outfall structure and West WWTP is u commissioned for discharge and did not discharge. The non-contact water diversion ditch that discharges at station OU existing outfalls OUT-01, OUT-02, and OUT-11 have also been established.
Monitoring Program Evaluation	The monitoring records collected since commissioning of the East WWTP and East Sedimentation Pond are being reviewed regarding frequency and parameters tested.	This review is underway and will evaluate if any samples/parameters were omitted from the PE-111578 routine and hig conducted since April 2024.
Ongoing Items fro	m Previous Weekly Reports	
Report #13: WWTP Performance Evaluation	May 6 monitoring results for East WWTP indicate dissolved vanadium was not being removed by the treatment process.	The total vanadium concentration was predominately in the dissolved form and dissolved vanadium concentrations were IN; 0.00614 mg/L) and the effluent (0.00606 mg/L). Process adjustments are underway to improve vanadium removal open.
Report #13: Pending Data	Methyl mercury, dioxin and furans results for samples collected May $8 - 10$ have not been reported.	Available analytical results are discussed in Sections 3.2 through 3.6 of Report #14 and available dioxin and furan result #16. Available methyl mercury results are discussed in Section 3.2 through 3.6 of Report #17. Methyl mercury results an error in the submission to the laboratory and this error has been identified as a single occurrence. This item is closed
Report #14: Pending Data	Methyl mercury, dioxin and furan results for samples collected May 14 - 16 were not reported.	Available analytical results are discussed in Sections 3.2 through 3.6 of Report #15. Methyl mercury, dioxins and furar Testing of these parameters typically requires up to 4 weeks to complete. The pending results are expected in late June
Report #15: Pending Data	Methyl mercury, dioxin and furan results for samples collected May 22 – 24 were not reported.	Available analytical results are discussed in Sections 3.2 through 3.6 of Report #16. Methyl mercury, dioxins and furar Testing of these parameters typically requires up to 4 weeks to complete. The pending results are expected in early July
Report #16: Pending Data	Analytical results for samples collected May $26 - 28$ were not reported.	Available analytical results are discussed in Sections 3.2 through 3.6 of Report #17. Methyl mercury, dioxins and furar Testing of these parameters typically requires up to 4 weeks to complete. The pending results are expected in early July
Report #16: Recordkeeping Evaluation	Confirmation of the completeness of the daily recordkeeping specified in PE-111578 Conditions 2.1.3, 2.1.4, 2.2.3 and 2.2.4 is not included QC evaluation procedures.	Daily records are maintained by on-site Environmental Monitors and are used for the preparation of the weekly report. conditions are collected and maintained. Site has recently transitioned to electronic flow monitoring of the sedimentation effective although it is sensitive to power outages. Daily manual flow records are now kept in parallel as back-up records to be in place and active. This item is closed.

	Table 7:	Weekly Report QC Evaluations and Ongoing Items
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Notes:

Result QA/QC screening includes the evaluation of field and lab QC results, comparison of total and dissolved metal results and review for modified detection limits.

Pending data are outstanding results from monitoring samples reported in the current or previous weekly reports.

Monitoring program evaluation is an assessment of the completeness of the monitoring program compared to PE-111578 requirements.

ssively established as water management infrastructure is bing. The East Sedimentation Pond was commissioned under construction. The West Sedimentation Pond is not JT-06 has been commissioned, and stations for pre-

igh-frequency monitoring programs that have been

ere comparable in the East WWTP influent (WWTP-Eas part of the WWTP pilot trials. This item remains

Its are discussed in Section 3.2 through 3.6 of Report for samples collected May 9 were not completed due to d.

ns results were not complete at the time of reporting. e. This item remains open.

ns results were not complete at the time of reporting. ly. This item remains open.

ns results were not complete at the time of reporting. ly. This item remains open.

. Daily flow records pertaining to the cited permit ion pond effluent. Overall, the electronic system is rds. The parallel flow recordkeeping system is verified

5. Closure

This weekly report is a desktop review by Lorax of the PE-111578 discharge and compliance monitoring program records, reports and results provided by Woodfibre LNG and prime contractor McDermott International and their sub-contractors. The records reviewed and analyzed by Lorax include ALS Environmental laboratory test reports and site reports (from Roe Environmental, LB LNG, McDermott and Woodfibre LNG). Verbal or electronic communications between Lorax, and Roe Environmental, LB LNG, McDermott, Woodfibre LNG and Keystone Environmental staff are conducted as needed to confirm the information presented in this report.

Regards,

LORAX ENVIRONMENTAL SERVICES LTD.

Holly Pelletier, B.Sc., GIT Environmental Geoscientist



Patrick Mueller, B.Sc., P.Chem. Environmental Chemist





Appendix A: East and West Catchment Photographs



Figure 2: East Catchment Areas Dewatered to the East WWTP June 2 to June 8.



Figure 3: West Catchment Areas Dewatered to the East WWTP June 2 to June 8.



Figure 4: Aerial view of the East Sedimentation Pond showing the placement of two sediment curtains. Water at the inlet (west) section of the pond is cloudy due to elevated TSS in the influent. A progression to less turbid water is observed in the sediment curtain cells from the pond inlet (northwest corner) to the outlet (northeast corner) (June 7, 2024).



Figure 5: Aerial view showing the West Sedimentation Pond and West WWTP (located to the right of the pond) on June 7, 2024.

Appendix B: East Sedimentation Pond Results

Table B-1: Summary of East Sedimentation Pond Water Quality Results Received at the Time of Reporting.

					East Sedimentation Pond							
		Lowest A	pplicable	PE-111578	In-Pond at Effluent Location	In-Pond at Effluent Location	Effluent	In-Pond at Effluent Location	In-Pond at Effluent Location	In-Pond at Effluent Location	Effluent	
Parameter	Unit	Guide	eline ^{1,2}	Discharge	SP-E-NE	SP-E-NE	SP-E-OUT	SP-E-NE	SP-E-NE	SP-E-NE	SP-E-OUT	
				Limit *	VA24B2596-	VA24B2600-	VA24B2650-	VA24B2773-	VA24B3150-	VA24B3296-	VA24B3354-	
		Long Term	Short Term	_	001 2024-06-02 14:56	001 2024-06-03 10:36	001 2024-06-03 17:55	001 2024-06-04 13:05	001 2024-06-06 13:20	001 2024-06-07 12:30	001 2024-06-08 10:40	
General Parameters	1			1	1.000	10000			10120	12100	10000	
pH - Field	pH	_ 6	_	55-90	77	74	79	8.0	6.6	67	8.9	
	units			5.5 7.0	1.47.4	1100	1.5	0.0	501	506	570	
Conductivity - Field	μS/cm	-	-	-	14/4	1122	1543	853	501	19.2	5/8	
Salinity - Field	ppt	-	-	-	0.74	0.72	0.78	0.52	0.29	0.28	0.33	
Turbidity - Field	NTU	-	-	-	7.04	14.25	11.41	79.0	20.27	11.82	33.55	
TSS	mg/L	-	-	25	5.0	11.5	6.2	38.1	6.2	5.4	9.6	
Dissolved Oxygen - Field	mg/L	>=8	-	-	10.11	11.19	10.91	10.78	<u>7.42</u>	8.99	<u>7.62</u>	
Anions and Nutrients	ma/I						67.0				22.4	
Chloride	mg/L mg/L	-	-	-	-	-	365	-	-	-	107	
Fluoride	mg/L	-	1.5	-	-	-	<0.1	-	-	-	0.114	
Ammonia (N-NH3)	mg/L	Variable	Variable	_	_	_	<0.005	_	_	_	0.0344	
Nitrite (N.NO.)		3	5				<0.005				0.0522	
Nitrate $(N-NO_2)$	mg/L	- 37	339	-	-	-	<0.003	-	-	-	0.0325	
Total Metals	mg/ E	5.7	557				<0.025				0.110	
Aluminum, total (T-Al)	mg/L	-	-	-	0.246	0.647	0.464	4.91	0.841	0.564	1.62	
Antimony, total (T-Sb)	mg/L	-	0.27 4	-	0.00227	0.00221	0.00197	0.00206	0.0018	0.0018	0.0019	
Arsenic, total (T-As)	mg/L mg/I	0.0125	0.0125	-	0.00269	0.00265	0.00248	0.00442	0.00286	0.00264	0.00336	
Beryllium, total (T-Be)	mg/L mg/L	- 0.1	-	-	<0.00139	<0.00175	<0.0182	<0.0440	<0.0001	<0.0073	<0.0176	
Boron, total (T-B)	mg/L	1.2	-	-	0.055	0.052	0.06	0.069	0.043	0.047	0.061	
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	< 0.000025	< 0.00003	< 0.000025	0.000129	0.0000249	< 0.00003	0.0000531	
Chromium, total (T-Cr)	mg/L	-	-	-	0.00146	0.00113	0.00107	0.00437	0.00185	0.00152	0.00227	
Cobalt, total (T-Co)	mg/L	-	-	-	0.00012	0.00023	0.00018	0.00162	0.00029	0.00022	0.00052	
Iron total (T-Fe)	mg/L	_	_	-	0.00187	0.00231	0.00294	3.58	0.00518	0.00236	0.00332	
Lead, total (T-Pb)	mg/L	- 6	- 6	0.0035	0.00113	0.00178	0.00142	0.0107	0.00194	0.00114	0.00362	
Manganese, total (T-Mn)	mg/L	-	-	-	0.0286	0.0286	0.0209	0.0952	0.0164	0.0114	0.0304	
Mercury, total (T-Hg) ⁵	mg/L	0.000016	-	-	< 0.000005	0.0000072	0.0000051	<u>0.0000352</u>	0.0000074	0.0000052	0.0000135	
Molybdenum, total (T-Mo)	mg/L mg/I	-	-	-	0.0299	0.0283	0.0278	0.0272	0.0235	0.025	0.0255	
Selenium total (T-Se)	mg/L	0.0085	-	-	0.00074	0.00094	0.00088	0.00293	0.00073	0.00038	0.00113	
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.00001	<0.00001	<0.00001	0.000035	<0.00001	<0.00001	0.000012	
Thallium, total (T-Tl)	mg/L	-	-	-	0.000046	0.00004	0.000028	0.000038	0.000023	0.000019	0.000018	
Uranium, total (T-U)	mg/L	-	-	-	0.018	0.017	0.0166	0.0191	0.0155	0.014	0.0168	
Vanadium, total (T-V)	mg/L mg/I	- 0	- 6	0.0081	0.00519	0.00554	0.00551	0.0151	0.00738	0.00696	0.00895	
Hexavalent Chromium, total	mg/L mg/L	0.0015	-	-	0.00078	0.0001	0.0082	0.0289	0.0083	0.0073	0.0100	
Dissolved Metals			1									
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	< 0.000015	< 0.000015	< 0.000015	0.0000327	< 0.00002	< 0.00002	0.0000164	
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.0011	0.00113	0.00159	0.00374	0.00194	0.00164	0.00255	
Iron, dissolved (D-Fe)	mg/L mg/I	-	-	-	<0.01	<0.01	<0.01	0.373	<0.01	<0.01	0.059	
Manganese, dissolved (D-Mn)	mg/L mg/L	-	-	-	0.024	0.0175	0.0121	0.0202	0.0065	0.00509	0.00926	
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.231	0.229	0.239	0.16	0.0933	0.0856	0.108	
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00466	0.00448	0.00461	0.00739	0.00597	0.00588	0.00632	
Zinc, dissolved (D-Zn)	mg/L	- (Ta)	-	-	0.0019	0.0015	0.0035	0.0052	0.0034	0.0040	0.0021	
Acenaphthene	mø/L	0.006	_	_	<0.00001	<0.00001	<0.00001	0.000028	<0.00001	<0.00001	0.000013	
Acridine	mg/L	-	-	-	< 0.00001	< 0.00001	< 0.00001	<0.00001	< 0.00001	< 0.00001	< 0.000015	
Anthracene	mg/L	-	-	-	< 0.00001	< 0.00001	< 0.00001	< 0.000019	< 0.00001	< 0.00001	< 0.00001	
Benz(a)anthracene	mg/L	-	-	-	<0.00001	<0.00001	<0.00001	0.000047	<0.00001	<0.00001	0.000015	
Benzo(a)pyrene	mg/L mg/I	0.00001	-	-	<0.00005	<0.000005	<0.000005	0.0000538	0.0000074	<0.000005	<u>0.0000201</u>	
Fluoranthene	mg/L mg/L	-	-	-	<0.00001	0.000020	0.000015	0.000055	0.000023	0.000015	0.000022	
Fluorene	mg/L	0.012	-	-	<0.00001	<0.00001	<0.00001	0.000026	<0.00001	<0.000013	<0.00001	
1-methylnaphthalene	mg/L	0.001	-	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	
2-methylnaphthalene	mg/L	0.001	-	-	<0.00001	<0.00001	<0.00001	0.000011	< 0.00001	<0.00001	<0.00001	
Naphthalene Phenanthrene	mg/L mg/I	0.001	-	-	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
Pyrene	mg/L mg/L	-	-	-	<0.00002	0.00002	0.00002	0.000104	0.00002	0.000013	0.000029	
Quinoline	mg/L	-	-	-	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
Volatile Organic Compounds (VOCs)											
Benzene	mg/L	0.11	-	-	-	-	< 0.0005	-	-	-	< 0.0005	
Ethylbenzene Methyl tert butyl other	mg/L mg/I	0.25	-	-	-	-	<0.0005	-	-	-	<0.0005	
Styrene	mg/L mg/L	-	- 0.44	-	-	-	<0.0005	-	-	-	<0.0005	
Toluene	mg/L	0.215	-	-		-	<0.0004	-	-	-	<0.0004	
Total Xylenes	mg/L	-	-	-	-	-	< 0.0005	-	-	-	< 0.0005	
Chlorobenzene	mg/L	0.025	-	-	-	-	< 0.0005	-	-	-	< 0.0005	
1,2-Dichlorobenzene	mg/L	0.042	-	-	-	-	<0.0005	-	-	-	<0.0005	

Notes:

Results underlined in bold italics exceed the applicable long-term water quality guideline for the protection of marine water aquatic life.

Shaded results exceed the applicable short-term water quality guideline for the protection of marine water aquatic life.

Results in orange text exceeded the PE11578 East Sedimentation Pond Discharge Limit.

* The PE111578 East Sedimentation Pond Discharge Limit applies only to the point of discharge from the East Sedimentation Pond (SP-E-Out).

* The PETTI578 East Sedimentation Pond Discharge Limit applies only to the point of discharge from the East Sedimentation Pond (SP-E-Out). ¹ Approved British Columbia Water Quality Guidelines for the protection of marine aquatic life (BC ENV, 2021). Where an approved guideline is not established, the working guideline is applied. ² Canadian Water Quality Guideline for the protection of marine aquatic life (CCME, 2021). ³ The approved total ammonia nitrogen BC WQG is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document (BC ENV, 2021). ⁴ The working BC WQG for trivalent antimony [SB(III)] is 0.27 mg/L and is applied to total antimony results. ⁵ When MeHg $\leq 0.5\%$ of total Hg, BC WQG = 0.00002 mg/L.

⁶Where discharge limits apply, the water quality guideline was not evaluated.

The lowest applicable guidelines are shown in the table; however, water quality data was screened to all applicable guidelines.

Table B-2: Sun	imary of East S	Sedimentation	Pond Wa	ater Quality	y Results for
Methylmercury	y Received at th	he Time of Rep	oorting.		

		East Sedimentation Pond			
		Effluent	Effluent		
Parameter	Unit	SP-E-OUT	SP-E-OUT		
	VA24B0178-013		VA24B2650-001		
		2024-05-08 10:12	2024-06-03 17:55		
Methylmercury	μg/L	0.000023	0.000037		

Parameter		Temperature	DO	Salinity	Turbidity	рН	Conductivity	Visibility of Sheen	Total Daily Discharge from the East Sedimentation Pond to Howe Sound
Unit		°C	mg/L	ppt	NTU	s.u.	μS/cm		m ³
PE-111578 Disc	harge Limit ¹	-	-	-	-	5.5 - 9.0	-	-	_2
Lowest Applica	ble Guideline ^{3,4}	-	>=8	-	-	-5	-	-	-
Station ID	Date						·		·
SP-E-OUT	2024-05-24 16:11	15.8	12.68	1.4	1.56	8.8	2277	No	755
SP-E-NE	2024-06-02 14:58	16.2	10.11	0.74	7.04	7.7	1474	No	0
SP-E-NE	2024-06-03 10:44	13.8	11.19	0.72	14.25	7.4	1122	No	702
SP-E-OUT	2024-06-03 18:04	15.3	10.91	0.78	11.41	7.91	1543	No	192
SP-E-NE	2024-06-04 13:16	15.1	10.78	0.52	79	7.96	853	No	0
SP-E-NE	2024-06-05 12:03	16.7	9.33	0.35	57	6.8	590	No	0
SP-E-NE	2024-06-06 13:33	16.6	<u>7.42</u>	0.29	20.27	6.6	501	No	0
SP-E-NE	2024-06-07 12:40	18.3	8.99	0.28	11.82	6.7	506	No	0
SP-E-NE	2024-06-08 7:55	18	-	-	16.3	7.0	-	No	
SP-E-NE	2024-06-08 9:06	18	9.41	0.31	14.95	6.8	553	No	
SP-E-OUT	2024-06-08 10:51	17.5	<u>7.62</u>	0.33	33.55	8.86	578	-	478
SP-E-NE	2024-06-08 13:56	20.5	8.41	0.34	23.69	6.9	632	No	
SP-E-NE	2024-06-08 16:13	-	-	-	16.27	-	-	No	

Table B	-3:	Summary	of East	Sedimentation	ı Pond	Daily	Field	Parameters	Received	l at the	Time of	Rep	orting.
		•				•						-	

Notes:

Results underlined in bold italics exceed the applicable long-term water quality guideline for the protection of marine water aquatic life.

Results in orange text exceeded the PE11578 East Sedimentation Pond Discharge Limit.

¹ PE-111578 East Sedimentation Pond Discharge Limit applies only to the point of discharge from the East Sedimentation Pond (SP-E-OUT).

² The annual average authorized discharge rate from the East Sedimentation Pond is 650 m³/day. As noted in PE-111578 Condition 2.1.4, the actual discharge rate may deviate from the annual average rate due to annual variations in precipitation amounts within the catchment area. Therefore, the annual average authorized discharge rate is not evaluated as a discharge limit.

³ Approved British Columbia Water Quality Guidelines for the protection of marine aquatic life (BC ENV, 2021). Where an approved guideline is not established, the working guideline is applied. ⁴ Canadian Water Quality Guideline for the protection of marine aquatic life (CCME, 2021).

⁵ Discharge limit applies therefore the water quality guideline was not evaluated.

The sedimentation pond received contact water on June 3 but was not receiving influent at the time of monitoring each day June 2 – June 8, therefore measurements for station SP-E-IN-2 were not collected.

No discharge from the East Sedimentation Pond occurred June 2, 4 - 7.

Appendix C: East Wastewater Treatment Plant Results

			East WWTP				
Parameter	Unit	Minimum Discharge Objective ¹	Effluent WWTP-E-OUT VA24B2596-002	Influent WWTP-E-IN VA24B2600-003	Effluent WWTP-E-OUT VA24B2600-002	Effluent WWTP-E-OUT VA24B2773-002	Influent WWTP-E-IN VA24B3150-003
			2024-06-02	2024-06-03	2024-06-03	2024-06-04	2024-06-06
			14:24	10:50	10:22	12:35	14:10
General Parameters							
pH - Field	pH units	7.0 - 8.7	5.7	7.4	<u>9.3</u>	<u>6.5</u>	7.2
Conductivity - Field	µS/cm	-	1671	1150	275	418	676
Temperature - Field	°C	-	15.8	14.8	13.3	13.0	20.2
Salinity - Field	ppt	-	0.85	0.72	0.17	0.26	0.26
Turbiaity - Field	NIU ma/I	-	4.27	13.83	24.18	11.21	54.00
Dissolved Orugan Field	mg/L	-	3.8 9.24	0.30	5.1 7.06	< <u>></u> 9 22	5.92
Anions and Nutrients	Ing/L	>=0	0.24	10.35	7.90	0.33	<u>3.03</u>
Sulphate	mg/I	_	_		_		
Chloride	mg/L mg/L						
Fluoride	mg/L mg/L			-			
Ammonia (N-NH2)	mg/L	Variable	_				
Nitrite (N.NO.)	mg/L	Variable	-	-	-	-	-
Nitrate (N-NO ₂)	mg/L mg/L	- 27	-	-	-	-	-
Total Motals	Ing/L	5.7	-	-	-	-	-
Aluminum total (T-Al)	mg/I	_	0.308		1.4	0.282	2.76
Antimony total (T-Al)	mg/L	-	0.308	-	0.00220	0.282	0.00186
Antimony, total (1-Sb)	IIIg/L	-	0.00208	-	0.00229	0.00187	0.00180
Arsenic, total (1-As)	mg/L mg/L	0.0125	0.00302	-	0.00371	0.00306	0.00371
Bariulli, total (T-Ba)	mg/L mg/I	- 0.1	<0.0001	-	<0.0001	<0.00200	<0.0271
Boron total (T-B)	mg/L mg/I	1.2	0.065	-	0.053	0.057	0.053
Cadmium_total (T-Cd)	mg/L mg/I	0.00012	<0.0002		0.000526	0.0075	0.00584
Chromium total (T-Cr)	mg/L mg/I	-	0.00117		0.0000320	0.0000075	0.0000304
Cobalt_total (T-Co)	mg/L mg/L		0.00117		0.00204	0.00142	0.0095
Copper, total (T-Cu)	mg/L mg/I	0.002	0.00011		0.00038	0.00011	0.00075
Iron total (T-Fe)	mg/L mg/L	-	0.117	-	0.734	0.064	19
Lead. total (T-Pb)	mg/L	0.002	0.000467	-	0.00373	0.000293	0.00674
Manganese, total (T-Mn)	mg/L	-	0.0186	-	0.0226	0.00422	0.0572
Mercury, total (T-Hg)	mg/L	0.000016	<0.000005	_	0.0000115	<0.000005	0.0000231
Molybdenum, total (T-Mo)	mg/L	-	0.034	-	0.0274	0.0235	0.0246
Nickel, total (T-Ni)	mg/L	0.0083	0.00088	-	0.00103	0.00057	0.00174
Selenium, total (T-Se)	mg/L	0.002	0.000224	-	0.000292	0.000204	0.000264
Silver, total (T-Ag)	mg/L	0.0015	< 0.00001	-	0.000017	< 0.00001	0.000023
Thallium, total (T-Tl)	mg/L	-	0.000049	-	0.000015	0.000015	0.00003
Uranium, total (T-U)	mg/L	-	0.022	-	0.0197	0.0158	0.0162
Vanadium, total (T-V)	mg/L	0.005	<u>0.00838</u>	-	<u>0.00843</u>	<u>0.00793</u>	<u>0.0118</u>
Zinc, total (T-Zn)	mg/L	0.01	<u>0.0331</u>	-	0.0076	0.0034	<u>0.0774</u>
Hexavalent Chromium, total	mg/L	0.0015	0.00096	-	0.00139	<u>0.00156</u>	0.00085
Dissolved Metals							
Cadmium, dissolved (D-Cd)	mg/L	-	< 0.00002	-	< 0.000015	0.0000070	< 0.0000225
Copper, dissolved (D-Cu)	mg/L	-	0.0102	-	0.00194	0.00218	0.00336
Iron, dissolved (D-Fe)	mg/L	-	< 0.01	-	0.027	< 0.01	0.017
Lead, dissolved (D-Pb)	mg/L	-	0.000193	-	0.000161	< 0.00005	< 0.00005
Manganese, dissolved (D- Mn)	mg/L	-	0.0194	-	0.00285	0.00298	0.0164
Strontium, dissolved (D-Sr)	mg/L	-	0.229	-	0.0398	0.0594	0.101
Vanadium, dissolved (D-V)	mg/L	-	0.00712	-	0.00734	0.00759	0.00697
Zinc, dissolved (D-Zn)	mg/L		0.034	-	< 0.001	0.0022	0.0458
Polycyclic Aromatic Hydroca	rbons (PAF	Is)					
Acenaphthene	mg/L	0.006	<0.00001	-	<0.00001	<0.00001	0.000024
Acridine	mg/L	-	<0.00001	-	<0.00001	<0.00001	<0.00001
Anthracene	mg/L	-	<0.00001	-	<0.00001	<0.00001	0.000013
Benz(a)anthracene	mg/L	-	<0.00001	-	<0.00001	<0.00001	0.000024
Benzo(a)pyrene	mg/L	0.0001	<0.00005	-	0.000066	<0.00005	<u>0.000269</u>
Fluoranthene	mg/L	0.0001	<0.0001	-	<0.0001	<0.0001	<0.000055
Fluorene	mg/L	-	<0.0001	-	<0.000020	<0.0001	0.00093
1-methylnaphthalana	mg/L	0.012	<0.0001	-	<0.00001		0.000018
2-methylnanhthalene	mg/L mg/I	0.001	<0.00001	-	0.000014	0.000014	0.000014
Nanhthalene	mg/L mg/I	0.001	<0.00001		<0.00014	<0.00014	<0.000017
- upinimiene		0.001	.0.00005				

Table C-1: Summary of East Wastewater Treatment Plant Water Quality Results Received at the Time of Reporting.

Pyrene	mg/L	-	< 0.00001	-	0.000018	< 0.00001	0.000085
Quinoline	mg/L	-	< 0.00005	-	< 0.00005	< 0.00005	< 0.00005
Volatile Organic Compounds (VOCs)							
Benzene	mg/L	0.11	-	-	-	-	-
Ethylbenzene	mg/L	0.25	-	-	-	-	-
Methyl-tert-butyl-ether	mg/L	5	-	-	-	-	-
Styrene	mg/L	-	-	-	-	-	-
Toluene	mg/L	0.215	-	-	-	-	-
Total Xylenes	mg/L	-	-	-	-	-	-
Chlorobenzene	mg/L	0.025	-	-	-	-	-
1,2-Dichlorobenzene	mg/L	0.042	-	-	-	-	-

< 0.00002

< 0.00002

Phenanthrene

Notes: ¹ Minimum discharge objective for the WWTP effluent. Results <u>underlined in bold italics</u> exceed the applicable minimum discharge objective.

mg/L

0.000054

< 0.00002

			East WWTP					
		Minimum	Effluent	Effluent	Influent	Effluent		
Parameter	Unit	Discharge	WWTP-E-OUT	WWTP-E-OUT	WWTP-E-IN	WWTP-E-OUT		
		Objective ¹	VA24B3150-002	VA24B3296-002	VA24B3355-001	VA24B3355-002		
			2024-06-06 13:00	2024-06-07 12:00	2024-06-08 14:30	2024-06-08 14:04		
General Parameters				1				
pH - Field	pH units	7.0 - 8.7	<u>6.7</u>	5.2	<u>9.0</u>	8.5		
Specific Conductivity - Field	µS/cm	-	220	503	666	601		
Temperature - Field	°C	-	15.9	18.8	32.7	20.4		
Salinity - Field	ppt	-	0.25	0.28	0.27	0.32		
Turbidity - Field	NTU	-	0.43	0.75	27.88	1.76		
TSS	mg/L	-	<3	<3	3.4	<3		
Dissolved Oxygen - Field	mg/L	>=8	7.28	<u>4.52</u>	<u>6.96</u>	8.52		
Anions and Nutrients								
Sulphate	mg/L	-	-	-	-	-		
Chloride	mg/L	-	-	-	-	-		
Fluoride	mg/L	-	-	-	-	-		
Ammonia (N-NH3)	mg/L	Variable ⁴	-	-	-	-		
Nitrite (N-NO ₂)	mg/L	_	_	-	_	_		
Nitrate (N-NO ₃)	mg/L	3.7	_	_	_	_		
Total Metals	8'			1				
Aluminum, total (T-Al)	mg/L	_	0.116	0.101	1.36	0.0688		
Antimony, total (T-Sb)	mg/L	-	0.00175	0.00174	0.00188	0.00185		
Arsenic, total (T-As)	mg/L	0.0125	0.00239	0.00244	0.0029	0.00197		
Barium, total (T-Ba)	mg/L	-	0.00278	0.0026	0.0172	0.00325		
Beryllium, total (T-Be)	mg/L	0.1	< 0.0001	< 0.0001	< 0.0001	< 0.0001		
Boron, total (T-B)	mg/L	1.2	0.041	0.045	0.062	0.043		
Cadmium, total (T-Cd)	mg/L	0.00012	< 0.000005	< 0.0000175	0.0000436	< 0.00001		
Chromium, total (T-Cr)	mg/L	-	0.00131	0.00115	0.002	0.00088		
Cobalt, total (T-Co)	mg/L	_	< 0.0001	< 0.0001	0.00057	< 0.0001		
Copper, total (T-Cu)	mg/L	0.002	0.00156	<u>0.00460</u>	<u>0.0058</u>	0.00119		
Iron, total (T-Fe)	mg/L	-	0.021	0.01	0.855	<0.01		
Lead, total (T-Pb)	mg/L	0.002	0.000112	0.000781	<u>0.00325</u>	0.000377		
Manganese, total (T-Mn)	mg/L	-	0.00284	0.00233	0.038	0.00233		
Mercury, total (T-Hg)	mg/L	0.000016	< 0.000005	< 0.000005	0.0000122	< 0.000005		
Molybdenum, total (T-Mo)	mg/L	-	0.0242	0.0238	0.025	0.024		
Nickel, total (T-Ni)	mg/L	0.0083	< 0.0005	< 0.0005	0.00114	0.00059		
Selenium, total (T-Se)	mg/L	0.002	0.000202	0.000179	0.000266	0.000145		
Silver, total (T-Ag)	mg/L	0.0015	< 0.00001	< 0.00001	0.000011	< 0.00001		
Thallium, total (T-Tl)	mg/L	-	0.00002	0.000019	0.000018	0.00002		
Uranium, total (T-U)	mg/L	-	0.0158	0.0132	0.0156	0.013		
Vanadium, total (T-V) ⁸	mg/L	0.005	<u>0.00607</u>	<u>0.00656</u>	<u>0.00864</u>	0.00346		
Zinc, total (T-Zn)	mg/L	0.01	0.0117	0.0152	0.0628	0.0076		
Hexavalent Chromium, total	mg/L	0.0015	0.00150	0.00107	0.00052	0.00103		
Dissolved Metals								
Cadmium, dissolved (D-Cd)	mg/L	-	< 0.00001	< 0.000015	0.0000177	0.0000062		
Copper, dissolved (D-Cu)	mg/L	-	0.00151	0.00215	0.0030	0.00112		
Iron, dissolved (D-Fe)	mg/L	-	< 0.01	< 0.01	0.018	<0.01		
Lead, dissolved (D-Pb)	mg/L	-	< 0.00005	0.000236	0.000064	< 0.00005		
Manganese, dissolved (D-Mn)	mg/L	-	0.00245	0.00446	0.0194	0.00253		
Strontium, dissolved (D-Sr)	mg/L	-	0.0746	0.0699	0.102	0.108		
Vanadium, dissolved (D-V)	mg/L	-	0.00614	0.00608	0.00638	0.00347		
Zinc, dissolved (D-Zn)	mg/L	-	0.0079	0.0132	0.0342	0.0079		
Polycyclic Aromatic Hydrocarbon	s (PAHs)							
Acenaphthene	mg/L	0.006	< 0.00001	< 0.00001	0.000012	< 0.00001		
Acridine	mg/L	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001		
Anthracene	mg/L	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001		
Benz(a)anthracene	mg/L	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001		
Benzo(a)pyrene	mg/L	0.00001	< 0.000005	< 0.000005	<u>0.0000109</u>	< 0.000005		
Chrysene	mg/L	0.0001	< 0.00001	< 0.00001	< 0.000015	< 0.00001		
Fluoranthene	mg/L	-	< 0.00001	< 0.00001	0.000044	< 0.00001		
Fluorene	mg/L	0.012	< 0.00001	< 0.00001	< 0.00001	< 0.00001		

Table C-2: Summary of East Wastewater Treatment Plant Water Quality Results Received at the Time of Reporting.

1-methylnaphthalene	mg/L	0.001	< 0.00001	< 0.00001	0.000013	< 0.00001		
2-methylnaphthalene	mg/L	0.001	< 0.00001	< 0.00001	0.000016	< 0.00001		
Naphthalene	mg/L	0.001	< 0.00005	< 0.00005	< 0.00005	< 0.00005		
Phenanthrene	mg/L	-	< 0.00002	< 0.00002	0.000029	< 0.00002		
Pyrene	mg/L	-	< 0.00001	< 0.00001	0.000041	< 0.00001		
Quinoline	mg/L	-	< 0.00005	< 0.00005	< 0.00005	< 0.00005		
Volatile Organic Compounds (VOCs)								
Benzene	mg/L	0.11	-	-	-	-		
Ethylbenzene	mg/L	0.25	-	-	-	-		
Methyl-tert-butyl-ether	mg/L	5	-	-	-	-		
Styrene	mg/L	-	-	-	-	-		
Toluene	mg/L	0.215	-	-	-	-		
Total Xylenes	mg/L	-	-	-	-	-		
Chlorobenzene	mg/L	0.025	-	-	-	-		
1,2-Dichlorobenzene	mg/L	0.042	-	-	-	-		

< 0.00001

Notes:

¹ Minimum discharge objective for the WWTP effluent. Results <u>underlined in bold italics</u> exceed the applicable minimum discharge objective.

Table C-3: Summary of East WWTP Water Quality Results for Methylmercury Received at the Time of Reporting.

		East WWTP			
		Influent	Effluent		
Parameter	Unit	WWTP-E-IN	WWTP-E-OUT		
	VA24B0452-007		VA24B0452-008		
		2024-05-10 11:15	2024-05-10 10:45		
Methylmercury	μg/L	0.000082	<0.000020		

Parameter		Temperature	DO	Salinity	Turbidity	pH	Conductivity	Visibility of	Total Daily Discharge from the East WWTP
Unit		°C	mg/L	ppt	NTU	s.u.	μS/cm	Sheen	m ³
PE-111578 Discha	arge Limit ¹	-	-	-	-	-	-	-	1,100
Minimum Discha	rge Objective ²	-	>=8	-	-	7.0 - 8.7	-	-	-
Station ID	Date								
WWTP-E-IN	2024-06-02 15:49	14.1	10.28	0.8	4.48	7.08	1585	No	-
WWTP-E-OUT	2024-06-02 14:47	15.8	8.24	0.85	4.27	<u>5.7</u>	1671	No	463
WWTP-E-IN	2024-06-03 10:50	14.8	10.53	0.72	13.83	7.4	1150	No	-
WWTP-E-OUT	2024-06-03 10:29	13.3	<u>7.96</u>	0.17	24.18	<u>9.3</u>	275	No	640
WWTP-E-IN	2024-06-04 13:19	13.1	11.29	0.23	172	8.19	363	No	-
WWTP-E-OUT	2024-06-04 12:51	13	8.33	0.26	11.21	<u>6.5</u>	418	No	617
WWTP-E-IN	2024-06-05 12:12	26.7	<u>5.63</u>	0.22	82	7.1	470	No	-
WWTP-E-OUT	2024-06-05 11:57	15.3	10.28	0.12	40.53	<u>6.2</u>	209	No	563
WWTP-E-IN	2024-06-06 13:39	20.2	<u>5.83</u>	0.26	54	7.2	676	No	-
WWTP-E-OUT	2024-06-06 13:15	15.9	<u>7.28</u>	0.25	0.43	<u>6.7</u>	220	No	604
WWTP-E-IN	2024-06-07 12:45	33.9	<u>2.22</u>	0.26	32.68	7.1	650	No	-
WWTP-E-OUT	2024-06-07 12:19	18.8	<u>4.52</u>	0.28	0.75	5.2	503	No	651
WWTP-E-IN	2024-06-08 14:37	32.7	<u>6.96</u>	0.27	27.88	<u>9.0</u>	666	No	-
WWTP-E-OUT	2024-06-08 14:19	20.4	8.52	0.32	1.76	8.5	601	No	640

Table C-4: Summary of East Wastewater Treatment Plant Daily Field Parameters Received at the Time of Reporting.

Notes:

¹ PE-111578 East WWTP Discharge Limit is applied to effluent compliance station WWTP-E-OUT.

² Minimum discharge objective for the WWTP effluent.

Results *underlined in bold italics* exceed the applicable minimum discharge objective.

Appendix D: Non-Contact Diversion Outlet Results

Table D-1: Summary of Non-Contact Diversion Outlet Water Quality Results Received at the Time of Reporting.

Parameter Unit Lowest Applicable C		ble Guideline ^{1, 2}	Station OUT-02 Non-Contact Water Diversion Ditch Outlet OUT-02	
		Long Term	Short Term	VA24B1929-002 2024-05-27 10:50
General Parameters				2024-03-27 10.30
pH - Field	pH units	6.5 - 9.0	-	6.6
Specific Conductivity - Field	µS/cm	-	-	14
Temperature - Field	o(-	-	10.2
Turbidity - Field	NTU	-		0.0
TSS	mg/L	-	-	<3
Dissolved Oxygen - Field	mg/L	>=8	>=5	12.0
Anions and Nutrients		100 3		10
Sulphate Chlorida	mg/L	128 3	- 600	1.9
Fluoride	mg/L mg/L	-	0.40 3	<0.02
Ammonia (N-NH ₃)	mg/L	1.84 ³	24.7 3	<0.005
Nitrite (N-NO ₂)	mg/L	0.02 ³	0.06 ³	<0.001
Nitrate (N-NO ₃)	mg/L	3	32.8	0.0746
Total Metals		0.052.3		0.109
Auminum, total (1-Al) Antimony, total (T-Sb)	mg/L mg/L	0.053 9	-	<u>0.108</u> <0.0001
Arsenic, total (T-As)	mg/L	0.005	-	0.0001
Barium, total (T-Ba)	mg/L	1	-	0.00385
Beryllium, total (T-Be)	mg/L	0.00013	-	<0.0001
Boron, total (T-B)	mg/L	1.2	29	<0.01
Chaomium, total (T-Cd)	mg/L	0.00036 3	0.00012 3	0.0000056
Cobalt_total (T-Co)	mg/L mg/L	0.001	- 0.11	<0.0005
Copper, total (T-Cu)	mg/L	-	-	0.0007
Iron, total (T-Fe)	mg/L	0.3	1	0.042
Lead, total (T-Pb)	mg/L	0.0034 ³	0.0030 ³	0.00007
Manganese, total (T-Mn)	mg/L	0.77 3	0.82 ³	0.00178
Mercury, total (T-Hg)	mg/L	0.00002	-	<0.000005
Nickel total (T-Ni)	mg/L	0.075	- 40	<0.000285
Selenium, total (T-Se)	mg/L	0.001	-	<0.00005
Silver, total (T-Ag)	mg/L	0.00005 ³	0.0001 ³	<0.00001
Thallium, total (T-Tl)	mg/L	0.0008	-	<0.00001
Uranium, total (T-U)	mg/L	0.0085	0.033	0.000069
Vanadium, total $(1-V)$ Zinc. total $(T-Zn)$	mg/L mg/L	0.12	-	<0.0005
Hexavalent Chromium, total	mg/L	0.001		-
Dissolved Metals				
Cadmium, dissolved (D-Cd)	mg/L	0.000027 3	0.000038 ³	<0.000005
Copper, dissolved (D-Cu)	mg/L	0.0002 ³	0.0012 3	<u>0.00067</u>
Iron, dissolved (D-Fe)	mg/L	-	0.35	0.03
Manganese, dissolved (D-Mn)	mg/L mg/L	0.33 ³	1.97 3	0.00175
Strontium, dissolved (D-Sr)	mg/L	2.5	-	0.00973
Vanadium, dissolved (D-V)	mg/L	-	-	< 0.0005
Zinc, dissolved (D-Zn)	mg/L	0.016 ³	0.021 ³	0.0092
Polycyclic Aromatic Hydrocarbons (PA)	Hs)	0.0059		
Acridine	mg/L mg/L	0.003	-	
Anthracene	mg/L	0.000012	-	-
Benz(a)anthracene	mg/L	0.000018	-	-
Benzo(a)pyrene	mg/L	0.00001	-	-
Chrysene	mg/L	-	-	-
Fluorene	mg/L mg/I	0.00004	-	
1-methylnaphthalene	mg/L mg/L	-	-	
2-methylnaphthalene	mg/L	-	-	-
Naphthalene	mg/L	0.001	0.001	-
Phenanthrene	mg/L	0.0003	-	-
Pyrene Ouincline	mg/L	0.00002	-	-
Volatile Organic Compounds (VOCs)	iiig/L	0.0034	-	-
Benzene	mg/L	0.04	-	
Ethylbenzene	mg/L	0.09	-	-
Methyl-tert-butyl-ether	mg/L	10	3.4	-
Styrene	mg/L	0.072	-	-
Total Xylenes	mg/L mg/I	0.0005	-	
Chlorobenzene	mg/L mg/L	-	-	-
1,2-Dichlorobenzene	mg/L	-	-	_

Notes:

Results *underlined in bold italics* exceed the applicable long-term water quality guideline for the protection of freshwater aquatic life.

Shaded results exceed the applicable short-term water quality guideline for the protection of freshwater aquatic life. ¹ Approved British Columbia Water Quality Guidelines for the protection of freshwater aquatic life (BC ENV, 2023). Where an approved guideline is not established, the working guideline is applied. ² Canadian Water Quality Guideline for the protection of freshwater aquatic life (CCME, 2021). Federal Water Quality Guidelines (FWQG) are used for total Al, Co, and V, and for dissolved Cu, Sr, and Pb (Environment and Climate Change Canada).

³ BC WQG or CWQG indicated to be variable are calculated from sample-specific measurements for temperature, field pH, total hardness and dissolved organic carbon (DOC) content.

 4 When MeHg $\leqslant 0.5\%$ of total Hg, BC WQG = 0.00002 mg/L.

⁵ The approved BC WQG for hexavalent chromium [Cr(VI)] is 0.001 mg/L and 0.0089 mg/L for trivalent chromium [Cr(III)]. The more conservative criteria for Cr(VI) is applied to total chromium results. The lowest applicable guidelines are shown in the table; however, water quality data was screened to all applicable guidelines.

Table D-2: Summary of Freshwater Quality Results for Methylmercury Results Received at the Time of Reporting.

		Station OUT-02
Devenseten	Un:t	Non-Contact Water Diversion Ditch Outlet
Parameter	UIIIt	OUT-02
		VA24B0452-003
		2024-05-10 12:30
Methylmercury	μg/L	0.000068

D-3

Appendix E: Freshwater Receiving Environment Results

					Station SW-02	Station Sw-04	Station SW-07	
				Woodfibre Creek Lower	Mill Creek Mid-	East Creek	Mill Creek	
Parameter	Unit	Lowest Applica	ble Guideline ^{1, 2}	Reach	Reach	Lower Reach	Background	
				SW-01	SW-02	SW-04	SW-07	
				VA24B1929-001	VA24B1914-001	VA24B1914-004	VA24B1914-003	
		Long Term	Short Term	2024-05-27 10:20	2024-05-26 9:45	2024-05-26 13:15	2024-05-26 14:40	
General Parameters		1						
pH - Field	pH units	6.5 - 9.0	-	<u>6.1</u>	7.3	8.3	7.2	
Specific Conductivity - Field	µS/cm	-	-	21	42	33	76	
Temperature - Field	°C	-	-	7.0	7.5	7.0	8.1	
Salinity - Field	ppt	-	-	0.01	0.03	0.02	0.05	
Turbidity - Field	NTU	-	-	0.0	0.0	0.0	0.0	
TSS	mg/L	-	-	<3	<3	5.2	<3	
Dissolved Oxygen - Field	mg/L	>=8	>=5	15.77	16.53	14.25	16.08	
Anions and Nutrients		1						
Sulphate	mg/L	128 ³	-	<0.3	1.15	4.75	1.17	
Chloride	mg/L	120	600	<0.5	< 0.5	0.79	<0.5	
Fluoride	mg/L	-	0.40 - 0.78 ³	< 0.02	< 0.02	0.023	< 0.02	
Ammonia (N-NH ₃)	mg/L	0.59 - 1.9 ³	3.06 - 26.2 ³	< 0.005	< 0.005	< 0.005	< 0.005	
Nitrite (N-NO ₂)	mg/L	0.02 ³	0.06 ³	< 0.001	< 0.001	< 0.001	< 0.001	
Nitrate (N-NO ₃)	mg/L	3	32.8	0.0166	0.0222	0.0616	0.019	
Total Metals								
Aluminum, total (T-Al)	mg/L	0.023 - 0.300 ³	-	<u>0.188</u>	<u>0.0770</u>	0.138	<u>0.0794</u>	
Antimony, total (T-Sb)	mg/L	0.074	-	< 0.0001	< 0.0001	< 0.0001	< 0.0001	
Arsenic, total (T-As)	mg/L	0.005	-	< 0.0001	< 0.0001	0.00014	< 0.0001	
Barium, total (T-Ba)	mg/L	1	-	0.00149	0.00158	0.00692	0.00153	
Beryllium, total (T-Be)	mg/L	0.00013	-	< 0.0001	< 0.0001	< 0.0001	< 0.0001	
Boron, total (T-B)	mg/L	1.2	29	< 0.01	< 0.01	< 0.01	< 0.01	
Cadmium, total (T-Cd)	mg/L	0.000036 - 0.000050 ³	0.00011 - 0.00051 3	< 0.000005	0.0000051	0.0000132	< 0.000005	
Chromium, total (T-Cr) ⁵	mg/L	0.001	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
Cobalt, total (T-Co)	mg/L	0.001	0.11	< 0.0001	< 0.0001	< 0.0001	< 0.0001	
Copper, total (T-Cu)	mg/L	-	-	< 0.0005	< 0.0005	0.00111	< 0.0005	
Iron, total (T-Fe)	mg/L	0.3	1	0.043	0.011	0.261	< 0.01	
Lead, total (T-Pb)	mg/L	0.0034 - 0.0039 ³	0.0030 - 0.014 ³	0.000076	< 0.00005	0.000209	< 0.00005	
Manganese, total (T-Mn)	mg/L	0.77 ³	0.82 ³	0.00118	0.00047	0.0116	0.00039	
Mercury, total (T-Hg)	mg/L	0.00002	-	< 0.000005	< 0.000005	< 0.000005	< 0.000005	
Molybdenum, total (T-Mo)	mg/L	0.073	46	0.000166	0.000318	0.00115	0.000305	
Nickel, total (T-Ni)	mg/L	0.025 ³	-	< 0.0005	< 0.0005	0.0005	< 0.0005	
Selenium, total (T-Se)	mg/L	0.001	-	< 0.00005	< 0.00005	< 0.00005	< 0.00005	
Silver. total (T-Ag)	mg/L	0.00005 ³	0.0001 3	<0.00001	<0.00001	<0.00001	<0.00001	
Thallium, total (T-Tl)	mg/L	0.0008	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	
Uranium, total (T-U)	mg/L	0.0085	0.033	0.000566	0.000174	0.000105	0.000171	
Vanadium, total (T-V)	mg/L	0.12	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
Zinc. total (T-Zn)	mg/L	-	-	< 0.003	< 0.003	0.0031	< 0.003	
Hexavalent Chromium, total	mg/L	0.001	_	< 0.0005	<0.0005	< 0.0005	<0.0005	
Dissolved Metals	0							
Cadmium, dissolved (D-Cd)	mg/L	$0.000018 - 0.000076^{3}$	$0.000038 - 0.00014^{3}$	<0.00005	< 0.000005	0.000084	<0.000005	
Copper, dissolved (D-Cu)	mg/L	0.00020 - 0.00080 ³	$0.00030 - 0.0049^{-3}$	0.00021	0.00022	0.00077	0.00020	
Iron, dissolved (D-Fe)	mg/L	-	0.35	0.029	< 0.01	0.025	<0.01	
Lead, dissolved (D-Pb)	mg/L	0.0023 - 0.0044 3	-	0.000059	< 0.00005	<0.00005	<0.00005	
Manganese, dissolved (D-Mn)	mø/L	0.27 - 0.38 3	1.97 ³	0.00055	0.00024	0.00304	0.0003	
Strontium dissolved (D-Sr)	mg/L	2.5	-	0.00244	0.00409	0.0317	0.00389	
Vanadium dissolved (D-V)	mg/L mg/L	-		<0.0005	<0.00105	<0.0017	<0.0005	
Zinc. dissolved (D-Zn)	mg/L	$0.0033 - 0.016^{-3}$	$0.016 - 0.029^{3}$	<0.001	< 0.001	0.0017	<0.001	
Polycyclic Aromatic Hydrocar	hons (PAHs		0.010 0.02)	(0.001		0.0017		
Acenaphthene	mø/L.	0.0058	_	<0.00001	<0.00001	<0.00001	<0.00001	
Acridine	mg/L	0.003		<0.00001	<0.00001	<0.00001	<0.00001	
Anthracene	mg/L mg/L	0.00012	-	<0.0001	<0.0001	<0.0001	<0.0001	
Benz(a)anthracene	mg/L mg/I	0.000012	_	<0.0001	<0.00001	<0.00001	<0.00001	
Benzo(a)nyrene	mg/L mg/I	0.00018				<0.00001		
Chrysene	mg/L	0.0001	-					
Fluoranthena	mg/L	-	-		<0.00001		<0.00001	
Fluorene	mg/L mg/I	0.0004	-					
1-methylnephthalana	mg/L	0.005	-		<0.00001		<0.00001	
2-methylnephthalana	mg/L	-	-	<0.0001	<0.0001	<0.0001	<0.00001	
2-metry maphunaiene Naphthalana	mg/L	-	-	<0.0001	<0.0001	<0.0001	<0.00001	
Dhanonthra:	mg/L	0.001	0.001		<0.00002		<0.00003	
rnenanurrene	mg/L	0.0003	-	< 0.00002	<0.00002	<0.0002	<0.0002	

Pyrene	mg/L	0.00002	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Quinoline	mg/L	0.0034	-	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Volatile Organic Compounds (V	VOCs)						
Benzene	mg/L	0.04	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Ethylbenzene	mg/L	0.09	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Methyl-tert-butyl-ether	mg/L	10	3.4	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Styrene	mg/L	0.072	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Toluene	mg/L	0.0005	-	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Total Xylenes	mg/L	0.03	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Chlorobenzene	mg/L	-	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005
1,2-Dichlorobenzene	mg/L	-	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005

Notes:

Results <u>underlined in bold italics</u> exceed the applicable long-term water quality guideline for the protection of freshwater aquatic life. Shaded results exceed the applicable short-term water quality guideline for the protection of freshwater aquatic life. ¹ Approved British Columbia Water Quality Guidelines for the protection of freshwater aquatic life (BC ENV, 2023). Where an approved guideline is not established, the working guideline is applied. ² Canadian Water Quality Guideline for the protection of freshwater aquatic life (CCME, 2021). Federal Water Quality Guidelines (FWQG) are used for total Al, Co, and V, and for dissolved Cu, Sr,

and Pb (Environment and Climate Change Canada). ³ BC WQG or CWQG indicated to be variable are calculated from sample-specific measurements for temperature, field pH, total hardness and dissolved organic carbon (DOC) content.

 4 When MeHg $\leqslant 0.5\%$ of total Hg, BC WQG = 0.00002 mg/L.

⁵ The approved BC WQG for hexavalent chromium [Cr(VI)] is 0.001 mg/L and 0.0089 mg/L for trivalent chromium [Cr(III)]. The more conservative criteria for Cr(VI) is applied to total chromium results.

The lowest applicable guidelines are shown in the table; however, water quality data was screened to all applicable guidelines.

		Station SW-01	Station SW-04	
Parameter	Unit	Lower Reach of Woodfibre Creek (near the mouth)	Lower Reach of East Creek (near the outle to the outfall culvert)	
		SW-01	SW-04	
		VA24B0452-001	VA24B0452-001	
		2024-05-10 13:00	2024-05-10 10:20	
Methylmercury	μg/L	<0.000020	0.000022	

Table E-2: Summary of Freshwater Quality Results for Methylmercury Results Received at the Time of Reporting.

				Station SW-03
				Mill Creek Estuary
Parameter	Unit	Lowest Applica	ble Guideline ^{1,2}	SW 02
				5W-05
		Long Torm	Short Torm	
Ceneral Parameters		Long Term		2024-03-20 11.05
pH Field	nU unite	70.87		7 4
pri - rielu Specific Conductivity Field	pri ullits	7.0 - 0.7	-	7.4
Tomporatura Field		-	-	10.6
Solipity Field	nnt	-	-	0.05
Turbidity Field	NTU	-	-	0.05
	ma	-	-	0.0
Dissolved Oxygon Field	mg/L	-	-	12.05
Aniong and Nutrianta	mg/L	-	-	12.93
Allohs and Nutrients	ma/I			1.2
Chlorida	mg/L	-	-	
Elucrido	mg/L	-	-	<0.02
Ammonia (N. NIL.)	mg/L	-	-	<0.02
Ammonia (N-NH3)	mg/L	-	-	<0.005
Nitrate (N-NO ₂)	mg/L	-	-	<0.001
Nitrate (N-NO ₃)	mg/L	-	-	0.0239
	7			0.0077
Aluminum, total (1-Al)	mg/L	-	-	0.0866
Antimony, total (1-Sb)	mg/L	-	-	<0.0001
Arsenic, total (T-As)	mg/L	-	-	<0.0001
Barium, total (T-Ba)	mg/L	-	-	0.00172
Beryllium, total (T-Be)	mg/L	-	-	<0.0001
Boron, total (T-B)	mg/L	-	-	<0.01
Cadmium, total (T-Cd)	mg/L	-	-	0.0000051
Chromium, total (T-Cr)	mg/L	-	-	<0.0005
Cobalt, total (T-Co)	mg/L	-	-	<0.0001
Copper, total (T-Cu)	mg/L	0.002	0.003	<0.0005
Iron, total (T-Fe)	mg/L	-	-	0.02
Lead, total (T-Pb)	mg/L	0.002	0.14	0.000066
Manganese, total (T-Mn)	mg/L	-	-	0.000/4
Mercury, total (T-Hg) ³	mg/L	0.00002	-	<0.000005
Molybdenum, total (T-Mo)	mg/L	-	-	0.000399
Nickel, total (T-Ni)	mg/L	-	-	<0.0005
Selenium, total (T-Se)	mg/L	-	-	<0.00005
Silver, total (T-Ag)	mg/L	0.0015	0.003	<0.00001
Thallium, total (T-TI)	mg/L	-	-	<0.00001
Uranium, total (T-U)	mg/L	-	-	0.000174
Vanadium, total (T-V)	mg/L	-	-	<0.0005
Zinc, total (T-Zn)	mg/L	-	-	<0.003
Hexavalent Chromium, total	mg/L	-	-	<0.0005
Dissolved Metals		1		
Cadmium, dissolved (D-Cd)	mg/L	-	-	<0.000005
Copper, dissolved (D-Cu)	mg/L	-	-	<0.0002
Iron, dissolved (D-Fe)	mg/L	-	-	< 0.01
Lead, dissolved (D-Pb)	mg/L	-	-	<0.00005
Manganese, dissolved (D-Mn)	mg/L	-	-	0.00031
Strontium, dissolved (D-Sr)	mg/L	-	-	0.00495
Vanadium, dissolved (D-V)	mg/L	-	-	<0.0005
Zinc, dissolved (D-Zn)	mg/L	-	-	0.0017
Polycyclic Aromatic Hydrocarbons (PAHs	s)	1		
Acenaphthene	mg/L	-	-	<0.00001
Acridine	mg/L	-	-	< 0.00001

Table F-1: Summary of Mill Creek Estuary Water Quality Results Received at the Time of Reporting.

Pyrene	mg/L	-	-	< 0.00001							
Quinoline	mg/L	-	-	< 0.00005							
Volatile Organic Compounds (VOCs)											
Benzene	mg/L	-	-	< 0.0005							
Ethylbenzene	mg/L	-	-	< 0.0005							
Methyl-tert-butyl-ether	mg/L	-	-	< 0.0005							
Styrene	mg/L	-	-	< 0.0005							
Toluene	mg/L	-	-	< 0.0004							
Total Xylenes	mg/L	_	-	< 0.0005							
Chlorobenzene	mg/L	-	-	< 0.0005							
1,2-Dichlorobenzene	mg/L	-	-	< 0.0005							

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Anthracene

Chrysene

Fluorene

Fluoranthene

Naphthalene

Phenanthrene

Benz(a)anthracene

1-methylnaphthalene

2-methylnaphthalene

Benzo(a)pyrene

Results in *underlined in bold italics* exceed the applicable long-term water quality guideline for the protection of estuarine water aquatic life.

mg/L

Shaded results exceed the applicable short-term water quality guideline for the protection of estuarine water aquatic life. ¹ Approved British Columbia Water Quality Guidelines for the protection of estuarine aquatic life (BC ENV, 2021). Where an approved guideline is not established, the working guideline is applied.

< 0.00001

< 0.00001

 $<\!0.000005$

< 0.00001

< 0.00001

< 0.00001

< 0.00001

< 0.00001

< 0.00005

< 0.00002

² Canadian Water Quality Guideline for the protection of estuarine aquatic life (CCME, 2021).

³ When MeHg $\leq 0.5\%$ of total Hg, BC WQG = 0.00002 mg/L.

Notes:

Appendix G: Marine Water Receiving Environment Results

Table G-1: Summary of Marine Water Quality Results Received at the Time of Reporting

					Station IDZ-E1		Station IDZ-E2			
		Lowest Applicable Guideline ^{1, 2}		0.5 m Below	2 m Below	2 m Above	0.5 m Below	2 m Below	2 m Above	
				Surface	Surface	Seafloor	Surface	Surface	Seafloor	
Parameter	Unit			IDZ-E1-0.5	IDZ-E1-2m	IDZ-E1-SF	IDZ-E2-0.5	IDZ-E2-2m	IDZ-E2-SF	
				VA24B2063-	VA24B2063-	VA24B2063-	VA24B2063-	VA24B2063-	VA24B2063-	
		Long	Short	2024-05-28	2024-05-28	2024-05-28	2024-05-28	2024-05-28	2024-05-28	
		Term	Term	14:25	14:40	14:52	15:10	16:33	16:39	
General Parameters		Term	Term	11120	1	11102	10.10	10.000	10.07	
pH - Field	pH units	7.0 - 8.7	-	8.0	8.30	8.0	8.0	8.4	7.8	
Specific Conductivity - Field	µS/cm	-	-	5449	6250	39762	5672	7380	43954	
Temperature - Field	°C	-	-	9.9	10	12.3	9.8	11.4	10.2	
Salinity - Field	ppt	Narrative ³	-	2.97	3.41	25.36	3.09	4.22	28.20	
Turbidity - Field	NTU	Narrative ³	Narrative ³	4.64	3.74	0.24	3.85	3.76	0.23	
TSS	mg/L	Narrative ³	Narrative ³	2.7	3.2	<2	3.9	2.6	<2	
Dissolved Oxygen - Field	mg/L	>=8	-	12.13	12.53	11.23	12.16	12.54	9.90	
Anions and Nutrients										
Sulphate	mg/L	-	-	244	269	1680	199	722	2170	
Chloride	mg/L	-	-	2010	2320	12500	1710	5820	15800	
Fluoride	mg/L	-	1.5	<1	<1	<1	<1	<1	<1	
Ammonia (N-NH ₃)	mg/L	variable 4	Variable 4	0.0135	0.0114	0.0231	0.0118	0.0164	0.0275	
Nitrate (N-NO ₂)	mg/L	- 27	- 220	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Total Metals	IIIg/L	5.7	339	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Aluminum, total (T-Al)	mo/I	_	_	0 204	0 19	0.0218	0 199	0.0153	0.018	
Antimony, total (T-Sb)	mg/L	_	0.27 5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Arsenic, total (T-As)	mg/L	0.0125	0.0125	0.00074	0.0006	0.00268	0.00058	0.00258	0.00366	
Barium, total (T-Ba)	mg/L	-	-	0.0091	0.0089	0.0053	0.009	0.006	0.0069	
Beryllium, total (T-Be)	mg/L	0.1	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
Boron, total (T-B)	mg/L	1.2	-	0.71	0.71	3.52	0.58	2.95	<u>4.3</u>	
Cadmium, total (T-Cd)	mg/L	0.00012	-	< 0.00002	< 0.00002	0.000048	< 0.00002	0.000035	0.000058	
Chromium, total (T-Cr)	mg/L	-	-	0.00216	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
Cobalt, total (T-Co)	mg/L	-	-	0.000125	0.000121	0.000073	0.000123	0.000066	0.000068	
Copper, total (T-Cu)	mg/L	0.002	0.003	0.00108	0.00101	0.00053	0.00108	0.00066	< 0.0005	
Iron, total (T-Fe)	mg/L	-	-	0.216	0.198	0.017	0.213	< 0.01	0.019	
Lead, total (T-Pb)	mg/L	0.002	0.14	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Manganese, total (T-Mn)	mg/L	-	-	0.00941	0.00907	0.00348	0.0093	0.00428	0.00205	
Mercury, total (T-Hg)	mg/L	0.000016	-	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.00005	
Nielvel tetel (T Ni)	mg/L	-	-	0.00143	0.00157	0.00707	0.00127	0.00644	0.00926	
Nickel, total (1-Ni)	mg/L	0.0083	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		
Silver total (T Ag)	mg/L	0.002	-	<0.0003	<0.0003	<0.00182	<0.0003	<0.00185	<u>0.0030</u> <0.0001	
Thallium total (T-TI)	mg/L	0.0015	0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Uranium total (T-U)	mg/L		_	0.000422	0.00043	0.00201	0.000306	0.00176	0.00243	
Vanadium, total (T-V)	mg/L	0.005 7	_	0.00091	0.00092	0.00102	0.00087	0.00097	0.0013	
Zinc. total (T-Zn)	mg/L	0.01	0.055	<0.003	<0.003	<0.003	<0.003	<0.003	< 0.003	
Hexavalent Chromium, total	mg/L	0.0015	-	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015	
Dissolved Metals	. 8						1		1	
Cadmium, dissolved (D-Cd)	mg/L	_	-	< 0.00002	< 0.00002	0.000055	< 0.00002	-	0.000059	
Copper, dissolved (D-Cu)	mg/L	-	-	0.00052	0.00063	< 0.0005	< 0.0005	-	< 0.0005	
Iron, dissolved (D-Fe)	mg/L	-	-	0.018	0.017	< 0.01	0.018	-	< 0.01	
Lead, dissolved (D-Pb)	mg/L	-	-	< 0.0001	< 0.0001	< 0.0001	< 0.0001	-	< 0.0001	
Manganese, dissolved (D-Mn)	mg/L	-	-	0.00525	0.00535	0.00291	0.00521	-	0.00119	
Strontium, dissolved (D-Sr)	mg/L	-	-	0.705	0.909	4.94	0.718	-	6.27	
Vanadium, dissolved (D-V)	mg/L	-	-	<0.0005	<0.0005	0.001	<0.0005	-	0.00128	
Zilic, uissoiveu (D-Zil) Polycyclic Aromatic Hydrogerbar	ns (PAHe)	-	-	<0.001	<0.001	<0.001	<0.001	-	<0.001	
Acenaphthene	mg/I	0.006	_	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	
Acridine	mg/L mg/I	-	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	
Anthracene	mg/L	_	_	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	
Benz(a)anthracene	mg/L	-	-	< 0.00001	<0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	
Benzo(a)pyrene	mg/L	0.00001	-	< 0.000005	< 0.000005	< 0.000005	< 0.000005	< 0.000005	< 0.000005	
Chrysene	mg/L	0.0001	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	
Fluoranthene	mg/L	-	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	
Fluorene	mg/L	0.012	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	
1-methylnaphthalene	mg/L	0.001	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	
2-methylnaphthalene	mg/L	0.001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	
Naphthalene	mg/L	0.001	-	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	< 0.00005	
Phenanthrene	mg/L	-	-	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	
Pyrene	mg/L	-	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	
Quinoline Valatila Organia Causa I. (20	mg/L	-	-	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
volatile Organic Compounds (VC	JCS)	0.11		<0.000 <i>5</i>	<0.000 <i>°</i>	<0.000 <i>°</i>	<0.000 <i>°</i>	<0.000 <i>°</i>	<0.000 <i>F</i>	
Ethylbenzene	mg/L mg/I	0.11	-							
Methyl-tert-hutyl-ether	mg/L mg/I	5	- 0.44	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005	
Styrene	mg/L mg/I	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
Toluene	mg/L	0.215	_	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	
Total Xylenes	mg/L	-	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
Chlorobenzene	mg/L	0.025	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
1,2-Dichlorobenzene	mg/L	0.042	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	

Notes:

Results <u>underlined in bold italics</u> exceed the applicable long-term water quality guideline for the protection of marine water aquatic life. Shaded results exceed the applicable short-term water quality guideline for the protection of marine water aquatic life. ¹ Approved British Columbia Water Quality Guidelines for the protection of marine aquatic life (BC ENV, 2021). Where an approved guideline is not established, the working guideline is applied. ² Canadian Water Quality Guideline for the protection of marine aquatic life (CCME, 2021). ³ Narrative guideline for the evaluation of change from background conditions arising from discharges to the aquatic environment. The water quality data presented in the table were collected when the cite was discharging therefore the midelines were avaluated site was discharging, therefore the guidelines were evaluated. ⁴ The approved total ammonia nitrogen BC WQG is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document (BC ENV, 2021). ⁵ The working BC WQG for trivalent antimony [SB(III)] is 0.27 mg/L and is applied to total antimony results.

⁶ When MeHg $\leq 0.5\%$ of total Hg, BC WQG = 0.00002 mg/L.

⁷ Federal Water Quality Guideline for Vanadium (Environment and Climate Change Canada).

⁸ The recorded field salinity measurements for IDZ-2 do not correlate with conductivity measurements and are suspected to be erroneous.
 The lowest applicable guidelines are shown in the table; however, water quality data was screened to all applicable guidelines.
 Dissolved metals were not measured in the sample collected at 2 m below surface at IDZ-E2 on May 28 due to a sample collection error.

Table G-2: Summary of Marine Water Quality Results Received at the Time of Reporting

					Station WOR1		Station IDZ-E1		
				0.5 m Below	2 m Below	2 m Above	0.5 m Below	2 m Below	2 m Above
		Lowest A	pplicable	Surface	Surface	Seafloor	Surface	Surface	Seafloor
Doromotor	Unit	Guide	eline ^{1,2}	WQR1-0.5	WQR1-2m	WQR1-SF	IDZ-E1-0.5	IDZ-E1-2m	IDZ-E1-SF
rarameter	Umt			VA24B2063-	VA24B2063-	VA24B2063-	VA24B2772-	VA24B2772-	VA24B2772-
				001	002	003	001	002	003
		Long	Short	2024-05-28	2024-05-28	2024-05-28	2024-06-04	2024-06-04	2024-06-04
		Term	Term	17:08	17:33	17:47	16:10	16:40	17:10
General Parameters		1	1		1	1	1	1	
pH - Field	pH units	7.0 - 8.7	-	7.8	8.3	7.6	8.6	8.9	8.3
Specific Conductivity - Field	µS/cm	-	-	5628	8271	43975	2526	3955	33105
Temperature - Field	°C	-	-	9.3	10	10.1	9.4	10.7	12.8
Salinity - Field	ppt	Narrative ³	-	2.93	4.53	27.28	1.31	2.1	20.63
Turbidity - Field	NTU	Narrative ³	Narrative ³	2.74	3.15	0.18	11.5	7.79	1.00
TSS	mg/L	Narrative ³	Narrative ³	3.8	<2	<2.6	9.0	10.6	3.1
Dissolved Oxygen - Field	mg/L	>=8	-	12.22	12.67	10.71	12.63	12.55	10.96
Anions and Nutrients									
Sulphate	mg/L	-	-	269	657	2160	<30	<30	2200
Chloride	mg/L	-	-	2310	5380	16200	156	254	15600
Fluoride	mg/L	-	1.5	<1	<1	<1	<1	<1	<1
Ammonia (N-NH ₃)	mg/L	Variable ⁴	Variable ⁴	0.0122	0.0208	0.041	0.0103	< 0.005	< 0.005
Nitrite (N-NO ₂)	mg/L	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.1
Nitrate (N-NO ₃)	mg/L	3.7	339	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Metals									
Aluminum, total (T-Al)	mg/L	-	-	0.227	0.0609	0.0102	0.627	0.58	0.0104
Antimony, total (T-Sb)	mg/L	-	0.27 5	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Arsenic, total (T-As)	mg/L	0.0125	0.0125	< 0.0004	0.00212	0.00328	0.00048	0.00046	0.00393
Barium, total (T-Ba)	mg/L	-	-	0.009	0.0068	0.0093	0.0134	0.0129	0.0105
Beryllium, total (T-Be)	mg/L	0.1	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Boron, total (T-B)	mg/L	1.2	-	0.58	2.04	4.46	<0.3	<0.3	4.33
Cadmium, total (T-Cd)	mg/L	0.00012	_	< 0.00002	0.000034	0.000063	< 0.00002	< 0.00002	0.000086
Chromium. total (T-Cr)	mg/L	-	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Cobalt, total (T-Co)	mg/L	_	_	0.000133	0.000084	0.000067	0.000285	0.000248	0.000061
Copper total (T-Cu)	mg/L mg/L	0.002	0.003	0.00108	0.00068	<0.000007	0.00212	0.0018	<0.00001
Iron, total (T-Fe)	mg/L	-	-	0.228	0.06	0.012	0.529	0.49	0.013
Lead total (T-Ph)	mg/L mg/I	0.002	0.14	<0.0001	<0.001	<0.001	0.00015	0.0016	<0.0001
Manganese total (T-Mn)	mg/L mg/L	-	-	0.00932	0.00591	0.00175	0.00015	0.00010	0.00157
Mercury total (T-Hg)	mg/L mg/I	0.000016	_	<0.00005	<0.00000	<0.00175	<0.0101	<0.0142	<0.00107
Molybdenum total (T-Mo)	mg/L mg/I	0.000010		0.00138	0.00509	0.00000	0.00000	0.00044	0.000005
Nickel total (T-Ni)	mg/L mg/I	0.0083		<0.00138	<0.005	<0.0001	<0.0004	<0.00044	<0.0005
Selenium total (T-Se)	mg/L mg/I	0.0085		<0.0005	0.00125	0.0003	<0.0005	<0.0005	<0.0005
Silver total (T Ag)	mg/L mg/I	0.002	-	<0.0003	<0.00123	<0.00098	<0.0003	<0.0003	<0.0003
Thellium total (T TI)	mg/L mg/I	0.0015	0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Uranium, total (T-II)	mg/L mg/I	-	-	<0.00005	<0.00003	<0.00005	<0.00003	<0.00003	<0.00003
Vanadium, total (T-U)	mg/L	-	-	0.000410	0.00142	0.00233	0.000109	0.000127	0.00284
Valiadium, total $(1 - V)$	mg/L	0.003	-	<0.00093	0.00097	<0.00132	0.00148	0.0014	<0.00129
Zinc, total (1-Zh)	mg/L	0.01	0.055	<0.003	<0.003	<0.003	<0.003	<0.003	<0.005
Dissolved Metals	mg/L	0.0015	-	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
Dissolved Metals				<0.00002	0.000028	0.000057	<0.00002	<0.00002	0.000022
Carman dissolved (D-Cd)	mg/L mg/L	-	-	<0.00002	0.000028	0.00056	<0.0002	<0.0002	0.000032
Copper, dissolved (D-Cu)	mg/L	-	-	0.00054	0.00056	<0.0005	0.00091	0.00069	0.00078
Iron, dissolved (D-Fe)	mg/L	-	-	0.017	0.015	<0.01	0.024	0.021	<0.01
Lead, dissolved (D-Pb)	mg/L	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nanganese, dissolved (D-Mn)	mg/L	-	-	0.00478	0.00484	0.00106	0.00391	0.00443	0.00249
Strontium, dissolved (D-Sr)	mg/L	-	-	0.757	2.01	6.3	0.07	0.104	3.83
v anadium, dissolved (D-V)	mg/L	-	-	<0.0005	0.0006	0.00125	<0.0005	<0.0005	0.0009
Zinc, dissolved (D-Zn)	mg/L	-	-	<0.001	<0.001	<0.001	0.0011	<0.001	<0.001
For the second terms of	UIIS (PAHS)	0.007		<0.00001	<0.00001	<0.00001	<0.00001	<u>_0 00001</u>	<0.00001
Acenaphine	mg/L	0.006	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0001
Acridine	mg/L	-	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0001
Anthracene Dang(a) setting at	mg/L	-	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0001
Denz(a)anthracene	mg/L	-	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(a)pyrene	mg/L	0.00001	-	<0.00005	<0.000005	<0.000005	<0.000005	<0.000005	<0.00005
Cnrysene	mg/L	0.0001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0001
Fluoranthene	mg/L	-	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Fluorene	mg/L	0.012	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
1-methylnaphthalene	mg/L	0.001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
2-methylnaphthalene	mg/L	0.001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Naphthalene	mg/L	0.001	-	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Phenanthrene	mg/L	-	-	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	< 0.00002
Pyrene	mg/L	-	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	< 0.00001
Quinoline	mg/L	-	-	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Volatile Organic Compounds (V	(OCs)		1		1	1	1	1	
Benzene	mg/L	0.11	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Ethylbenzene	mg/L	0.25	-	< 0.0005	< 0.0005	< 0.0005	<0.0005	< 0.0005	< 0.0005
Methyl-tert-butyl-ether	mg/L	5	0.44	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Styrene	mg/L	-	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Toluene	mg/L	0.215	-	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Total Xylenes	mg/L	-	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Chlorobenzene	mg/L	0.025	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
1,2-Dichlorobenzene	mg/L	0.042	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005

Notes:

Results <u>underlined in bold italics</u> exceed the applicable long-term water quality guideline for the protection of marine water aquatic life. Shaded results exceed the applicable short-term water quality guideline for the protection of marine water aquatic life. ¹ Approved British Columbia Water Quality Guidelines for the protection of marine aquatic life (BC ENV, 2021). Where an approved guideline is not established, the working guideline is applied. ² Canadian Water Quality Guideline for the protection of marine aquatic life (CCME, 2021). ³ Narrative guideline for the evaluation of change from background conditions arising from discharges to the aquatic environment. The water quality data presented in the table were collected when the cite was discharging therefore the midelines were avaluated site was discharging, therefore the guidelines were evaluated. ⁴ The approved total ammonia nitrogen BC WQG is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document (BC ENV, 2021). ⁵ The working BC WQG for trivalent antimony [SB(III)] is 0.27 mg/L and is applied to total antimony results.

 6 When MeHg $\leqslant 0.5\%$ of total Hg, BC WQG = 0.00002 mg/L.

⁷ Federal Water Quality Guideline for Vanadium (Environment and Climate Change Canada).
 The lowest applicable guidelines are shown in the table; however, water quality data was screened to all applicable guidelines.

Table G-3: Summary of Marine Water Quality Results Received at the Time of Reporting

					Station IDZ-E2	2	Station WQR1		
				0.5 m Below	2 m Below	2 m Above	0.5 m Below	2 m Below	2 m Above
		Lowest A	Applicable	Surface	Surface	Seafloor	Surface	Surface	Seafloor
Danamatan	Unit	Guide	eline ^{1,2}	IDZ-E2-0.5	IDZ-E2-2m	IDZ-E2-SF	WQR1-0.5	WQR1-2m	WQR1-SF
Parameter	Unit			VA24B2772-	VA24B2772-	VA24B2772-	VA24B2772-	VA24B2772-	VA24B2772-
				004	005	006	007	008	009
		Long	Short	2024-06-04	2024-06-04	2024-06-04	2024-06-04	2024-06-04	2024-06-04
		Term	Term	15:00	15:15	15:30	9:30	9:45	10:05
General Parameters	I		1		1	1	1	1	1
pH - Field	pH units	7.0 - 8.7	-	8.3	8.6	7.3	8.5	8.7	7.1
Specific Conductivity - Field	µS/cm	-	-	2438	3818	44650	782	1157	45982
Temperature - Field	°C	-	-	9.1	10.3	9.7	8.3	8.5	8.8
Salinity - Field	ppt	Narrative ³	-	1.26	2.03	28.68	0.38	0.58	29.57
Turbidity - Field	NTU	Narrative ³	Narrative ³	11.1	7.52	1.14	9.18	9.08	0.28
TSS	mg/L	Narrative ³	Narrative ³	9.5	8.5	7.3	8.7	10.2	6
Dissolved Oxygen - Field	mg/L	>=8	-	12.19	12.11	9.41	12.27	12.46	<u>7.51</u>
Anions and Nutrients									
Sulphate	mg/L	-	-	125	283	469	70	85	1930
Chloride	mg/L	-	-	1000	2140	3480	594	710	13800
Fluoride	mg/L	-	1.5	<1	<1	<1	<1	<1	<1
Ammonia (N-NH ₃)	mg/L	Variable ⁴	Variable ⁴	0.0058	< 0.005	0.0076	< 0.005	< 0.005	0.041
Nitrite (N-NO ₂)	mg/L	-	-	< 0.1	<0.1	< 0.1	< 0.1	< 0.1	<0.1
Nitrate (N-NO ₃)	mg/L	3.7	339	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Total Metals									
Aluminum, total (T-Al)	mg/L	-	-	0.488	0.338	0.27	0.49	0.57	0.0921
Antimony, total (T-Sb)	mg/L	-	0.27 5	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Arsenic, total (T-As)	mg/L	0.0125	0.0125	0.00086	0.00074	0.00098	0.00042	0.00049	0.00285
Barium, total (T-Ba)	mg/L	-	-	0.0102	0.0096	0.0084	0.01	0.0114	0.0068
Beryllium, total (T-Be)	mg/L	0.1	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Boron, total (T-B)	mg/L	1.2	-	0.39	0.56	0.91	< 0.3	< 0.3	<u>3.59</u>
Cadmium, total (T-Cd)	mg/L	0.00012	-	< 0.00002	< 0.00002	0.000023	< 0.00002	< 0.00002	0.000052
Chromium, total (T-Cr)	mg/L	-	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Cobalt, total (T-Co)	mg/L	-	-	0.00021	0.000168	0.000143	0.00021	0.000243	0.00011
Copper, total (T-Cu)	mg/L	0.002	0.003	0.00159	0.00118	0.001	0.00151	0.00175	0.0007
Iron, total (T-Fe)	mg/L	-	-	0.407	0.278	0.237	0.398	0.482	0.1
Lead, total (T-Pb)	mg/L	0.002	0.14	0.00029	0.00012	0.00015	0.00042	0.00058	0.0001
Manganese, total (T-Mn)	mg/L	-	-	0.0124	0.00983	0.0088	0.012	0.0141	0.0048
Mercury, total (T-Hg)	mg/L	0.000016	-	< 0.000005	< 0.000005	< 0.000005	< 0.000005	< 0.000005	< 0.000005
Molybdenum, total (T-Mo)	mg/L	-	-	0.00076	0.00132	0.00208	0.00056	0.00064	0.00658
Nickel, total (T-Ni)	mg/L	0.0083	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Selenium, total (T-Se)	mg/L	0.002	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Silver, total (T-Ag)	mg/L	0.0015	0.003	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Thallium, total (T-Tl)	mg/L	-	-	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Uranium, total (T-U)	mg/L	-	-	0.000277	0.000451	0.000698	0.000225	0.00022	0.00235
Vanadium, total (T-V)	mg/L	0.005 7	-	0.00118	0.00104	0.00099	0.00117	0.0014	0.00116
Zinc, total (T-Zn)	mg/L	0.01	0.055	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Hexavalent Chromium, total	mg/L	0.0015	-	< 0.0015	< 0.0015	< 0.0015	<u>0.00152</u>	< 0.0015	< 0.0015
Dissolved Metals									
Cadmium, dissolved (D-Cd)	mg/L	-	-	< 0.00002	< 0.00002	0.000022	< 0.00002	< 0.00002	< 0.00002
Copper, dissolved (D-Cu)	mg/L	-	-	0.00051	0.00055	0.00058	< 0.0005	< 0.0005	< 0.0005
Iron, dissolved (D-Fe)	mg/L	-	-	0.016	0.021	< 0.01	0.018	0.019	< 0.01
Lead, dissolved (D-Pb)	mg/L	-	-	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Manganese, dissolved (D-Mn)	mg/L	-	-	0.0038	0.00425	0.00408	0.00366	0.00401	0.00216
Strontium, dissolved (D-Sr)	mg/L	-	-	0.454	0.805	1.58	0.232	0.254	5.48
Vanadium, dissolved (D-V)	mg/L	-	-	< 0.0005	< 0.0005	0.00051	< 0.0005	< 0.0005	0.00108
Zinc, dissolved (D-Zn)	mg/L	-	-	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Polycyclic Aromatic Hydrocarb	ons (PAHs)								
Acenaphthene	mg/L	0.006	-	< 0.00001	0.000015	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acridine	mg/L	-	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	mg/L	-	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	mg/L	-	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	mg/L	0.00001	-	< 0.000005	< 0.000005	< 0.000005	< 0.000005	< 0.000005	< 0.000005
Chrysene	mg/L	0.0001	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	mg/L	-	-	0.000012	0.000021	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	mg/L	0.012	-	< 0.00001	0.000013	< 0.00001	< 0.00001	< 0.00001	< 0.00001
1-methylnaphthalene	mg/L	0.001	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
2-methylnaphthalene	mg/L	0.001	-	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	mg/L	0.001	-	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Phenanthrene	mg/L	-	-	< 0.00002	0.000027	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Pyrene	mg/L	-	-	< 0.00001	0.000012	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Quinoline	mg/L	-	-	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Volatile Organic Compounds (V	VOCs)					1		1	
Benzene	mg/L	0.11	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Ethylbenzene	mg/L	0.25	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Methyl-tert-butyl-ether	mg/L	5	0.44	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Styrene	mg/L	-	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Toluene	mg/L	0.215	-	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Total Xylenes	mg/L	-	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Chlorobenzene	mg/L	0.025	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
1,2-Dichlorobenzene	mg/L	0.042	-	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005

Notes:

Results <u>underlined in bold italics</u> exceed the applicable long-term water quality guideline for the protection of marine water aquatic life. Shaded results exceed the applicable short-term water quality guideline for the protection of marine water aquatic life. ¹ Approved British Columbia Water Quality Guidelines for the protection of marine aquatic life (BC ENV, 2021). Where an approved guideline is not established, the working guideline is applied. ² Canadian Water Quality Guideline for the protection of marine aquatic life (CCME, 2021). ³ Narrative guideline for the evaluation of change from background conditions arising from discharges to the aquatic environment. The water quality data presented in the table were collected when the cite was discharging therefore the midelines were avaluated site was discharging, therefore the guidelines were evaluated. ⁴ The approved total ammonia nitrogen BC WQG is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document (BC ENV, 2021). ⁵ The working BC WQG for trivalent antimony [SB(III)] is 0.27 mg/L and is applied to total antimony results.

 6 When MeHg $\leqslant 0.5\%$ of total Hg, BC WQG = 0.00002 mg/L.

⁷ Federal Water Quality Guideline for Vanadium (Environment and Climate Change Canada).
 The lowest applicable guidelines are shown in the table; however, water quality data was screened to all applicable guidelines.

Parameter Unit			Station IDZ-E1		Station IDZ-E2			
	0.5 m Below Surface	2 m Below Surface	2 m Above Seafloor	0.5 m Below Surface	2 m Below Surface	2 m Above Seafloor		
	Unit	IDZ-E1-0.5	IDZ-E1-2m	IDZ-E1-SF	IDZ-E2-0.5	IDZ-E2-2m	IDZ-E2-SF	
		VA24B0178-004	VA24B0178-005	VA24B0178-006	VA24B0178-007	VA24B0178-008	VA24B0178-009	
		2024-05-08 11:45	2024-05-08 11:30	2024-05-08 11:15	2024-05-08 12:30	2024-05-08 13:00	2024-05-08 12:05	
Methylmercury	μg/L	< 0.000020	< 0.000020	< 0.000020	0.000022	< 0.000020	< 0.000020	

Table G-4: Summary of IDZ Marine Water Quality Results for Methylmercury Received at the Time of Reporting

Table G-5: Summary of Reference Station Marine Water Quality Results for Methyl Mercury Received at the Time of Reporting

Parameter Unit			Station WQR1		Station WQR2			
	0.5 m Below Surface	2 m Below Surface	2 m Above Seafloor	0.5 m Below Surface	2 m Below Surface	2 m Above Seafloor		
	Unit	WQR1-0.5	WQR1-2m	WQR1-SF	WQR2-0.5	WQR2-2m	WQR2-SF	
		VA24B0178-010	VA24B0178-011	VA24B0178-012	VA24B0178-001	VA24B0178-002	VA24B0178-003	
		2024-05-08 14:30	2024-05-08 14:15	2024-05-08 13:45	2024-05-08 10:45	2024-05-08 10:30	2024-05-08 9:15	
Methylmercury	μg/L	<0.000020	<0.000020	< 0.000020	<0.000020	< 0.000020	< 0.000020	