TECHNICAL MEMORANDUM

To:	**Ian McAllister, Ashleigh Crompton, Mike Champion, Jackie Boruch and Ryan Schucroft (Woodfibre LNG)**	**Date:**	**14 Feb 2025**
From:	**Holly Pelletier, Cheng Kuang and Patrick Mueller (Lorax)**	**Project #:**	**A633-9**
Subject:	**PE-111578 Weekly Discharge and Compliance Report #50 for February 2 – February 8**		

Waste Discharge Authorization (WDA) Effluent Permit PE-111578 was issued by the British Columbia Energy Regulator (BCER) to Woodfibre LNG on February 9, 2024. The associated WDA discharge and compliance monitoring program 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 to Woodfibre LNG.

This technical memorandum (Report #50) was prepared by Lorax Environmental and summarizes WDA monitoring conducted for the period of February 2 – February 8. Monitoring data and pending results from prior monitoring periods available at the time of reporting are tabulated and included as appendices to this memorandum. Report #50 has been prepared to meet the requirements specified in Condition 4.2 of 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."

Site layout and water management figures, and site images are included in Appendix A. Monitoring results are tabulated in Appendix B through Appendix G for contact water, treated water and receiving environment samples.

1. Current Conditions

1.1 Water Management Infrastructure

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, overburden and bedrock excavation, pouring of concrete foundations and construction of contact water management facilities. Shoring works along the foreshore areas were initiated in December 2023, and in early 2024 construction of water management infrastructure commenced and has continued through the February 2 – February 8, 2025 monitoring period. The East Wastewater Treatment Plant (WWTP), East Sedimentation Pond and West Sedimentation Pond are commissioned for operation.

Operation of the West WWTP was suspended September 25, 2024. The suspension was implemented for the temporary reconfiguration of the plant to conduct pilot-scale evaluation of alternative treatment processes for improving treatment outcomes. Any process modifications that may result from the pilot-scale evaluation will be submitted to BCER for approval prior to full-scale implementation. Site waters that require treatment will continue to be directed to the East WWTP while the operation of the West WWTP is suspended.

Non-contact water diversion ditches west of Mill Creek have been fully or partially upgraded and discharge to Mill Creek at station OUT-06, or to Howe Sound at station OUT-02 (Appendix A, Figure 1). During heavy precipitation non-contact water from the diversion ditches is also conveyed to Howe Sound via station OUT-01. East of Mill Creek, non-contact water is diverted around the East Catchment along pre-existing road ditches that flow to East Creek or Mill Creek. To facilitate the replacement of the East Creek discharge culvert at OUT-12, the lower reach of East Creek was temporarily diverted to an adjacent culvert, OUT-11, on September 17, 2024.

The East and West catchments conveyance ditches described in PE- 111578 were designed to transport non-contaminated contact water (*i.e.,* stormwater) to the East and West sedimentation ponds and will be constructed following completion of site preparation activities (*e.g.*, site grading, bedrock excavation) along the ditch lines. Until the ditches are operational, contact waters within the catchments are managed to remain on site using a system of berms, sumps, temporary ditches and baker tanks for intermediate storage, and are then directed to the East and West Sedimentation Ponds for TSS settling prior to discharge.

Flocculant-based TSS settling systems are used at the East and West Sedimentation Ponds to remove TSS from non-contaminated contact water at the time of discharge. Some of the clarified water may be recirculated back to the ponds. The first West Sedimentation Pond TSS settling system (ESC) was commissioned for use on September 25, 2024, with an 820 m^3/day installed capacity. A second TSS settling system (W500GPM) was added and commissioned for use on

November 28 and provides an additional 2,725 m^3/day installed capacity for clarifying water. A TSS settling system (E500GPM) for the East Sedimentation Pond was commissioned on December 4, 2024, also with 2,725 m^3/day installed capacity.

Contaminated contact water from within the East and West Catchments, and non-contaminated contact water stored in the East Sedimentation Pond are directed to the East WWTP for treatment prior to discharge to Howe Sound. Direct discharge of East WWTP treated contact water to Howe Sound has been implemented since October 28, 2024; however, in late January the WWTP effluent was redirected to sedimentation pond and only TSS clarified pond water is discharged to Howe Sound.

The East and West Catchment permanent outfall structures have not been completed. Temporary discharge systems (*i.e.*, pumps, hosing and diffusors) are used to convey clarified or treated effluent to the discharge locations authorized for the East and West Catchments. In the East Catchment, treated WWTP effluent and clarified E500GPM effluent are combined in a tank prior to discharge at location SP-E-OUT since December 2, 2024. The West Catchment discharge location, SP-W-OUT receives the combined clarified effluents from the ESC and W500GPM TSS settling systems since November 28, 2024. Each of the authorized discharge locations has an initial dilution zone (IDZ) where discharged water mixes with Howe Sound surface waters. The IDZ is defined in PE-111578 and extends 150 m from each point of discharge into Howe Sound.

The construction phase water management layout and monitoring stations are shown in Appendix A, Figure 1. Contact water collection and dewatering locations and photographs of the sedimentation ponds are shown in Appendix A, Figure 2 through Figure 5.

1.2 Weather and Water Management

Variable weather was observed during the monitoring period (February 2 – February 8), with light precipitation recorded February 6, 7, and 8. The total precipitation amount during the monitoring period was 7.6 mm. The daily weather conditions are summarized in Table 1.

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

Date	Precipitation (mm)	Max. Temp (°C)	Min. Temp (°C)	Weather Description
02-02-2025	0	0.7	-4.6	Overcast
02-03-2025	0	-3.9	-7.3	Overcast
02-04-2025	0	-1.0	-6.6	Overcast
02-05-2025	0	-1.3	-7.5	Mix of Sun and Cloud
02-06-2025	0.6	1.4	-5.9	Mix of Sun and Cloud
02-07-2025	2.2	3.1	-6.0	Overcast
02-08-2025	4.8	5.2	-1.6	Overcast

Note: Data retrieved from the Stantec Woodfibre site weather station.

From February 2 – February 8, the East Sedimentation Pond did not receive any contact water (Appendix A, Figure 2). Contact waters from Area 4100 sump were directed to the West Sedimentation Pond (Appendix A, Figure 3).

Routine operation of the East WWTP continued during the monitoring period. Contact waters from the concrete batch plant were periodically directed to the East WWTP for treatment, as well as water stored in the East Sedimentation Pond (Appendix A, Figure 2 and Figure 3). East WWTP treated effluent and East Sedimentation Pond water clarified through the E500GPM TSS settling system were recirculated to the East Sedimentation Pond each day during the monitoring period. The East Catchment did not discharge to Howe Sound February 2 – February 8. Daily water volumes processed by the East WWTP and the East TSS settling system (E500GPM) are provided in Appendix B (Table B-7).

West Sedimentation Pond water was clarified through the W500GPM settling system and recirculated to the West Sedimentation Pond on February 2 and February 3. The ESC TSS settling system was not operational during the monitoring period. The West Catchment did not discharge to Howe Sound February 2 – February 8. Daily clarified effluent volumes from the TSS settling systems are provided in Appendix C (Table C-5).

2. Monitoring Summary

The locations of the compliance and supplementary monitoring stations are shown on Figure 1. 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.

Compliance and supplementary monitoring stations have been established:

- Non-contact diversion ditch outlet monitoring stations (OUT-01, OUT-02, OUT-06, and OUT-11). East Creek water was temporarily diverted to OUT-11 on September 17 and is monitored at the inlet to temporary diversion (station SW-04), therefore OUT-11 is not currently monitored.
- Creek water monitoring stations for Woodfibre, Mill and East Creek (SW-01, SW-02, SW-03, SW-04, SW-07).
- Contact water monitoring locations (SP-E-IN, SP-E-NE, SP-E-NW, E500GPM-IN, E500GPM-OUT, WWTP-E-IN, WWTP-E-OUT, SP-W-IN, SP-W-W, SP-W-E, ESC-W-IN, ESC-W-OUT, W500GPM-IN and W500GPM-OUT.).
- Effluent compliance stations (SP-E-OUT and SP-W-OUT)
- Howe Sound reference and IDZ monitoring stations (WQR1, WQR2, IDZ-E1, IDZ-E2, IDZ-W1, and IDZ-W2).

The influent culverts for East and West Sedimentation Ponds are not yet operational and the associated influent stations defined in PE-111578 (SP-E-IN-1, SP-E-IN-2, SP-W-IN-1 and SP-W-IN-2) have been replaced with temporary influent monitoring stations SP-E-IN and SP-W-IN (East and West Sedimentation Pond, respectively).

Two flocculant-based TSS settling systems are used at the West Sedimentation Pond (ESC and W500GPM). Influent and effluent are monitored for each system at stations ESC-W-IN, ESC-W-OUT, W500GPM-IN and W500GPM-OUT. One TSS settling system (E500GPM) is used at the East Sedimentation Pond. The influent and effluent stations for this system are E500GPM-IN and E500GPM-OUT, respectively. The TSS settling system stations are supplemental to the PE- 111578 monitoring requirements and are monitored at the discretion of field staff.

Water quality was monitored at stations IDZ-E1, IDZ-E2, IDZ-W1, IDZ-W2, WWTP-E-IN, WWTP-E-OUT, SP-E-IN, E500GPM-IN, E500GPM-OUT, SP-W-IN, W500GPM-IN, and W500GPM-OUT during the monitoring period (February 2 – February 8). Sampling dates and parameters tested are summarized in Table 2.

Overall, the PE-111578 monitoring requirements that were applicable during the monitoring period (February 2 – February 8) were met.

Daily field parameters were not collected at effluent stations SP-E-OUT and SP-W-OUT (February 2 – February 8) since there was no effluent discharged from the authorized discharge locations during the monitoring period. Daily field parameters and a weekly analytical sample were not collected at the influent and effluent stations of the West WWTP (WWTP-W-IN and WWTP-W-OUT, respectively) as the West WWTP was not operational during the monitoring period.

Table 2: Summary of PE-111578 Monitoring Samples Collected February 2 – February 8.

Sampling Date	Sample	Description	Parameters Tested	Monitoring Frequency
February 2, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	WWTP-E-IN	East WWTP at the influent meter box	Field Parameters.	D
	WWTP-E-OUT	East WWTP at the effluent meter box		
	E500GPM-IN	East Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
	E500GPM-OUT	East Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	W500GPM-IN	West Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
	W500GPM-OUT	West Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		
	IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	Field and Physical Parameters, Total and Dissolved Metals	P
	IDZ-E2-0.5	Howe Sound IDZ station E2; 0.5 m below surface		
February 3, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	WWTP-E-IN	East WWTP at the influent meter box	Field Parameters.	D
	WWTP-E-OUT	East WWTP at the effluent meter box		
	E500GPM-IN	East Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
	E500GPM-OUT	East Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	W500GPM-IN	West Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
	W500GPM-OUT	West Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		
February 4, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	WWTP-E-IN	East WWTP at the influent meter box	Field Parameters.	D
	WWTP-E-OUT	East WWTP at the effluent meter box		
	E500GPM-IN	East Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
	E500GPM-OUT	East Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	W500GPM-IN	West Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
	W500GPM-OUT	West Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		
February 5, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	WWTP-E-IN	East WWTP at the influent meter box	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans.	D, W_1, W_2
	WWTP-E-OUT	East WWTP at the effluent meter box		
	E500GPM-IN	East Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, and VOCs.	P
	E500GPM-OUT	East Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	W500GPM-IN	West Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
	W500GPM-OUT	West Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		
February 6, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	WWTP-E-IN	East WWTP at the influent meter box	Field Parameters.	D
	WWTP-E-OUT	East WWTP at the effluent meter box	Field and Physical Parameters, Total and Dissolved Metals	D, P
	E500GPM-IN	East Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
	E500GPM-OUT	East Sedimentation Pond 500 GPM TSS settling system at the effluent meter box	Field and Physical Parameters, Total and Dissolved Metals	P
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	W500GPM-IN	West Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
	W500GPM-OUT	West Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		
February 7, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans.	D, W_1, W_2
	WWTP-E-IN	East WWTP at the influent meter box	Field Parameters.	D
	WWTP-E-OUT	East WWTP at the effluent meter box		
	E500GPM-IN	East Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
	E500GPM-OUT	East Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans.	D, W_1, W_2
	W500GPM-IN	West Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
	W500GPM-OUT	West Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		

Table 2 (continued): Summary of PE-111578 Monitoring Samples Collected February 2 – February 8.

Sampling Date	Sample	Description	Parameters Tested	Monitoring Frequency
February 7, 2025 (continued)	IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	Field and Physical Parameters.	W_3
	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		
	IDZ-W1-0.5	Howe Sound IDZ station W1; 0.5 m below surface		
	IDZ-W1-2m	Howe Sound IDZ station W1; 2 m below surface		
	IDZ-W1-SF	Howe Sound IDZ station W1; 2 m above the seafloor		
	IDZ-W2-0.5	Howe Sound IDZ station W2; 0.5 m below surface		
	IDZ-W2-2m	Howe Sound IDZ station W2; 2 m below surface		
	IDZ-W2-SF	Howe Sound IDZ station W2; 2 m above the seafloor		
February 8, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	WWTP-E-IN	East WWTP at the influent meter box	Field Parameters, Total and Dissolved Mercury.	D, P
	WWTP-E-OUT	East WWTP at the effluent meter box		
	E500GPM-IN	East Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Physical Parameters, Total and Dissolved Mercury.	P
	E500GPM-OUT	East Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	W500GPM-IN	West Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	D
	W500GPM-OUT	West Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		

Notes:
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.
W_1 – initial high frequency monitoring for physical parameters at WWTP and sedimentation pond influent and effluent stations.
W_2 – initial high frequency monitoring for all parameters at WWTP and sedimentation pond influent and effluent stations.
W_3 – initial high frequency monitoring for physical parameters at IDZ stations.
P – periodic monitoring for targeted parameters that is supplementary to PE-111578 requirements.

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, operational minimum discharge objectives (MDOs) that the WWTPs are currently being operated to meet, PE-111578 discharge limits, as well as Canadian, Federal and BC water quality guidelines (WQGs). All water quality data are recorded 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 are relevant for water quality interpretation.

Canadian, Federal and BC WQGs are not specified for dioxins and furans. The general term "dioxins and furans" refers to chlorinated dibenzo-*p*-dioxins and chlorinated dibenzofurans. A sub-set of 17 polychlorinated dibenzo-*p*-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) are typically evaluated for toxicity and the individual parameter concentrations are converted to toxic equivalent (TEQ) values that are summed and reported as a single PCDD/F TEQ parameter. To address uncertainties for results reported as not detected, two PCDD/F TEQ values are reported. A "lower-bound PCDD/F TEQ" is calculated assuming a concentration of zero for results reported as not detected, therefore, if all 17 of the individual compounds in the sub-set are not detected the lower-bound PCDD/F TEQ will equal zero. An "upper-bound PCDD/F TEQ" is calculated assuming a concentration equal to the detection limit for results reported as not detected. These two parameters span the range of possible TEQs if one or more of the sub-set of 17 individual PCDDs and PCDFs are reported as not detected.

The BC WQG for total mercury is a sample-specific calculated value that is based on the concentration of methylmercury in a sample. Although an approved BC WQG for the protection of aquatic life for methylmercury has not been explicitly established, the BC Ambient Water Quality Guidelines for Mercury Overview Report indicates the total mercury WQG is derived from a methylmercury concentration threshold of 0.0001 µg/L (0.1 ng/L) that is set at a concentration that protects fish from mercury bioaccumulation that may harm wildlife that consumes fish. Therefore, if methylmercury results are reported, the 0.0001 µg/L value is presented as a methylmercury WQG to support the interpretation of total mercury and methylmercury results.

3.2 Summary of Reported Results

Field measurements and analytical results available at the time of reporting for samples collected during the monitoring period (February 2 – February 8) and for other samples that have not been previously reported are listed below in Table 3. Testing for methylmercury, dioxins and furans typically requires up to four weeks to complete. Analytical results not available at the time of reporting will be included in future weekly reports when testing is completed. Reporting of results is pending for the following samples and parameters:

- IDZ-W1, IDZ-W2, and WQR2 collected January 9 (dioxins and furans)
- WWTP-E-IN, WWTP-E-OUT, SP-W-IN, and SP-W-OUT collected January 14 (dioxins and furans)
- SP-E-IN and SP-E-OUT collected January 16 (dioxins and furans)
- WWTP-E-IN and WWTP-E-OUT collected January 24 (dioxins and furans)
- SW-01, SW-02, and SW-03 collected January 24 (dioxins and furans)
- SW-04 and SW-07 collected January 25 (dioxins and furans)
- WWTP-E-IN and WWTP-E-OUT collected January 28 (dioxins and furans)
- SP-W-IN collected January 30 (dioxins and furans)
- SP-E-OUT collected January 31 (dioxins and furans)
- OUT-01 and OUT-02 collected January 31 (methylmercury)
- SP-W-OUT collected February 1 (dioxins and furans)
- OUT-06 collected February 1 (field and all analytical parameters)
- WWTP-E-IN, WWTP-E-OUT, E500GPM-IN, and E500GPM-OUT collected February 5 (all analytical parameters)
- SP-E-IN and SP-W-IN collected February 7 (methylmercury, dioxins and furans)
- IDZ-E1, IDZ-E2, IDZ-W1, and IDZ-W2 collected February 7 (field and all analytical parameters)

Table 3: Summary of Analytical Results Included in Weekly Discharge and Compliance Report #50.

Sample	Description	Sampling Date	Parameters Reported
SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound	December 4, 2024	Acute Toxicity
SP-E-OUT	East Sedimentation Pond clarified and/or treated effluent discharge to Howe Sound	December 5, 2024	Acute Toxicity
IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	January 8, 2025	Dioxins and Furans
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		
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		
SW-01	Lower Reach of Woodfibre Creek (near the mouth)	January 24, 2025	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, VOCs, and Methylmercury.
SW-02	Upper Reach of Mill Creek (upstream of third bridge)		
SW-03	Lower Reach of Mill Creek (near the mouth, in the estuarine zone)		
SW-04	Lower Reach of East Creek (near the outlet to the outfall culvert)	January 25, 2025	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, VOCs, and Methylmercury.
SW-07	Upstream Mill Creek (at the diversion inlet)		
WWTP-E-IN	East WWTP at the influent meter box	January 28, 2025	Methylmercury
WWTP-E-OUT	East WWTP at the effluent meter box		
IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface		Field and Physical Parameters.
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		
IDZ-W1-0.5	Howe Sound IDZ station W1; 0.5 m below surface		
IDZ-W1-2m	Howe Sound IDZ station W1; 2 m below surface		
IDZ-W1-SF	Howe Sound IDZ station W1; 2 m above the seafloor		
IDZ-W2-0.5	Howe Sound IDZ station W2; 0.5 m below surface		
IDZ-W2-2m	Howe Sound IDZ station W2; 2 m below surface		
IDZ-W2-SF	Howe Sound IDZ station W2; 2 m above the seafloor		
SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	January 29, 2025	Methylmercury, Dioxins and Furans
SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	January 30, 2025	Methylmercury
SP-E-OUT	East Sedimentation Pond clarified and/or treated effluent discharge to Howe Sound, collected at sampling port	January 31, 2025	Methylmercury
OUT-01	Non-contact water diversion ditch outlet		Field, Physical and General Parameters, Total and Dissolved Metals
OUT-02	Non-contact water diversion ditch outlet		
SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port	February 1, 2025	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, VOCs, and Methylmercury.
IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	February 2, 2025	Field and Physical Parameters, Total and Dissolved Metals
IDZ-E2-0.5	Howe Sound IDZ station E2; 0.5 m below surface		
WWTP-E-OUT	East WWTP at the effluent meter box	February 6, 2025	Field and Physical Parameters, Total and Dissolved Metals
E500GPM-OUT	East Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		
SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	February 7, 2025	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, and VOCs.
SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1		
WWTP-E-IN	East WWTP at the influent meter box	February 8, 2025	Field Parameters, Total and Dissolved Mercury.
WWTP-E-OUT	East WWTP at the effluent meter box		
E500GPM-IN	East Sedimentation Pond 500 GPM TSS settling system at the influent meter box		
E500GPM-OUT	East Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		

3.3 East Catchment

The East Catchment water quality monitoring results for stations at the East Sedimentation Pond, East WWTP and the authorized discharge location are discussed in this section. Results for the sedimentation pond and authorized discharge location are screened against PE-111578 discharge limits. Parameters without a discharge limit are screened against Canadian, Federal and BC WQGs for the protection of marine water aquatic life. East WWTP monitoring results are screened against operational MDOs which are equivalent to the PE-111578 discharge limits and the lowest applicable WQGs for parameters without discharge limits. The screened water quality results for analytical samples available at the time of reporting and for field parameters collected during the monitoring period are presented in Appendix B. Exceedances of PE-111578 discharge limits and WQGs in samples of effluent discharged to Howe Sound and results received for methylmercury, dioxins and furans are summarized below.

During the monitoring period (February 2 – February 8), the East Catchment did not discharge to Howe Sound.

Field measurements were collected February 2 – February 8 at multiple influent and effluent locations, as outlined in Section 2, and are tabulated in Appendix B, Table B-6. Analytical samples collected on February 6 (stations WWTP-E-OUT and E500GPM-OUT), February 7 (station SP-E-IN), and February 8 (stations WWTP-E-IN, WWTP-E-OUT, E500GPM-IN, and E500GPM-OUT) were available at the time of reporting. Only field and physical parameters, total and dissolved metals were collected February 6 and only field and physical parameters, total and dissolved mercury were collected February 7. Screening results for East Catchment contact water influent and effluent quality are tabulated in Table B-1 through Table B-3 of Appendix B.

Field pH was above the upper limit of the MDO in the East WWTP effluent samples (WWTP-E-OUT) collected February 5 and February 6. East WWTP treated effluent was recirculated to the East Sedimentation Pond and did not discharge to Howe Sound on February 5 nor on February 6. This item is tracked in Table 6.

Methylmercury analytical results were available at the time of reporting for WWTP influent and effluent (WWTP-E-IN and WWTP-E-OUT, respectively) collected January 28, East Sedimentation Pond influent collected January 29, and effluent discharged at SP-E-OUT on January 31 (as discussed in Report #49). Methylmercury was detected at 0.000151 and 0.000131 µg/L in the SP-E-OUT monitoring and duplicate samples (Table 4), respectively, and was above the WQG (0.0001 µg/L, refer to Section 3.1). Methylmercury was detected at 0.000108 µg/L in the WWTP-E-OUT sample and was above the WQG. The East WWTP effluent was recirculated to the East Sedimentation Pond and did not discharge to Howe Sound on January 28. Results are tabulated in Appendix B, Table B-4.

Dioxin and furan results were reported for East Sedimentation Pond influent (station SP-E-IN) on January 29 (as discussed in Report #49). Results are presented in Appendix B, Table B-5.

Table 4:
Summary of Parameters Exceeding WQGs in Effluent Discharged from SP-E-OUT for Field and Analytical Results Available at the Time of Reporting

Parameter	Units	WQG[1]	N	N >WQG	Commentary
Methylmercury	µg/L	0.0001	2	2	Methylmercury measured in the monitoring and duplicate samples at station SP-E-OUT on January 31 (0.000151 and 0.000131 µg/L, respectively) was 1.5 and 1.3 times greater than the WQG, respectively.

N = number of samples.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

Acute toxicity test results for the December 5 SP-E-OUT sample were available at the time of reporting. Undiluted (100%) effluent was tested for acute toxicity to rainbow trout and to the invertebrate *Daphnia magna*. An effluent sample is considered to have passed if 50% or more of the test organisms survive after 96 hours of exposure for the rainbow trout test, and after 48 hours of exposure for the *Daphnia magna* test, as per the BC Laboratory Manual. Results showed 100% survival of rainbow trout and *Daphnia magna* after exposure to the SP-E-OUT sample, indicating the effluent passed the acute toxicity test and the East Sedimentation Pond effluent sample was not acutely toxic to these organisms.

3.4 West Catchment

The West Catchment water quality monitoring results for stations at the West Sedimentation Pond, the TSS settling systems (ESC and W500GPM) and West WWTP monitoring stations, and the authorized discharge location are discussed in this section. Results for sedimentation pond and TSS settling system influent and effluent stations are screened against PE-111578 discharge limits. Parameters without a discharge limit are screened against Canadian, Federal and BC WQGs for the protection of marine water aquatic life. The screened water quality results for analytical samples and field parameters are presented in Appendix C. Operation of the West WWTP is currently suspended (refer to Section 1.1) and monitoring results are therefore not available. Exceedances of PE-111578 discharge limits and WQGs in samples of effluent discharged to Howe Sound and results received for methylmercury are summarized below.

During the monitoring period (February 2 – February 8), the West Catchment did not discharge to Howe Sound.

Field measurements were collected February 2 – February 8 at multiple influent and effluent locations, as outlined in Section 2, and are tabulated in Appendix C, Table C-4. Analytical samples collected on February 1 (SP-W-OUT, as discussed in Report #49) and February 7 (SP-W-IN) were

available at the time of reporting. Screening results for West Catchment contact water influent and effluent quality are tabulated in Table C-1 and Table C-2 of Appendix C.

Field measurements and analytical results monitored at station SP-W-OUT on February 1 met PE-111578 discharge limits and WQGs.

Methylmercury analytical results were available at the time of reporting for West Sedimentation Pond influent (station SP-W-IN) collected January 30 and effluent discharged at SP-W-OUT on February 1 (as discussed in Report #49). The methylmercury concentration was 0.000028 µg/L in effluent discharged at SP-W-OUT on February 1 and met the WQG for methylmercury (Appendix C, Table C-3).

Acute toxicity test results for the December 4 SP-W-OUT sample were available at the time of reporting. Undiluted (100%) effluent was tested for acute toxicity to rainbow trout and to the invertebrate *Daphnia magna*. An effluent sample is considered to have passed if 50% or more of the test organisms survive after 96 hours of exposure for the rainbow trout test, and after 48 hours of exposure for the *Daphnia magna* test, as per the BC Laboratory Manual. Results showed 100% survival of rainbow trout and *Daphnia magna* after exposure to the SP-W-OUT sample, indicating the effluent passed the acute toxicity test and the East Sedimentation Pond effluent sample was not acutely toxic to these organisms.

3.5 Non-Contact Water Diversion Ditch Outlets

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

East Creek was temporarily diverted to OUT-11 on September 17 to facilitate replacement of the OUT-12 culvert through which East Creek previously discharged. Only East Creek water is flowing through the OUT-11 culvert. East Creek is monitored at freshwater receiving environment station SW-04 and station OUT-11 is not monitored while diversion is in place.

Analytical results were available at the time of reporting for the January 31 non-contact water diversion ditch outlet samples collected at stations OUT-01 and OUT-02 (as discussed in Report #49). Parameter concentrations met WQGs except total aluminum, dissolved copper and dissolved zinc (Table 5).

Table 5:
Summary of Parameters Exceeding WQGs at Non-Contact Water Diversion Ditch Outlets

Parameter	Units	WQG	N	N >WQG	Commentary
T-Al	mg/L	0.11 (OUT-01) 0.068 (OUT-02)	2	2	The total aluminum concentrations measured at OUT-01 (0.112 mg/L) and OUT-02 (0.206 mg/L) on January 31 were 1.0 and 3.0 times greater than the calculated long-term WQG.
D-Cu	mg/L	0.00044 (OUT-01) 0.00025 (OUT-02)	2	2	The dissolved copper concentrations measured at OUT-01 (0.00083 mg/L) and OUT-02 (0.00048 mg/L) on January 31 were both 1.9 times greater than the calculated long-term WQG.
D-Zn	mg/L	0.00589 (OUT-01)	2	1	The dissolved zinc concentration measured at OUT-01 (0.0459 mg/L) on January 31 was 7.8 and 2.5 times greater than the calculated long-term and short-term WQGs, respectively.

N = number of samples.
Non-detect results are screened using the detection limit value.

3.6 Freshwater and Estuarine Water Receiving Environment

Freshwater and estuarine water receiving environment samples are screened against Canadian, Federal and BC WQGs for the protection of freshwater and estuarine 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 a possible indicator of project influence. The analytical results, field parameters, and WQGs are summarized in Appendix E (freshwater) and Appendix F (estuarine).

Analytical results were available at the time of reporting for freshwater and estuarine water samples collected near the mouths of Woodfibre and Mill Creek (stations SW-01 and SW-02, respectively) and the Mill Creek Estuary (station SW-03) on January 24, as well as samples collected near the mouth of East Creek (station SW-04) and upstream on Mill Creek (station SW-07) on January 25 (as discussed in Report #48).

Parameter concentrations met WQGs except total aluminum, dissolved copper and dissolved zinc in one or more samples. Total aluminum was above the long-term WQG in samples collected from SW-01 (0.130 mg/L) and SW-07 (0.0383 mg/L). Dissolved copper was above the long-term WQG at Woodfibre Creek (0.00023 mg/L) and at East Creek (0.00034 mg/L). Dissolved zinc was above the long-term WQG at East Creek (0.0026 mg/L).

The observed concentrations of total aluminum, dissolved copper, and dissolved zinc were within concentration ranges observed in the pre-construction baseline monitoring program for freshwater and estuarine water receiving environment stations. The January 25 sample collected from upstream Mill Creek (station SW-07) represents background concentrations in Mill Creek; therefore, the total aluminum concentration measured at SW-07 is not flagged as an exceedance.

Methylmercury results were available at the time of reporting for freshwater and estuarine water samples collected January 24 and 25 (as discussed in Report #48). For all freshwater and estuarine water stations, the methylmercury concentrations ranged from <0.000020 to 0.000023 µg/L in all samples. Methylmercury results met the WQG. The corresponding total mercury results also met WQGs. Results are tabulated in Appendix E, Table E-2 (freshwater) and Appendix F, Table F-2 (estuarine).

3.7 Marine Water Receiving Environment

Marine water receiving environment samples are screened against Canadian, Federal and BC 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 or reference stations are considered to represent the natural condition of the water and not flagged as a possible indicator of project influence. Similarly, WQG exceedances at marine reference stations are considered to represent background conditions that are not influenced by the project. It is expected that samples collected within the IDZ (*i.e.,* mixing zone) defined in PE-111578 for the authorized discharge locations may have parameter concentrations above baseline or background (*i.e.,* reference station) concentrations due to project influence. The analytical results, field parameters and WQGs are summarized in Appendix G.

Analytical results and field measurements were available at the time of reporting for marine water samples collected at 0.5 and 2 m below the water surface and 2 m above the seafloor on January 28 at IDZ-E1, IDZ-E2, IDZ-W1, and IDZ-W2 (as discussed in Report #49) and samples collected at 0.5 m below the water surface on February 2 at IDZ-E1 and IDZ-E2. Only field and physical parameters were collected on January 28 and only field and physical parameters, total and dissolved metals were collected February 2. Parameter concentrations met WQGs except dissolved oxygen and total boron in some samples (Appendix G; Tables G-1 through G-3).

In the marine samples collected 2 m above the seafloor on January 28 at IDZ-E1, IDZ-E2, IDZ-W1, and IDZ-W2, dissolved oxygen was below the lower limit of the WQG (<8 mg/L) and ranged from 6.61 to 7.49 mg/L. Total boron was above the WQG (1.2 mg/L) and ranged from 3.19 to 3.64 mg/L in samples collected February 1 at IDZ-E1 and IDZ-E2 at 0.5 m below the water surface. Low concentrations of dissolved oxygen and elevated concentrations of total boron are indicative of influence from the deeper saline waters in the northern basin of Howe Sound and are a natural condition of the marine water at the WDA monitoring stations. The dissolved oxygen and total boron concentrations observed at the IDZ monitoring stations are within concentrations that have been observed in the pre-construction baseline monitoring program or within background ranges observed at marine reference stations and are therefore not attributed to project influence.

Dioxins and furans analytical results were available at the time of reporting for marine samples collected from 0.5 and 2 m below the water surface and 2 m above the seafloor at stations IDZ-E1, IDZ-E2, and marine reference station WQR1 on January 8 (as discussed in Weekly Report #46). For all samples, the lower and upper bound PCDD/F TEQ concentrations ranged from 0 to 0.00128 pg/L, and 0.744 to 2.45 pg/L, respectively. The lower and upper bound PCDD/F TEQ concentrations were within the concentration ranges observed in the baseline monitoring program or within background ranges observed at marine reference stations. Results are tabulated in Appendix G, Table G-4.

4. Quality Control

This section presents the results of the quality control (QC) evaluation for the PE-111578 weekly report (Table 6). The evaluation includes a review of field and lab QC, completeness of the weekly report (*e.g.*, pending data), completeness of the monitoring program, confirmation of recordkeeping, evaluation of compliance and review of water management activities. Items flagged for follow-up in Section 3 are also tracked in Table 6. Any items flagged for follow-up are carried forward to future reports until they are closed.

Table 6: Weekly Report QC Evaluations and Ongoing Items

QC Procedure	Observation	Investigation/Resolution
Reporting Period (February 2 – February 8, Report #50)		
Authorized Works and Monitoring Program Evaluation	The authorized works and monitoring stations have not been established as described in PE-111578.	The PE-111578 authorized works were under construction during the reporting period. The East and West Sedimentation Ponds and WWTPs have been constructed. The sedimentation pond conveyance ditches have not been constructed and influent culverts have not been activated, and the associated influent monitoring stations have not been established. Temporary outfalls are used for the East and West authorized discharge locations until the permanent structures are completed. Operation of the West WWTP has been suspended since September 25, 2024, and the plant has been repurposed to evaluate alternative treatment processes. The lower reach of East Creek has been temporarily diverted through OUT-11 outfall since September 17, 2024, to facilitate replacement of the East Creek outfall culvert (OUT-12). East Creek is monitored at SW-04 therefore monitoring at OUT-11 has been suspended. As communicated to BCER, the East Catchment discharge pathway for authorized discharge location SP-E-OUT was reconfigured on October 28, 2024, to direct sedimentation pond water to the East WWTP and to discharge East WWTP treated effluent. On November 28 and December 4, 2024, TSS settling systems were commissioned for use at the West and East Sedimentation Ponds, respectively, and are configured to discharge the clarified sediment pond water to Howe Sound. This item remains open.
WWTP Performance Evaluation	Field pH, T-Cu, T-Hg, T-Zn, and hexavalent Cr above the MDO	This item was first noted in Report #46 (January 8 sample) and has been updated with January 14 results (Report #47), January 24 and January 28 results (Report #49), and February 5 and 6 results (this report). The total copper concentration was 0.00809, 0.00595, 0.00895, and 0.00518 mg/L in samples collected at WWTP-E-OUT on January 8, 14, 24, and 28, respectively. The total mercury concentrations were 0.0000355 and 0.000185 mg/L in samples collected on January 24 and 30, the total zinc concentration was 0.0137 mg/L in the sample collected on January 24, and hexavalent chromium concentrations were 0.00197 and 0.00166 mg/L in samples collected January 24 and 28 at WWTP-E-OUT. Field pH was 9.1 and 9.2 in samples collected at WWTP-E-OUT on February 5 and 6, respectively. Review of possible causes is ongoing. The effluent discharged to Howe Sound at SP-E-OUT met the discharge limits on January 8. East WWTP effluent was routed to the pre-discharge holding tank and did not discharge to Howe Sound on January 14. East WWTP effluent was recirculated to the East Sedimentation Pond on January 24 through January 30 and February 5 and 6. This item remains open.
Pending Data	Analytical results not reported.	Analytical results for samples collected February 5 and 7 were not complete at the time of Report #50 preparation. Methylmercury, dioxin and furans results for samples collected February 7 were not complete at the time of Report #50 preparation. The pending results will be included in future weekly reports when available. This item remains open.
Ongoing Items from Previous Weekly Reports		
Report #46: Pending Data	Analytical results not reported.	Dioxins and furans results for marine receiving environment samples collected January 8 are discussed in Section 3.7 of Report #50. Dioxins and furans results for marine receiving environment samples collected January 9 were not complete at the time of Report #50 preparation. The pending results will be included in future weekly reports when available. This item remains open.
Report #47: Pending Data	Analytical results not reported.	Dioxins and furans results for samples collected January 14 and 16 were not complete at the time of Report #50 preparation. The pending results will be included in future weekly reports when available. This item remains open.
Report #48: Pending Data	Analytical results not reported.	Analytical results for samples collected January 24 and 25 are discussed in Section 3.6 of Report #50. Dioxins and furans results for samples collected January 24 and 25 were not complete at the time of Report #50 preparation. The pending results will be included in future weekly reports when available. This item remains open.
Report #49: Non-Compliant Effluent	Non-compliant discharge from the East Catchment on January 31.	Total copper measured in one of four replicate samples collected at station SP-E-OUT on January 31 was 1.2 times above the PE-111578 discharge limit. These results are included in an enhanced sampling and testing program for total copper and zinc that is ongoing. Results to date suggest copper contamination is introduced in the sampling and/or testing process; however, the source has not yet been isolated. BCER was notified on February 3. Review of the non-compliance is underway, and outcomes will be communicated to BCER. This item remains open.
Report #49: Data QC	D-Cu and D-Zn greater than T-Cu and T-Zn	The dissolved copper and zinc concentrations were 2.2 to 2.5 times greater than the total copper concentration and 1.5 to 1.8 times the total zinc concentrations in two of four replicate samples collected at SP-E-OUT on January 31. It is suspected that the dissolved metal sample bottles were contaminated during sample processing. Enhanced sampling and testing for copper and zinc is ongoing to identify specific sources of contamination. This item remains open.
Report #49: Pending Data	Analytical results not reported.	Analytical results for samples collected January 28, 31, and February 1 are discussed in Sections 3.7, 3.5, and 3.4, respectively, of Report #50. Methylmercury results for samples collected January 28, 29, 30, 31 and dioxins and furans results for the sample collected January 29 are discussed in Sections 3.3 and 3.4 of Report #50. Analytical results for non-contact water diversion ditch outlet sample (OUT-06) collected February 1 were not complete at the time of Report #50 preparation. Methylmercury results for samples collected January 31 and dioxin and furans results for samples collected January 28, 30, 31, and February 1 were not complete at the time of Report #50 preparation. The pending results will be included in future weekly reports when available. This item remains open.

Notes:

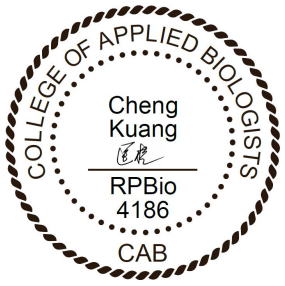
Result QA/QC screening includes the evaluation of field and lab QC results, comparison of total and dissolved metal results and review for modified detection limits.
Pending data are outstanding results from monitoring samples reported in the current or previous weekly reports.
Authorized works and monitoring program evaluation is an assessment of the completeness of the authorized works and monitoring program compared to PE-111578 specified or implied requirements.
WWTP performance evaluation is an assessment of WWTP effluent quality compared to operational MDOs.
Data QC indicates an evaluation of data trends or inter-parameter relationships that suggest a test result may not be representative of water quality at the time of monitoring.
Non-compliant discharge indicates exceedance of a discharge limit or a discharge that bypasses the sedimentation pond discharge location.
Potential project influence is an assessment that water quality at creek and Howe Sound baseline stations are above the baseline concentration range and may indicate project influence at these stations.

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, and Woodfibre LNG staff are conducted as needed to confirm the information presented in this report.

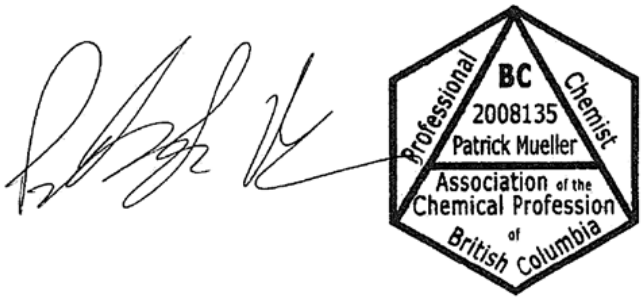
Regards,

LORAX ENVIRONMENTAL SERVICES LTD.



Holly Pelletier, B.Sc., GIT.
Environmental Geoscientist

Cheng Kuang, M.Sc., RPBio.
Environmental Scientist



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

Appendix A: Figures and Site Images

LEGEND

- Freshwater Monitoring Station
- Marine Water Monitoring Station
- Certified Project Area
- Watercourse
- East Creek Temporary Diversion
- Non Contact Ditch (Under Construction)
- Outfall
- Clean Water Diversion Discharge Station
- Sedimentation Pond Monitoring Stations (Water Quality)
- Wastewater Treatment Plant (WWTP)

DATE SAVED:	Feb 14, 2025
DRAWN BY:	DM
REVIEWED:	PM
VERSION:	1

Coordinate System: NAD 1983 UTM Zone 10N
Projection: Transverse Mercator
Datum: North American 1983
Units: Metre

1:6,000

0 50 100 150 Metres

CLIENT: Woodfibre LNG

LORAX ENVIRONMENTAL

PROJECT:

Woodfibre LNG Project Construction Phase

TITLE: Completed or Under Construction Water Management Facilities and Established PE-111578 Monitoring Stations (February 8, 2025)

PROJECT #: A633-7

FIGURE: 1

P:\@Drafting\Woodfibre\Drafting Figures\APRX\WLNG Construction Phase 2024\WLNG Construction Phase 2024 - Weekly Reporting.aprx Figure 1 Monitoring and Compliance Locations

Figure 2: East Catchment contact water management facilities (February 2 – February 8).

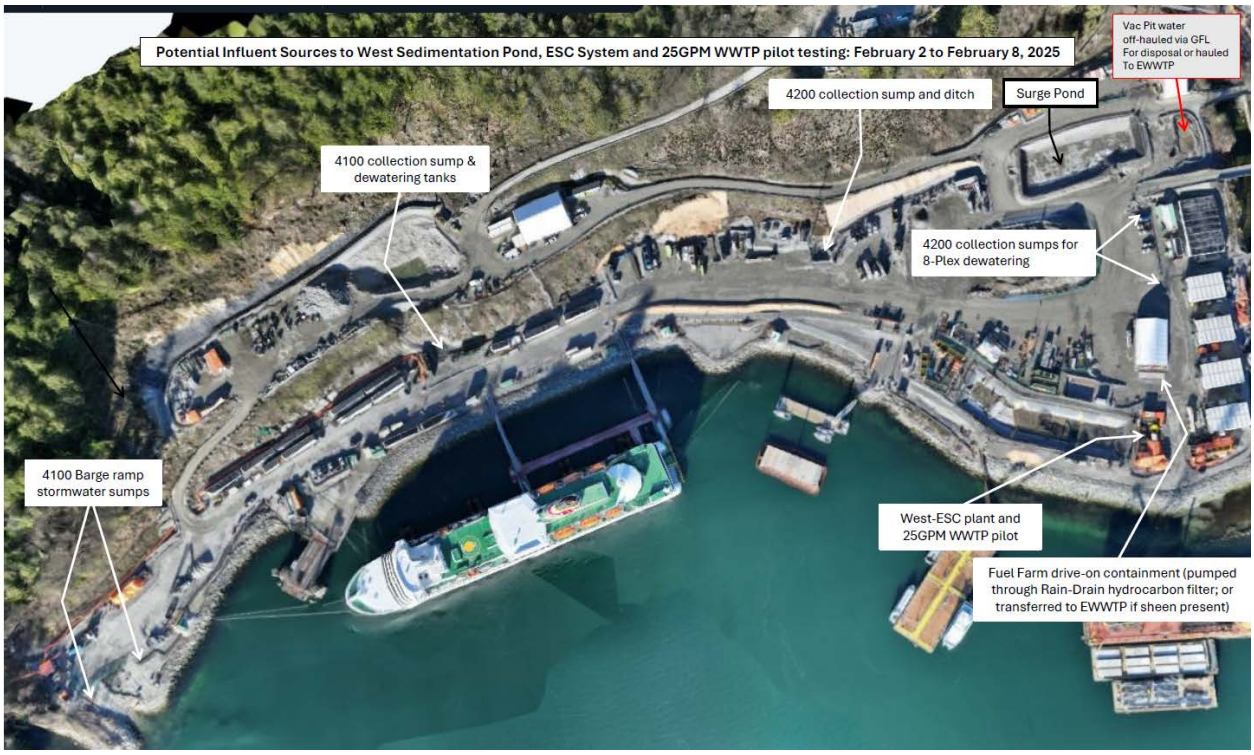


Figure 3: West Catchment contact water management facilities (February 2 – February 8).

Figure 4: Aerial view of the East Sedimentation Pond (February 7, 2025). The East WWTP is located on the left side and the E500GPM TSS settling system is situated along the bottom edge of the pond.

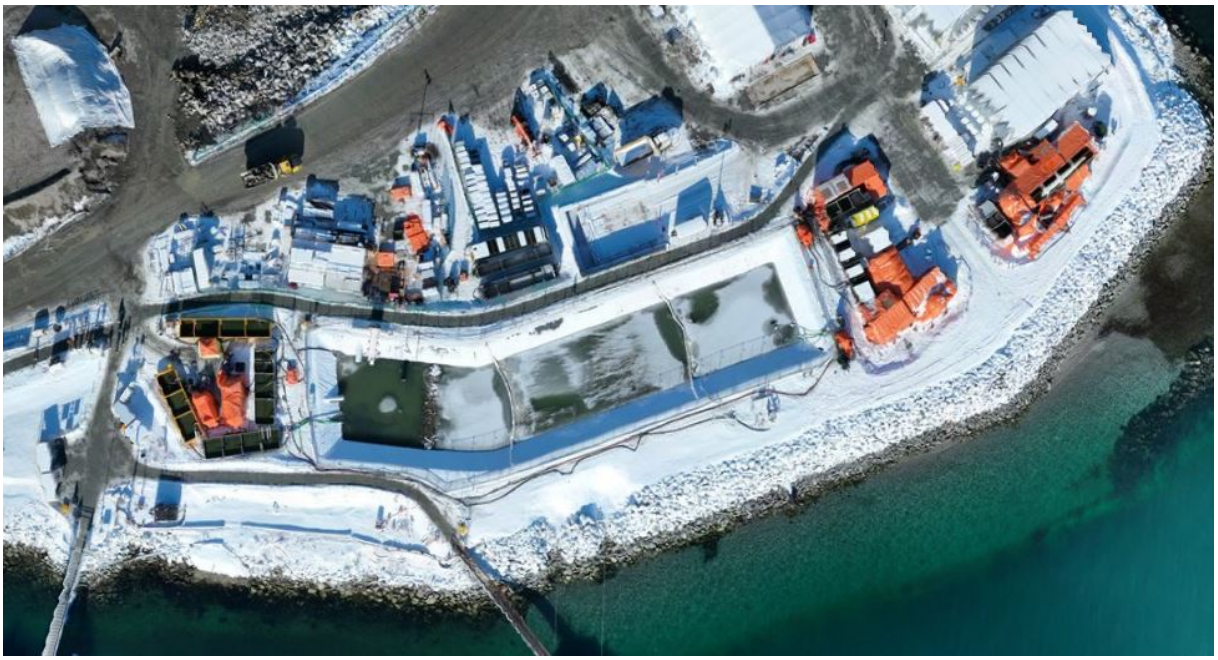


Figure 5: Aerial view of the West Sedimentation Pond (February 7, 2025). The TSS settling systems are located to the left (W500GPM) and right (ESC) of the pond.

Appendix B: East Catchment Monitoring Results

Table B-1: East Catchment Contact Water Influent Analytical Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1]		PE-111578 Discharge Limit	Station SP-E-IN	Station WWTP-E-IN	Station E500GPM-IN
					Influent	Influent	Influent
					SP-E-IN	WWTP-E-IN	E500GPM-IN
					VA25A2781-002	VA25A2805-001	VA25A2805-003
		Long Term	Short Term		2025-02-07 15:39	2025-02-08 12:35	2025-02-08 12:22
General Parameters							
pH - Field	pH units	- [2]	-	5.5 - 9.0	8.3	8.5	8.5
Conductivity - Field	µS/cm	-	-	-	1479	1518	1522
Temperature - Field	°C	-	-	-	1.9	2.7	2.9
Salinity - Field	ppt	-	-	-	1.35	1.35	1.35
Turbidity - Field	NTU	-	-	-	1.11	2.73	0.91
TSS	mg/L	-	-	25 [6]	<3.0	-[7]	-[7]
Dissolved Oxygen - Field	mg/L	≥8	-	-	15.14	14.58	15.86
Anions and Nutrients							
Sulphate	mg/L	-	-	-	747	-[7]	-[7]
Chloride	mg/L	-	-	-	19.2	-[7]	-[7]
Fluoride	mg/L	-	1.5	-	<0.400	-[7]	-[7]
Ammonia (N-NH_3)	mg/L	1.7-2.7 [3]	11-18 [3]	-	<0.0050	-[7]	-[7]
Nitrite (N-NO_2)	mg/L	-	-	-	0.0338	-[7]	-[7]
Nitrate (N-NO_3)	mg/L	3.7	339	-	0.396	-[7]	-[7]
Total Metals							
Aluminum, total (T-Al)	mg/L	-	-	-	0.0751	-[7]	-[7]
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00136	-[7]	-[7]
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00292	-[7]	-[7]
Barium, total (T-Ba)	mg/L	-	-	-	0.00557	-[7]	-[7]
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000100	-[7]	-[7]
Boron, total (T-B)	mg/L	1.2	-	-	<0.050	-[7]	-[7]
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000250	-[7]	-[7]
Chromium, total (T-Cr)	mg/L	-	-	-	<0.00250	-[7]	-[7]
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00050	-[7]	-[7]
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	<0.00250	-[7]	-[7]
Iron, total (T-Fe)	mg/L	-	-	-	<0.050	-[7]	-[7]
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	<0.000250	-[7]	-[7]
Manganese, total (T-Mn)	mg/L	-	-	-	0.0158	-[7]	-[7]
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	0.0000159	0.0000116	0.0000115
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.11	-[7]	-[7]
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00250	-[7]	-[7]
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000622	-[7]	-[7]
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000050	-[7]	-[7]
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000050	-[7]	-[7]
Uranium, total (T-U)	mg/L	-	-	-	0.0321	-[7]	-[7]
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	<0.00250	-[7]	-[7]
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	<0.0150	-[7]	-[7]
Hexavalent Chromium, total	mg/L	0.0015	-	-	0.00060	-[7]	-[7]
Dissolved Metals							
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000250	-[7]	-[7]
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00128	-[7]	-[7]
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.050	-[7]	-[7]
Lead, dissolved (D-Pb)	mg/L	-	-	-	<0.000250	-[7]	-[7]
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.0136	-[7]	-[7]
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00250	-[7]	-[7]
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.17	-[7]	-[7]
Vanadium, dissolved (D-V)	mg/L	-	-	-	<0.00250	-[7]	-[7]
Zinc, dissolved (D-Zn)	mg/L	-	-	-	<0.0050	-[7]	-[7]
Polycyclic Aromatic Hydrocarbons (PAHs)							
Acenaphthene	mg/L	0.006	-	-	<0.000010	-[7]	-[7]
Acridine	mg/L	-	-	-	<0.000010	-[7]	-[7]
Anthracene	mg/L	-	-	-	<0.000010	-[7]	-[7]
Benz(a)anthracene	mg/L	-	-	-	<0.000010	-[7]	-[7]
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.0000050	-[7]	-[7]
Chrysene	mg/L	0.0001	-	-	<0.000010	-[7]	-[7]
Fluoranthene	mg/L	-	-	-	<0.000010	-[7]	-[7]
Fluorene	mg/L	0.012	-	-	<0.000010	-[7]	-[7]
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010	-[7]	-[7]
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010	-[7]	-[7]
Naphthalene	mg/L	0.001	-	-	<0.000050	-[7]	-[7]
Phenanthrene	mg/L	-	-	-	<0.000020	-[7]	-[7]
Pyrene	mg/L	-	-	-	<0.000010	-[7]	-[7]
Quinoline	mg/L	-	-	-	<0.000050	-[7]	-[7]
Volatile Organic Compounds (VOCs)							
Benzene	mg/L	0.11	-	-	<0.00050	-[7]	-[7]
Ethylbenzene	mg/L	0.25	-	-	<0.00050	-[7]	-[7]
Methyl-tert-butyl-ether	mg/L	5	0.44	-	<0.00050	-[7]	-[7]
Styrene	mg/L	-	-	-	<0.00050	-[7]	-[7]
Toluene	mg/L	0.215	-	-	<0.00040	-[7]	-[7]
Total Xylenes	mg/L	-	-	-	<0.00050	-[7]	-[7]
Chlorobenzene	mg/L	0.025	-	-	<0.00050	-[7]	-[7]
1,2-Dichlorobenzene	mg/L	0.042	-	-	<0.00050	-[7]	-[7]

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 PE-111578 East Sedimentation Pond Discharge Limit.
The East Sedimentation Pond did not discharge during the monitoring period (February 2 – February 8).
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 27E and 27F in BC WQG guidance document.
[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 ≤0.5% of total Hg, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.
[6] The PE-111578 discharge limit for TSS is 25 mg/L under dry conditions and 75 mg/L for Wet Conditions. Wet Conditions did not apply during the monitoring period.
[7] Only field parameters and total and dissolved mercury were tested for samples collected February 8 at WWTP-E-IN and E500GPM-IN.

Table B-2: East Catchment Effluent Analytical Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1]		PE-111578 Discharge Limit	Station WWTP-E-OUT	Station WWTP-E-OUT	Station E500GPM-OUT	Station E500GPM-OUT
					Effluent	Effluent	Effluent	Effluent
					WWTP-E-OUT	WWTP-E-OUT-Lab [8]	E500GPM-OUT	E500GPM-OUT-Lab [8]
					VA25A2605-001	VA25A2605-002	VA25A2605-003	VA25A2605-004
		Long Term	Short Term		2025-02-06 6:39	2025-02-06 6:31	2025-02-06 6:44	2025-02-06 6:46
General Parameters								
pH - Field	pH units	- [2]	-	5.5 - 9.0	9.0	-[8]	8.9	-[8]
Conductivity - Field	µS/cm	-	-	-	1544	-[8]	1480	-[8]
Temperature - Field	℃	-	-	-	4.5	-[8]	3.0	-[8]
Salinity - Field	ppt	-	-	-	1.30	-[8]	1.30	-[8]
Turbidity - Field	NTU	-	-	-	2.43	-[8]	0.66	-[8]
TSS	mg/L	-	-	25 [6]	<3.0	-[8]	<3.0	-[8]
Dissolved Oxygen - Field	mg/L	≥8	-	-	13.20	-[8]	14.27	-[8]
Anions and Nutrients								
Sulphate	mg/L	-	-	-	-[7]	-[8]	-[7]	-[8]
Chloride	mg/L	-	-	-	-[7]	-[8]	-[7]	-[8]
Fluoride	mg/L	-	1.5	-	-[7]	-[8]	-[7]	-[8]
Ammonia (N-NH_3)	mg/L	0.44-0.69 [3]	2.9-4.6 [3]	-	-[7]	-[8]	-[7]	-[8]
Nitrite (N-NO_2)	mg/L	-	-	-	-[7]	-[8]	-[7]	-[8]
Nitrate (N-NO_3)	mg/L	3.7	339	-	-[7]	-[8]	-[7]	-[8]
Total Metals								
Aluminum, total (T-Al)	mg/L	-	-	-	0.0670	0.0638	0.0637	0.0624
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00134	0.00134	0.00139	0.00131
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00320	0.00316	0.00311	0.00300
Barium, total (T-Ba)	mg/L	-	-	-	0.00460	0.00465	0.00476	0.00510
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000040	<0.000040	<0.000040	<0.000040
Boron, total (T-B)	mg/L	1.2	-	-	<0.020	<0.020	<0.020	<0.020
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000350	<0.0000300	<0.0000350	<0.0000250
Chromium, total (T-Cr)	mg/L	-	-	-	0.00122	0.00115	0.00121	0.00112
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00020	<0.00020	<0.00020	<0.00020
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00146	0.00149	0.00134	0.00136
Iron, total (T-Fe)	mg/L	-	-	-	<0.020	<0.020	<0.020	<0.020
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	<0.000100	<0.000100	<0.000100	<0.000100
Manganese, total (T-Mn)	mg/L	-	-	-	0.00675	0.00643	0.0117	0.0114
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	-[7]	-[8]	-[7]	-[8]
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.121	0.119	0.126	0.120
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00100	<0.00100	<0.00100	<0.00100
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000445	0.000361	0.000408	0.000392
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000020	<0.000020	<0.000020	<0.000020
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000020	<0.000020	0.000021	<0.000020
Uranium, total (T-U)	mg/L	-	-	-	0.0330	0.0327	0.0347	0.0330
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.00205	0.00191	0.00214	0.00198
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	<0.0060	<0.0060	<0.0060	<0.0060
Hexavalent Chromium, total	mg/L	0.0015	-	-	-[7]	-[8]	-[7]	-[8]
Dissolved Metals								
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000250	<0.0000350	<0.0000250	<0.0000250
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00141	0.00140	0.00121	0.00131
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.020	<0.020	<0.020	<0.050
Lead, dissolved (D-Pb)	mg/L	-	-	-	<0.000100	<0.000100	<0.000100	<0.000250
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.00652	0.00617	0.0112	0.0118
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00100	<0.00100	<0.00100	<0.00250
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.155	0.159	0.155	0.149
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00190	0.00178	0.00194	<0.00250
Zinc, dissolved (D-Zn)	mg/L	-	-	-	<0.0020	<0.0020	<0.0020	<0.0050
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene	mg/L	0.006	-	-	-[8]	-[8]	-[8]	-[8]
Acridine	mg/L	-	-	-	-[8]	-[8]	-[8]	-[8]
Anthracene	mg/L	-	-	-	-[8]	-[8]	-[8]	-[8]
Benz(a)anthracene	mg/L	-	-	-	-[8]	-[8]	-[8]	-[8]
Benzo(a)pyrene	mg/L	0.00001	-	-	-[8]	-[8]	-[8]	-[8]
Chrysene	mg/L	0.0001	-	-	-[8]	-[8]	-[8]	-[8]
Fluoranthene	mg/L	-	-	-	-[8]	-[8]	-[8]	-[8]
Fluorene	mg/L	0.012	-	-	-[8]	-[8]	-[8]	-[8]
1-methylnaphthalene	mg/L	0.001	-	-	-[8]	-[8]	-[8]	-[8]
2-methylnaphthalene	mg/L	0.001	-	-	-[8]	-[8]	-[8]	-[8]
Naphthalene	mg/L	0.001	-	-	-[8]	-[8]	-[8]	-[8]
Phenanthrene	mg/L	-	-	-	-[8]	-[8]	-[8]	-[8]
Pyrene	mg/L	-	-	-	-[8]	-[8]	-[8]	-[8]
Quinoline	mg/L	-	-	-	-[8]	-[8]	-[8]	-[8]
Volatile Organic Compounds (VOCs)								
Benzene	mg/L	0.11	-	-	-[8]	-[8]	-[8]	-[8]
Ethylbenzene	mg/L	0.25	-	-	-[8]	-[8]	-[8]	-[8]
Methyl-tert-butyl-ether	mg/L	5	0.44	-	-[8]	-[8]	-[8]	-[8]
Styrene	mg/L	-	-	-	-[8]	-[8]	-[8]	-[8]
Toluene	mg/L	0.215	-	-	-[8]	-[8]	-[8]	-[8]
Total Xylenes	mg/L	-	-	-	-[8]	-[8]	-[8]	-[8]
Chlorobenzene	mg/L	0.025	-	-	-[8]	-[8]	-[8]	-[8]
1,2-Dichlorobenzene	mg/L	0.042	-	-	-[8]	-[8]	-[8]	-[8]

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 PE-111578 East Sedimentation Pond Discharge Limit.
The East Sedimentation Pond did not discharge during the monitoring period (February 2 – February 8).
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 27E and 27F in BC WQG guidance document.
[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 ≤0.5% of total Hg, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.
[6] The PE-111578 discharge limit for TSS is 25 mg/L under dry conditions and 75 mg/L for each day of Wet Conditions. Wet Conditions did not apply during the monitoring period.
[7] Only field and physical parameters and total and dissolved metals were tested for the WWTP-E-OUT and E500GPM-OUT samples collected February 6.
[8] A second set of total and dissolved metals bottles were submitted to the laboratory, excluding mercury and speciated metals, for the WWTP-E-OUT and E500GPM-OUT samples collected February 6. The additional metal bottles were filtered, digested and preserved by the laboratory.

Table B-3: East Catchment Effluent Analytical Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1]		PE-111578 Discharge Limit	Station WWTP-E-OUT	Station E500GPM-OUT
					Effluent	Effluent
					WWTP-E-OUT	E500GPM-OUT
					VA25A2805-002	VA25A2805-004
		Long Term	Short Term		2025-02-08 12:30	2025-02-08 12:18
General Parameters						
pH - Field	pH units	- [2]	-	5.5 - 9.0	7.2	8.5
Conductivity - Field	µS/cm	-	-	-	1575	1515
Temperature - Field	°C	-	-	-	2.8	3.3
Salinity - Field	ppt	-	-	-	1.40	1.33
Turbidity - Field	NTU	-	-	-	0.39	0.79
TSS	mg/L	-	-	25 [6]	-[7]	-[7]
Dissolved Oxygen - Field	mg/L	≥8	-	-	13.80	15.12
Anions and Nutrients						
Sulphate	mg/L	-	-	-	-[7]	-[7]
Chloride	mg/L	-	-	-	-[7]	-[7]
Fluoride	mg/L	-	1.5	-	-[7]	-[7]
Ammonia ($N\text{-}NH_3$)	mg/L	1.7-26 [3]	11-175 [3]	-	-[7]	-[7]
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	-[7]	-[7]
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	-[7]	-[7]
Total Metals						
Aluminum, total (T-Al)	mg/L	-	-	-	-[7]	-[7]
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	-[7]	-[7]
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	-[7]	-[7]
Barium, total (T-Ba)	mg/L	-	-	-	-[7]	-[7]
Beryllium, total (T-Be)	mg/L	0.1	-	-	-[7]	-[7]
Boron, total (T-B)	mg/L	1.2	-	-	-[7]	-[7]
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	-[7]	-[7]
Chromium, total (T-Cr)	mg/L	-	-	-	-[7]	-[7]
Cobalt, total (T-Co)	mg/L	-	-	-	-[7]	-[7]
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	-[7]	-[7]
Iron, total (T-Fe)	mg/L	-	-	-	-[7]	-[7]
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	-[7]	-[7]
Manganese, total (T-Mn)	mg/L	-	-	-	-[7]	-[7]
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	0.0000109	0.0000107
Molybdenum, total (T-Mo)	mg/L	-	-	-	-[7]	-[7]
Nickel, total (T-Ni)	mg/L	0.0083	-	-	-[7]	-[7]
Selenium, total (T-Se)	mg/L	0.002	-	-	-[7]	-[7]
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	-[7]	-[7]
Thallium, total (T-Tl)	mg/L	-	-	-	-[7]	-[7]
Uranium, total (T-U)	mg/L	-	-	-	-[7]	-[7]
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	-[7]	-[7]
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	-[7]	-[7]
Hexavalent Chromium, total	mg/L	0.0015	-	-	-[7]	-[7]
Dissolved Metals						
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	-[7]	-[7]
Copper, dissolved (D-Cu)	mg/L	-	-	-	-[7]	-[7]
Iron, dissolved (D-Fe)	mg/L	-	-	-	-[7]	-[7]
Lead, dissolved (D-Pb)	mg/L	-	-	-	-[7]	-[7]
Manganese, dissolved (D-Mn)	mg/L	-	-	-	-[7]	-[7]
Nickel, dissolved (D-Ni)	mg/L	-	-	-	-[7]	-[7]
Strontium, dissolved (D-Sr)	mg/L	-	-	-	-[7]	-[7]
Vanadium, dissolved (D-V)	mg/L	-	-	-	-[7]	-[7]
Zinc, dissolved (D-Zn)	mg/L	-	-	-	-[7]	-[7]
Polycyclic Aromatic Hydrocarbons (PAHs)						
Acenaphthene	mg/L	0.006	-	-	-[7]	-[7]
Acridine	mg/L	-	-	-	-[7]	-[7]
Anthracene	mg/L	-	-	-	-[7]	-[7]
Benz(a)anthracene	mg/L	-	-	-	-[7]	-[7]
Benzo(a)pyrene	mg/L	0.00001	-	-	-[7]	-[7]
Chrysene	mg/L	0.0001	-	-	-[7]	-[7]
Fluoranthene	mg/L	-	-	-	-[7]	-[7]
Fluorene	mg/L	0.012	-	-	-[7]	-[7]
1-methylnaphthalene	mg/L	0.001	-	-	-[7]	-[7]
2-methylnaphthalene	mg/L	0.001	-	-	-[7]	-[7]
Naphthalene	mg/L	0.001	-	-	-[7]	-[7]
Phenanthrene	mg/L	-	-	-	-[7]	-[7]
Pyrene	mg/L	-	-	-	-[7]	-[7]
Quinoline	mg/L	-	-	-	-[7]	-[7]
Volatile Organic Compounds (VOCs)						
Benzene	mg/L	0.11	-	-	-[7]	-[7]
Ethylbenzene	mg/L	0.25	-	-	-[7]	-[7]
Methyl-tert-butyl-ether	mg/L	5	0.44	-	-[7]	-[7]
Styrene	mg/L	-	-	-	-[7]	-[7]
Toluene	mg/L	0.215	-	-	-[7]	-[7]
Total Xylenes	mg/L	-	-	-	-[7]	-[7]
Chlorobenzene	mg/L	0.025	-	-	-[7]	-[7]
1,2-Dichlorobenzene	mg/L	0.042	-	-	-[7]	-[7]

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 PE-111578 East Sedimentation Pond Discharge Limit.
The East Sedimentation Pond did not discharge during the monitoring period (February 2 – February 8).
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 27E and 27F in BC WQG guidance document.
[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 ≤0.5% of total Hg, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.
[6] The PE-111578 discharge limit for TSS is 25 mg/L under dry conditions and 75 mg/L for each day of Wet Conditions. Wet Conditions did not apply during the monitoring period.
[7] Only field parameters and total and dissolved mercury were tested for samples collected February 8 at WWTP-E-OUT and E500GPM-OUT.

Table B-4: East Catchment Methylmercury and Corresponding Total Mercury Results Received at the Time of Reporting.

Parameter					**Total Methylmercury**	**Total Mercury**
Unit					**µg/L**	**µg/L**
Lowest Applicable Guideline[1]					0.0001 [2]	0.0094 – 0.020 [3,4]
Station	**Water Type**	**Sample ID**	**Lab ID**	**Sampling Date**		
Influent						
SP-E-IN	Influent	SP-E-IN	VA25A1975-001	2025-01-29	***0.000128***	***0.0130***
WWTP-E-IN	Influent	WWTP-E-IN	VA25A1912-001	2025-01-28	***0.000114***	***0.0143***
Effluent						
SP-E-OUT	Effluent	SP-E-OUT	VA25A2287-001	2025-01-31	***0.000151***	***0.123***
SP-E-OUT	Effluent	SP-E-OUT-Dup	VA25A2287-003	2025-01-31	***0.000131***	***0.122***
WWTP-E-OUT	Effluent	WWTP-E-OUT	VA25A1912-002	2025-01-28	***0.000108*** [5]	***0.0102*** [5]

Notes:
Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of marine aquatic life.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] From BC Ambient Water Quality Guidelines for Mercury Overview Report. The methylmercury concentration threshold of 0.0001 µg/L (0.1 ng/L) is indicated as a WQG for the protection of wildlife and is set at a concentration that protects fish from mercury bioaccumulation to a level that may harm wildlife that consume fish.
[3] CCME guideline for total mercury = 0.016 µg/L.
[4] When MeHg ≤ 0.5% of total Hg, BC WQG = 0.02 µg/L. When MeHg > 0.5% of total Hg, BC WQG = 0.0001/(MeHg/Total Hg). Detection limit values are used to calculate the WQG for result reported as not detected.
[5] East WWTP treated effluent was recirculated to the East Sedimentation Pond and did not discharge to Howe Sound on January 28.
Non-detect results are screened using the detection limit value.

Table B-5: East Catchment Dioxin and Furan Toxicity Equivalency Quantity (TEQ) Results Received at the Time of Reporting.

Parameter					**Lower Bound PCDD/F TEQ**	**Upper Bound PCDD/F TEQ**
Unit					**pg/L**	**pg/L**
Station	**Water Type**	**Sample ID**	**Lab ID**	**Sampling Date**		
Influent						
SP-E-IN	Influent	SP-E-IN	L2758806-1	2025-01-29	0.00477	2.16

Notes:
PCDD = polychlorinated dibenzodioxins (dioxins)
PCDF = polychlorinated dibenzofurans (furans)
TEQ = toxic equivalency
Lower bound PCDD/F TEQ is the sum of the toxic equivalency results for the individual PCDD/F parameters. Non-detectable parameters are assigned a value of zero (0).
Upper bound PCDD/F TEQ is the sum of the toxic equivalency results for the individual PCDD/F parameters. Non-detectable parameters are assigned the value of the detection limit.

Table B-6: East Catchment Field Measurements Collected During the Monitoring Period (February 2 – February 8).

Parameter			Temp.	Dissolved Oxygen (DO)	Salinity	Turbidity	Estimated TSS [3]	pH	Conductivity	Visibility of Sheen
Unit			**°C**	**mg/L**	**ppt**	**NTU**	**mg/L**	**s.u.**	**µS/cm**	
PE-111578 Discharge Limit			-	-	-	-	25 [6]	5.5 - 9.0	-	-
Lowest Applicable Guideline [1]			-	≥8	-	-	- [2]	- [2]	-	-
Station ID	**Water Type**	**Date**								
Influent [4]										
SP-E-IN	Influent	2025-02-02 13:20	2.4	13.81	1.29	2.71	5.0	7.5	1435	No
SP-E-IN	Influent	2025-02-03 16:35	0.9	15.23	1.30	0.54	3.4	8.6	1382	No
SP-E-IN	Influent	2025-02-04 13:22	0.9	15.11	1.30	0.79	3.6	8.9	1383	No
SP-E-IN	Influent	2025-02-05 10:21	0.2	15.32	1.32	0.72	3.5	8.9	1379	No
SP-E-IN	Influent	2025-02-06 10:10	0.4	15.51	1.34	0.66	3.5	9.2	1401	No
SP-E-IN	Influent	2025-02-07 15:39	1.9	15.14	1.35	1.11	3.8	8.3	1479	No
SP-E-IN	Influent	2025-02-08 12:10	2.3	15.04	1.35	1.12	3.8	8.5	1494	No
WWTP-E-IN	Influent	2025-02-02 13:30	2.8	13.31	1.25	9.24	9.9	7.4	1416	No
WWTP-E-IN	Influent	2025-02-03 16:49	0.8	14.90	1.29	7.61	8.7	8.5	1365	No
WWTP-E-IN	Influent	2025-02-04 13:15	1.2	14.94	1.30	2.87	5.1	9.0	1396	No
WWTP-E-IN	Influent	2025-02-05 11:22	1.2	15.10	1.29	2.64	5.0	8.9	1386	No
WWTP-E-IN	Influent	2025-02-06 10:20	0.4	15.33	1.46	1.97	4.5	9.1	1526	No
WWTP-E-IN	Influent	2025-02-07 13:49	3.5	14.62	1.43	7.04	8.3	8.2	1639	No
WWTP-E-IN	Influent	2025-02-08 12:35	2.7	14.58	1.35	2.73	5.0	8.5	1518	No
E500GPM-IN	Influent	2025-02-02 13:17	3.1	14.38	1.27	13.19	12.8	7.6	1445	No
E500GPM-IN	Influent	2025-02-03 16:31	0.7	15.81	1.3	4.2	6.1	8.5	1369	No
E500GPM-IN	Influent	2025-02-04 13:05	1.4	16.1	1.31	2.95	5.2	9.0	1416	No
E500GPM-IN	Influent	2025-02-05 10:30	0.7	15.62	1.28	1.43	4.1	8.9	1354	No
E500GPM-IN	Influent	2025-02-06 10:07	0.6	16.68	1.37	11.12	11.3	9.2	1445	No
E500GPM-IN	Influent	2025-02-07 14:08	2.4	15.78	1.39	3.39	5.5	8.3	1545	No
E500GPM-IN	Influent	2025-02-08 12:22	2.9	15.86	1.35	0.91	3.7	8.5	1522	No
Effluent [5]										
WWTP-E-OUT	Effluent	2025-02-02 13:24	3.6	12.07	1.36	0.77	3.6	6.9	1564	No
WWTP-E-OUT	Effluent	2025-02-03 16:20	1.7	14.82	1.32	1.03	3.8	8.9	1440	No
WWTP-E-OUT	Effluent	2025-02-04 13:09	1.5	14.08	1.21	0.62	3.5	8.4	1311	No
WWTP-E-OUT	Effluent	2025-02-05 10:54	0.9	15.55	1.29	1.02	3.8	9.1 [7]	1371	No
WWTP-E-OUT	Effluent	2025-02-06 6:39	4.5	13.20	1.30	2.43	4.8	9.0	1544	No
WWTP-E-OUT	Effluent	2025-02-06 10:17	0.5	15.38	1.47	0.94	3.7	9.2 [7]	1540	No
WWTP-E-OUT	Effluent	2025-02-07 13:58	2.3	14.91	1.37	0.83	3.6	8.5	1518	No
WWTP-E-OUT	Effluent	2025-02-08 12:30	2.8	13.80	1.40	0.39	3.3	7.2	1575	No
E500GPM-OUT	Effluent	2025-02-02 13:14	5.1	13.86	0	1.30	4.0	7.6	5	No
E500GPM-OUT	Effluent	2025-02-03 16:28	0.9	15.23	1.20	0.43	3.3	8.5	1388	No
E500GPM-OUT	Effluent	2025-02-04 13:02	1.4	15.56	1.25	0.66	3.5	9.0	1352	No
E500GPM-OUT	Effluent	2025-02-05 10:00	3.1	14.78	1.30	0.62	3.5	8.8	1481	No
E500GPM-OUT	Effluent	2025-02-06 6:44	3.0	14.27	1.30	0.66	3.5	8.9	1480	No
E500GPM-OUT	Effluent	2025-02-06 10:13	0.4	15.71	1.44	0.67	3.5	9.1 [7]	1500	No
E500GPM-OUT	Effluent	2025-02-07 14:04	3.3	15.08	0.66	0.60	3.4	8.2	774	No
E500GPM-OUT	Effluent	2025-02-08 12:18	3.3	15.12	1.33	0.79	3.6	8.5	1515	No

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 PE-111578 East Sedimentation Pond Discharge Limit.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] TSS concentration is estimated from field turbidity measurements using a site-specific relationship TSS = 0.7458 * [turbidity as NTU] + 3.
[4] Daily field measurements for station SP-E-IN were collected from cell 1 of the East Sedimentation Pond.
[5] There was no discharge February 2 – February 8, therefore daily field measurements for SP-E-OUT were not collected on those days.
[6] The PE-111578 discharge limit for TSS is 25 mg/L under dry conditions and 75 mg/L for Wet Conditions. Wet Conditions did not apply during the monitoring period.
[7] The East Catchment did not discharge on February 5 nor on February 6.

Table B-7: East Catchment Daily Discharge Volumes for the Monitoring Period (February 2 – February 8).

	East Sedimentation Pond Effluent	East TSS Settling System (E500GPM) Clarified Effluent (Station E500GPM-OUT)	East WWTP Treated Effluent (Station WWTP-E-OUT)	Discharge to Howe Sound (Station SP-E-OUT)
Unit	**m^3**	**m^3**	**m^3**	**m^3**
PE-111578 Discharge Limit	- [1]	- [1]	1100	- [1]
Date				
2025-02-02	0	0	0	0
2025-02-03	0	0	0	0
2025-02-04	0	0	0	0
2025-02-05	0	0	0	0
2025-02-06	0	0	0	0
2025-02-07	0	0	0	0
2025-02-08	0	0	0	0

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 PE-111578 East Sedimentation Pond Discharge Limit.
[1] The annual average authorized discharge rate from the East Sedimentation Pond is 650 m^3/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.

Appendix C: West Catchment Monitoring Results

Table C-1: West Catchment Contact Water Influent Analytical Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1]		PE-111578 Discharge Limit	Station SP-W-IN Influent SP-W-IN VA25A2781-001 2025-02-07 15:25
		Long Term	Short Term		
General Parameters					
pH - Field	pH units	- [2]	-	5.5 - 9.0	8.3
Conductivity - Field	µS/cm	-	-	-	95
Temperature - Field	°C	-	-	-	0.9
Salinity - Field	ppt	-	-	-	0.08
Turbidity - Field	NTU	-	-	-	6.28
TSS	mg/L	-	-	25 [6]	3.8
Dissolved Oxygen - Field	mg/L	≥8	-	-	15.62
Anions and Nutrients					
Sulphate	mg/L	-	-	-	9.76
Chloride	mg/L	-	-	-	16
Fluoride	mg/L	-	1.5	-	0.102
Ammonia (N-NH_3)	mg/L	2.7 [3]	18 [3]	-	0.0501
Nitrite (N-NO_2)	mg/L	-	-	-	0.0328
Nitrate (N-NO_3)	mg/L	3.7	339	-	0.526
Total Metals					
Aluminum, total (T-Al)	mg/L	-	-	-	0.432
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00074
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00128
Barium, total (T-Ba)	mg/L	-	-	-	0.00724
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000020
Boron, total (T-B)	mg/L	1.2	-	-	<0.010
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	0.0000127
Chromium, total (T-Cr)	mg/L	-	-	-	<0.00050
Cobalt, total (T-Co)	mg/L	-	-	-	0.00016
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.0017
Iron, total (T-Fe)	mg/L	-	-	-	0.259
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.000835
Manganese, total (T-Mn)	mg/L	-	-	-	0.0228
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	0.00000176
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0134
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00050
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000132
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000010
Uranium, total (T-U)	mg/L	-	-	-	0.00819
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.0013
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	0.0033
Hexavalent Chromium, total	mg/L	0.0015	-	-	<0.00050
Dissolved Metals					
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000150
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00098
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	-	<0.000050
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.0159
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0411
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00078
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0011
Polycyclic Aromatic Hydrocarbons (PAHs)					
Acenaphthene	mg/L	0.006	-	-	<0.000010
Acridine	mg/L	-	-	-	<0.000010
Anthracene	mg/L	-	-	-	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.0000050
Chrysene	mg/L	0.0001	-	-	<0.000010
Fluoranthene	mg/L	-	-	-	<0.000010
Fluorene	mg/L	0.012	-	-	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010
Naphthalene	mg/L	0.001	-	-	<0.000050
Phenanthrene	mg/L	-	-	-	<0.000020
Pyrene	mg/L	-	-	-	<0.000010
Quinoline	mg/L	-	-	-	<0.000050
Volatile Organic Compounds (VOCs)					
Benzene	mg/L	0.11	-	-	<0.00050
Ethylbenzene	mg/L	0.25	-	-	<0.00050
Methyl-tert-butyl-ether	mg/L	5	0.44	-	<0.00050
Styrene	mg/L	-	-	-	<0.00050
Toluene	mg/L	0.215	-	-	<0.00040
Total Xylenes	mg/L	-	-	-	<0.00050
Chlorobenzene	mg/L	0.025	-	-	<0.00050
1,2-Dichlorobenzene	mg/L	0.042	-	-	<0.00050

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 PE-111578 West Sedimentation Pond Discharge Limit.
The West Sedimentation Pond did not discharge during the monitoring period (February 2 – February 8).
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 27E and 27F in BC WQG guidance document.
[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 ≤0.5% of total Hg, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.
[6] The PE-111578 discharge limit for TSS is 25 mg/L under dry conditions and 75 mg/L for each day of Wet Conditions. Wet Conditions did not apply during the monitoring period.

Table C-2: West Catchment Effluent Analytical Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1]		PE-111578 Discharge Limit	Station SP-W-OUT [7]
					Effluent
					SP-W-OUT
					VA25A2309-001
		Long Term	Short Term		2025-02-01 17:00
General Parameters					
pH - Field	pH units	- [2]	-	5.5 - 9.0	7.9
Conductivity - Field	µS/cm	-	-	-	100
Temperature - Field	°C	-	-	-	2.2
Salinity - Field	ppt	-	-	-	0.08
Turbidity - Field	NTU	-	-	-	2.57
TSS	mg/L	-	-	25 [6]	<3.0
Dissolved Oxygen - Field	mg/L	≥8	-	-	16.99
Anions and Nutrients					
Sulphate	mg/L	-	-	-	8.34
Chloride	mg/L	-	-	-	19.8
Fluoride	mg/L	-	1.5	-	0.088
Ammonia ($N\text{-}NH_3$)	mg/L	6.6 [3]	44 [3]	-	0.0457
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	0.0494
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	0.349
Total Metals					
Aluminum, total (T-Al)	mg/L	-	-	-	0.0952
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00064
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00108
Barium, total (T-Ba)	mg/L	-	-	-	0.00467
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000020
Boron, total (T-B)	mg/L	1.2	-	-	<0.010
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000100
Chromium, total (T-Cr)	mg/L	-	-	-	<0.00050
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00010
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00103
Iron, total (T-Fe)	mg/L	-	-	-	0.085
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.00021
Manganese, total (T-Mn)	mg/L	-	-	-	0.0296
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	0.00000074
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0129
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00050
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000065
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000010
Uranium, total (T-U)	mg/L	-	-	-	0.00769
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.00078
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	0.003
Hexavalent Chromium, total	mg/L	0.0015	-	-	<0.00050
Dissolved Metals					
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	0.000006
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00068
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	-	<0.000050
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.0264
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0402
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00062
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.001
Polycyclic Aromatic Hydrocarbons (PAHs)					
Acenaphthene	mg/L	0.006	-	-	<0.000010
Acridine	mg/L	-	-	-	<0.000010
Anthracene	mg/L	-	-	-	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.0000050
Chrysene	mg/L	0.0001	-	-	<0.000010
Fluoranthene	mg/L	-	-	-	<0.000010
Fluorene	mg/L	0.012	-	-	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010
Naphthalene	mg/L	0.001	-	-	<0.000050
Phenanthrene	mg/L	-	-	-	<0.000020
Pyrene	mg/L	-	-	-	<0.000010
Quinoline	mg/L	-	-	-	<0.000050
Volatile Organic Compounds (VOCs)					
Benzene	mg/L	0.11	-	-	<0.00050
Ethylbenzene	mg/L	0.25	-	-	<0.00050
Methyl-tert-butyl-ether	mg/L	5	0.44	-	<0.00050
Styrene	mg/L	-	-	-	<0.00050
Toluene	mg/L	0.215	-	-	<0.00040
Total Xylenes	mg/L	-	-	-	<0.00050
Chlorobenzene	mg/L	0.025	-	-	<0.00050
1,2-Dichlorobenzene	mg/L	0.042	-	-	<0.00050

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 PE-111578 West Sedimentation Pond Discharge Limit.
The West Sedimentation Pond did not discharge during the monitoring period (February 2 – February 8).
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 27E and 27F in BC WQG guidance document.
[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 ≤0.5% of total Hg, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.
[6] The PE-111578 discharge limit for TSS is 25 mg/L under dry conditions and 75 mg/L for each day of Wet Conditions. Wet Conditions did not apply during the monitoring period.
[7] Field measurements and analytical samples were collected at the SP-W-OUT sampling port.

Table C-3: West Catchment Methylmercury and Corresponding Total Mercury Results Received at the Time of Reporting.

Parameter					**Total Methylmercury**	**Total Mercury**
Unit					**µg/L**	**µg/L**
Lowest Applicable Guideline[1]					0.0001 [2]	0.0094 – 0.020 [3,4]
Station	**Water Type**	**Sample ID**	**Lab ID**	**Sampling Date**		
Influent						
SP-W-IN	Influent	SP-W-IN	VA25A2168-004	2025-01-30	0.000100	0.0125
Effluent						
SP-W-OUT	Effluent	SP-W-OUT	VA25A2309-001	2025-02-01	0.000028	0.00074

Notes:
Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of marine aquatic life.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] From BC Ambient Water Quality Guidelines for Mercury Overview Report. The methylmercury concentration threshold of 0.0001 µg/L (0.1 ng/L) is indicated as a WQG for the protection of wildlife and is set at a concentration that protects fish from mercury bioaccumulation to a level that may harm wildlife that consume fish.
[3] CCME guideline for total mercury = 0.016 µg/L.
[4] When MeHg ≤ 0.5% of total Hg, BC WQG = 0.02 µg/L. When MeHg > 0.5% of total Hg, BC WQG = 0.0001/(MeHg/Total Hg). Detection limit values are used to calculate the WQG for result reported as not detected.
Non-detect results are screened using the detection limit value.

Table C-4: West Catchment Field Measurements Collected During the Monitoring Period (February 2 – February 8).

Parameter			**Temperature**	**Dissolved Oxygen (DO)**	**Salinity**	**Turbidity**	**Estimated TSS [3]**	**pH**	**Conductivity**	**Visibility of Sheen**
Unit			**°C**	**mg/L**	**ppt**	**NTU**	**mg/L**	**s.u.**	**µS/cm**	
PE-111578 Discharge Limit			-	-	-	-	25 [6]	5.5 - 9.0	-	-
Lowest Applicable Guideline [1]			-	≥8	-	-	- [2]	- [2]	-	-
Station ID	**Water Type**	**Date**								
Influent [4]										
SP-W-IN	Influent	2025-02-02 12:41	1.6	15.63	0.09	15.97	14.9	8.1	105	No
SP-W-IN	Influent	2025-02-03 17:06	1.3	14.89	0.07	20.17	18.0	8.5	82	No
SP-W-IN	Influent	2025-02-04 12:44	1.8	13.29	0.07	20.3	18.1	8.9	86	No
SP-W-IN	Influent	2025-02-05 12:39	0.5	15.80	0.08	15.38	14.5	8.1	92	No
SP-W-IN	Influent	2025-02-06 10:34	0.2	15.68	0.09	10.10	10.5	8.8	96	No
SP-W-IN	Influent	2025-02-07 15:25	0.9	15.62	0.08	6.28	7.7	8.3	95	No
SP-W-IN	Influent	2025-02-08 13:33	1.1	15.2	0.08	5.54	7.1	8.0	95	No
W500GPM-IN	Influent	2025-02-02 12:26	3.2	14.19	0.09	34.75	28.9	8.2	112	No
W500GPM-IN	Influent	2025-02-03 17:09	0.8	15.57	0.12	0.62	3.5	8.5	136	No
W500GPM-IN	Influent	2025-02-04 12:33	3.3	14.98	0.07	0.25	3.2	8.3	82	No
W500GPM-IN	Influent	2025-02-05 12:35	2.2	15.6	0.09	0.48	3.4	8.1	108	No
W500GPM-IN	Influent	2025-02-06 10:40	2.5	15.08	0.17	0.55	3.4	8.9	207	No
W500GPM-IN	Influent	2025-02-07 14:28	4.4	14.66	0.15	0.49	3.4	8.4	195	No
W500GPM-IN	Influent	2025-02-08 13:41	6.7	14.35	0.09	0.64	3.5	7.9	119	No
Effluent [5]										
W500GPM-OUT	Effluent	2025-02-02 12:37	2.1	15.67	0.04	1.29	4.0	8.1	54	No
W500GPM-OUT	Effluent	2025-02-03 17:04	1.2	15.61	0.15	0.56	3.4	8.5	174	No
W500GPM-OUT	Effluent	2025-02-04 13:34	8.2	14.34	0.05	0.82	3.6	8.3	77	No
W500GPM-OUT	Effluent	2025-02-05 12:33	10.2	12.41	0.09	1.28	4.0	7.6	133	No
W500GPM-OUT	Effluent	2025-02-06 10:38	4.2	14.87	0.14	1.13	3.8	8.8	174	No
W500GPM-OUT	Effluent	2025-02-07 14:31	5.4	14.52	0.12	0.39	3.3	8.4	152	No
W500GPM-OUT	Effluent	2025-02-08 13:38	0.1	14.11	0.01	0.95	3.7	8.1	10	No

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 PE-111578 West Sedimentation Pond Discharge Limit.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] TSS concentration is estimated from field turbidity measurements using a site-specific relationship TSS = 0.7458 * [turbidity as NTU] + 3.
[4] Daily field measurements for station SP-W-IN were collected from cell 1 of the West Sedimentation Pond.
[5] There was no discharge February 2 – February 8, therefore daily field measurements for SP-W-OUT were not collected on those days.
[6] The PE-111578 discharge limit for TSS is 25 mg/L under dry conditions and 75 mg/L for each day of Wet Conditions. Wet Conditions did not apply during the monitoring period.

Table C-5: West Catchment Daily Discharge Volumes for the Monitoring Period (February 2 – February 8).

	West Sedimentation Pond Effluent	**West TSS Settling System (W500GPM) Clarified Effluent (Station W500GPM-OUT)**	**West TSS Settling System (ESC) Clarified Effluent (Station ESC-W-OUT)**	**West WWTP Treated Effluent [1] (Station WWTP-W-OUT)**	**Discharge to Howe Sound (Station SP-W-OUT)**
Unit	**m^3**	**m^3**	**m^3**	**m^3**	**m^3**
PE-111578 Discharge Limit	- [2]	- [2]	- [2]	120	- [2]
Date					
2025-02-02	0	0	0	0	0
2025-02-03	0	0	0	0	0
2025-02-04	0	0	0	0	0
2025-02-05	0	0	0	0	0
2025-02-06	0	0	0	0	0
2025-02-07	0	0	0	0	0
2025-02-08	0	0	0	0	0

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 PE-111578 West Sedimentation Pond Discharge Limit.
[1] The West WWTP is not being operated, therefore discharges are not expected from this facility.
[2] The annual average authorized discharge rate from the West Sedimentation Pond is 310 m^3/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.

Appendix D: Non-Contact Water Diversion Ditch Outlets Results

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

Parameter	Unit	Lowest Applicable Guideline [1, 2]		Station OUT-01	Station OUT-02
				Non-Contact Water Diversion Ditch Outlet	Non-Contact Water Diversion Ditch Outlet
				OUT-01	OUT-02
				VA25A2292-001	VA25A2292-002
		Long Term	Short Term	2025-01-31 14:30	2025-01-31 14:10
General Parameters					
pH - Field	pH units	6.5 - 9.0	-	7.1	6.9
Specific Conductivity - Field	µS/cm	-	-	91	13
Temperature - Field	°C	-	-	3.9	3.5
Salinity - Field	ppt	-	-	0.07	0.01
Turbidity - Field	NTU	-	-	1.9	1.06
TSS	mg/L	-	-	<3.0	<3.0
Dissolved Oxygen - Field	mg/L	>=8	>=5	13.04	13.16
Anions and Nutrients					
Sulphate [2]	mg/L	128	-	7.83	1.91
Chloride	mg/L	120	600	19.60	0.96
Fluoride [2]	mg/L	-	0.40-0.84	<0.020	<0.020
Ammonia ($N\text{-}NH_3$) [2]	mg/L	1.99-23.1	20.7-23.6	<0.0085	<0.0050
Nitrite ($N\text{-}NO_2$) [2]	mg/L	0.02-0.2	0.06-0.6	<0.0010	<0.0010
Nitrate ($N\text{-}NO_3$)	mg/L	3	32.8	0.421	0.188
Total Metals					
Aluminum, total (T-Al) [2]	mg/L	0.068-0.11	-	***0.112***	***0.206***
Antimony, total (T-Sb)	mg/L	0.074	-	0.00021	<0.00010
Arsenic, total (T-As)	mg/L	0.005	-	0.0002	0.0001
Barium, total (T-Ba)	mg/L	1	-	0.00813	0.00388
Beryllium, total (T-Be)	mg/L	0.00013	-	<0.000020	<0.000020
Boron, total (T-B)	mg/L	1.2	29	0.015	<0.010
Cadmium, total (T-Cd) [2]	mg/L	0.000036-0.000057	0.00015-0.00060	0.0000092	<0.0000050
Chromium, total (T-Cr) [4]	mg/L	0.001	-	<0.00050	<0.00050
Cobalt, total (T-Co)	mg/L	0.001	0.11	0.00012	<0.00010
Copper, total (T-Cu)	mg/L	-	-	0.00093	0.00066
Iron, total (T-Fe)	mg/L	0.3	1	0.288	0.073
Lead, total (T-Pb)	mg/L	-	-	0.000109	0.000172
Manganese, total (T-Mn) [2]	mg/L	0.768	0.816-0.862	0.0112	0.00424
Mercury, total (T-Hg) [3]	mg/L	0.00002	-	0.0000014	0.00000286
Molybdenum, total (T-Mo)	mg/L	0.073	46	0.00103	0.00135
Nickel, total (T-Ni) [2]	mg/L	0.025	-	<0.00050	<0.00050
Selenium, total (T-Se)	mg/L	0.001	-	<0.000050	0.000053
Silver, total (T-Ag) [2]	mg/L	0.000050	0.00010	<0.000010	<0.000010
Thallium, total (T-Tl)	mg/L	0.0008	-	<0.000010	<0.000010
Uranium, total (T-U)	mg/L	0.0085	0.033	0.000378	0.00018
Vanadium, total (T-V)	mg/L	0.12	-	<0.00050	<0.00050
Zinc, total (T-Zn)	mg/L	-	-	0.0460	<0.0030
Hexavalent Chromium, total	mg/L	0.001	-	-	-
Dissolved Metals					
Cadmium, dissolved (D-Cd) [2]	mg/L	0.000031-0.000085	0.000039-0.00017	0.0000124	<0.0000050
Copper, dissolved (D-Cu) [2]	mg/L	0.00025-0.00044	0.0016-0.0027	***0.00083***	***0.00048***
Iron, dissolved (D-Fe)	mg/L	-	0.35	0.24	0.023
Lead, dissolved (D-Pb) [2]	mg/L	0.0022-0.0028	-	0.000054	<0.000050
Manganese, dissolved (D-Mn) [2]	mg/L	0.35-0.38	1.97-2.26	0.0102	0.00087
Nickel, dissolved (D-Ni) [2]	mg/L	0.00080-0.0010	0.012-0.013	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	2.5	-	0.0419	0.0096
Vanadium, dissolved (D-V)	mg/L	-	-	<0.00050	<0.00050
Zinc, dissolved (D-Zn) [2]	mg/L	0.00585-0.00589	0.010-0.018	***0.0459***	0.0018
Polycyclic Aromatic Hydrocarbons (PAHs)					
Acenaphthene	mg/L	0.0058	-	-	-
Acridine	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	-	-	-	-
Fluoranthene	mg/L	0.00004	-	-	-
Fluorene	mg/L	0.003	-	-	-
1-methylnaphthalene	mg/L	-	-	-	-
2-methylnaphthalene	mg/L	-	-	-	-
Naphthalene	mg/L	0.001	0.001	-	-
Phenanthrene	mg/L	0.0003	-	-	-
Pyrene	mg/L	0.00002	-	-	-
Quinoline	mg/L	0.0034	-	-	-
Volatile Organic Compounds (VOCs)					
Benzene	mg/L	0.04	-	-	-
Ethylbenzene	mg/L	0.09	-	-	-
Methyl-tert-butyl-ether	mg/L	10	3.4	-	-
Styrene	mg/L	0.072	-	-	-
Toluene	mg/L	0.0005	-	-	-
Total Xylenes	mg/L	0.03	-	-	-
Chlorobenzene	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] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] 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.
[3] When MeHg $\leqslant$ 0.5% of total Hg, BC WQG = 0.00002 mg/L.
[4] 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.

Appendix E: Freshwater Receiving Environment Results

Table E-1: Summary of Freshwater Water Quality Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1, 2]		Station SW-01	Station SW-02	Station SW-07	Station SW-04
				Woodfibre Creek Lower Reach	Mill Creek Upper Reach	Upstream Mill Creek	East Creek Lower Reach
				SW-01	SW-02	SW-07	SW-04
				VA25A1730-001	VA25A1730-002	VA25A1755-002	VA25A1755-001
		Long Term	Short Term	2025-01-24 11:35	2025-01-24 13:15	2025-01-25 12:40	2025-01-25 11:50
General Parameters							
pH - Field	pH units	6.5 - 9.0	-	6.6	7.6	6.8	7.6
Specific Conductivity - Field	µS/cm	-	-	5	25	10	59
Temperature - Field	℃	-	-	1.9	2.6	1.4	5.5
Salinity - Field	ppt	-	-	0	0.02	0.01	0.04
Turbidity - Field	NTU	-	-	-0.01	0.02	0.69	1.55
TSS	mg/L	-	-	<3.0	<3.0	<3.0	<3.0
Dissolved Oxygen - Field	mg/L	>=8	>=5	14.41	14.22	14.23	12.95
Anions and Nutrients							
Sulphate [2]	mg/L	128	-	1.81	3.97	4.02	2.9
Chloride	mg/L	120	600	10.4	1.66	1.69	1.02
Fluoride [2]	mg/L	-	0.40-0.69	<0.020	<0.020	<0.020	0.045
Ammonia ($N\text{-}NH_3$) [2]	mg/L	1.95-2.05	1.54-27.5	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite ($N\text{-}NO_2$) [2]	mg/L	0.020-0.20	0.060-0.60	<0.0010	<0.0010	<0.0010	<0.0010
Nitrate ($N\text{-}NO_3$)	mg/L	3	32.8	0.038	0.0807	0.0857	0.0343
Total Metals							
Aluminum, total (T-Al) [2]	mg/L	0.035-0.087	-	***0.130***	0.0389	***0.0383***	0.0702
Antimony, total (T-Sb)	mg/L	0.074	-	<0.00010	<0.00010	<0.00010	0.00015
Arsenic, total (T-As)	mg/L	0.005	-	<0.00010	<0.00010	<0.00010	0.00019
Barium, total (T-Ba)	mg/L	1	-	0.0018	0.00379	0.00343	0.00344
Beryllium, total (T-Be)	mg/L	0.00013	-	<0.000020	<0.000020	<0.000020	<0.000020
Boron, total (T-B)	mg/L	1.2	29	<0.010	0.021	0.02	<0.010
Cadmium, total (T-Cd) [2]	mg/L	0.000036-0.000042	0.00011-0.00041	<0.0000050	<0.0000050	0.0000078	<0.0000100
Chromium, total (T-Cr) [4]	mg/L	0.001	-	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt, total (T-Co)	mg/L	0.001	0.11	<0.00010	<0.00010	<0.00010	<0.00010
Copper, total (T-Cu)	mg/L	-	-	<0.00050	<0.00050	<0.00050	0.00061
Iron, total (T-Fe)	mg/L	0.3	1	0.04	<0.010	<0.010	0.156
Lead, total (T-Pb)	mg/L	-	-	<0.000050	<0.000050	<0.000050	0.000076
Manganese, total (T-Mn) [2]	mg/L	0.768	0.816	0.00081	0.00029	0.00038	0.01
Mercury, total (T-Hg) [3]	mg/L	0.00002	-	0.00000189	0.00000055	0.00000055	0.0000013
Molybdenum, total (T-Mo)	mg/L	0.073	46	0.000276	0.000622	0.000516	0.00227
Nickel, total (T-Ni) [2]	mg/L	0.025	-	<0.00050	<0.00050	<0.00050	<0.00050
Selenium, total (T-Se)	mg/L	0.001	-	<0.000050	<0.000050	<0.000050	<0.000050
Silver, total (T-Ag) [2]	mg/L	0.000050	0.00010	<0.000010	<0.000010	<0.000010	<0.000010
Thallium, total (T-Tl)	mg/L	0.0008	-	<0.000010	<0.000010	<0.000010	<0.000010
Uranium, total (T-U)	mg/L	0.0085	0.033	0.000576	0.000126	0.000102	0.000307
Vanadium, total (T-V)	mg/L	0.12	-	<0.00050	<0.00050	<0.00050	<0.00050
Zinc, total (T-Zn)	mg/L	-	-	<0.0030	<0.0030	<0.0030	<0.0030
Hexavalent Chromium, total	mg/L	0.001	-	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Metals							
Cadmium, dissolved (D-Cd) [2]	mg/L	0.000018-0.000065	0.000038-0.00011	<0.0000050	0.000011	0.000011	0.0000085
Copper, dissolved (D-Cu) [2]	mg/L	0.00020-0.00025	0.00083-0.0015	***0.00023***	0.00021	<0.00020	***0.00034***
Iron, dissolved (D-Fe)	mg/L	-	0.35	0.031	<0.010	<0.010	0.016
Lead, dissolved (D-Pb) [2]	mg/L	0.0012-0.0017	-	<0.000050	<0.000050	<0.000050	<0.000050
Manganese, dissolved (D-Mn) [2]	mg/L	0.33-0.35	1.97	0.00048	0.00035	0.00042	0.00579
Nickel, dissolved (D-Ni) [2]	mg/L	0.00060-0.00070	0.0094-0.011	<0.00050	<0.00050	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	2.5	-	0.00458	0.011	0.0105	0.0321
Vanadium, dissolved (D-V)	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Zinc, dissolved (D-Zn) [2]	mg/L	0.0021-0.0068	0.0075-0.010	<0.0010	<0.0010	<0.0010	***0.0026***
Polycyclic Aromatic Hydrocarbons (PAHs)							
Acenaphthene	mg/L	0.0058	-	<0.000010	<0.000010	<0.000010	<0.000010
Acridine	mg/L	0.003	-	<0.000010	<0.000010	<0.000010	<0.000010
Anthracene	mg/L	0.000012	-	<0.000010	<0.000010	<0.000010	<0.000010
Benz(a)anthracene	mg/L	0.000018	-	<0.000010	<0.000010	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Chrysene	mg/L	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Fluoranthene	mg/L	0.00004	-	<0.000010	<0.000010	<0.000010	<0.000010
Fluorene	mg/L	0.003	-	<0.000010	<0.000010	<0.000010	<0.000010
1-methylnaphthalene	mg/L	-	-	<0.000010	<0.000010	<0.000010	<0.000010
2-methylnaphthalene	mg/L	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Naphthalene	mg/L	0.001	0.001	<0.000050	<0.000050	<0.000050	<0.000050
Phenanthrene	mg/L	0.0003	-	<0.000020	<0.000020	<0.000020	<0.000020
Pyrene	mg/L	0.00002	-	<0.000010	<0.000010	<0.000010	<0.000010
Quinoline	mg/L	0.0034	-	<0.000050	<0.000050	<0.000050	<0.000050
Volatile Organic Compounds (VOCs)							
Benzene	mg/L	0.04	-	<0.00050	<0.00050	<0.00050	<0.00050
Ethylbenzene	mg/L	0.09	-	<0.00050	<0.00050	<0.00050	<0.00050
Methyl-tert-butyl-ether	mg/L	10	3.4	<0.00050	<0.00050	<0.00050	<0.00050
Styrene	mg/L	0.072	-	<0.00050	<0.00050	<0.00050	<0.00050
Toluene	mg/L	0.0005	-	<0.00040	<0.00040	<0.00040	<0.00040
Total Xylenes	mg/L	0.03	-	<0.00050	<0.00050	<0.00050	<0.00050
Chlorobenzene	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050
1,2-Dichlorobenzene	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050

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] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] 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.
[3] When MeHg ⩽ 0.5% of total Hg, BC WQG = 0.00002 mg/L.
[4] 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.

Table E-2: Freshwater Methylmercury and Corresponding Total Mercury Results Received at the Time of Reporting.

Parameter					**Total Methylmercury**	**Total Mercury**
Unit					**µg/L**	**µg/L**
Lowest Applicable Guideline[1]					0.0001 [2]	0.020 – 0.026 [3,4]
Station	**Water Type**	**Sample ID**	**Lab ID**	**Sampling Date**		
SW-01	Lower Reach of Woodfibre Creek (near the mouth)	SW-01	VA25A1730-001	2025-01-24	0.000023	0.00189
SW-02	Upper Reach of Mill Creek (upstream of the third bridge)	SW-02	VA25A1730-002	2025-01-24	<0.000020	0.00055
SW-07	Upstream Mill Creek (at the diversion inlet)	SW-07	VA25A1755-002	2025-01-25	0.000021	0.00055
SW-04	Lower Reach of East Creek (near the outlet to the outfall culvert)	SW-04	VA25A1755-001	2025-01-25	<0.000020	0.00130

Notes:
Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of freshwater aquatic life.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] From BC Ambient Water Quality Guidelines for Mercury Overview Report. The methylmercury concentration threshold of 0.0001 µg/L (0.1 ng/L) is indicated as a WQG for the protection of wildlife and is set at a concentration that protects fish from mercury bioaccumulation to a level that may harm wildlife that consume fish.
[3] CCME guideline for total mercury = 0.026 µg/L.
[4] When MeHg ≤ 0.5% of total Hg, BC WQG = 0.02 µg/L. When MeHg > 0.5% of total Hg, BC WQG = 0.0001/(MeHg/Total Hg). Detection limit values are used to calculate the WQG for result reported as not detected.
Non-detect results are screened using the detection limit value.

Appendix F: Estuarine Water Receiving Environment Results

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

Parameter	Unit	Lowest Applicable Guideline [1]		Station SW-03 Mill Creek Estuary SW-03 VA25A1730-003 2025-01-24 12:45
		Long Term	Short Term	
General Parameters				
pH - Field	pH units	7.0 - 8.7	-	7.5
Specific Conductivity - Field	µS/cm	-	-	12121
Temperature - Field	°C	-	-	4.7
Salinity - Field	ppt	-	-	11.6
Turbidity - Field	NTU	-	-	0.38
TSS	mg/L	-	-	<3.0
Dissolved Oxygen - Field	mg/L	-	-	12.60
Anions and Nutrients				
Sulphate	mg/L	-	-	879
Chloride	mg/L	-	-	6270
Fluoride	mg/L	-	-	<1.0
Ammonia (N-NH_3)	mg/L	-	-	<0.0050
Nitrite (N-NO_2)	mg/L	-	-	<0.10
Nitrate (N-NO_3)	mg/L	-	-	<0.50
Total Metals				
Aluminum, total (T-Al)	mg/L	-	-	0.0248
Antimony, total (T-Sb)	mg/L	-	-	<0.0010
Arsenic, total (T-As)	mg/L	-	-	0.00058
Barium, total (T-Ba)	mg/L	-	-	0.0087
Beryllium, total (T-Be)	mg/L	-	-	<0.00050
Boron, total (T-B)	mg/L	-	-	1.53
Cadmium, total (T-Cd)	mg/L	-	-	0.000035
Chromium, total (T-Cr)	mg/L	-	-	<0.00050
Cobalt, total (T-Co)	mg/L	-	-	0.000054
Copper, total (T-Cu)	mg/L	0.002	0.003	0.00069
Iron, total (T-Fe)	mg/L	-	-	0.022
Lead, total (T-Pb)	mg/L	0.002	0.14	<0.00010
Manganese, total (T-Mn)	mg/L	-	-	0.00325
Mercury, total (T-Hg) [2]	mg/L	0.00002	-	<0.00000050
Molybdenum, total (T-Mo)	mg/L	-	-	0.00342
Nickel, total (T-Ni)	mg/L	-	-	<0.00050
Selenium, total (T-Se)	mg/L	-	-	<0.00050
Silver, total (T-Ag)	mg/L	0.0015	0.003	<0.00010
Thallium, total (T-Tl)	mg/L	-	-	<0.000050
Uranium, total (T-U)	mg/L	-	-	0.00113
Vanadium, total (T-V)	mg/L	-	-	0.0006
Zinc, total (T-Zn)	mg/L	-	-	<0.0030
Hexavalent Chromium, total	mg/L	-	-	<0.00150
Dissolved Metals				
Cadmium, dissolved (D-Cd)	mg/L	-	-	0.000025
Copper, dissolved (D-Cu)	mg/L	-	-	<0.00050
Iron, dissolved (D-Fe)	mg/L	-	-	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	<0.00010
Manganese, dissolved (D-Mn)	mg/L	-	-	0.00239
Nickel, dissolved (D-Ni)	mg/L	-	-	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	1.6
Vanadium, dissolved (D-V)	mg/L	-	-	<0.00050
Zinc, dissolved (D-Zn)	mg/L	-	-	<0.0010
Polycyclic Aromatic Hydrocarbons (PAHs)				
Acenaphthene	mg/L	-	-	<0.000010
Acridine	mg/L	-	-	<0.000010
Anthracene	mg/L	-	-	<0.000010
Benz(a)anthracene	mg/L	-	-	<0.000010
Benzo(a)pyrene	mg/L	-	-	<0.0000050
Chrysene	mg/L	-	-	<0.000010
Fluoranthene	mg/L	-	-	<0.000010
Fluorene	mg/L	-	-	<0.000010
1-methylnaphthalene	mg/L	-	-	<0.000010
2-methylnaphthalene	mg/L	-	-	<0.000010
Naphthalene	mg/L	-	-	<0.000050
Phenanthrene	mg/L	-	-	<0.000020
Pyrene	mg/L	-	-	<0.000010
Quinoline	mg/L	-	-	<0.000050
Volatile Organic Compounds (VOCs)				
Benzene	mg/L	-	-	<0.00050
Ethylbenzene	mg/L	-	-	<0.00050
Methyl-tert-butyl-ether	mg/L	-	-	<0.00050
Styrene	mg/L	-	-	<0.00050
Toluene	mg/L	-	-	<0.00040
Total Xylenes	mg/L	-	-	<0.00050
Chlorobenzene	mg/L	-	-	<0.00050
1,2-Dichlorobenzene	mg/L	-	-	<0.00050

Notes:
Results in ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of estuarine water aquatic life.
Shaded results exceed the applicable short-term water quality guideline for the protection of estuarine water aquatic life.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] When MeHg ⩽ 0.5% of total Hg, BC WQG = 0.00002 mg/L.

Table F-2: Estuarine Water Methylmercury and Corresponding Total Mercury Results Received at the Time of Reporting.

Parameter					**Total Methylmercury**	**Total Mercury**
Unit					**µg/L**	**µg/L**
Lowest Applicable Guideline[1]					0.0001 [2]	0.020 – 0.026 [3,4]
Station	**Water Type**	**Sample ID**	**Lab ID**	**Sampling Date**		
SW-03	Mill Creek Estuary	SW-03	VA25A1730-003	2025-01-24	<0.000020	<0.00050

Notes:
Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of freshwater aquatic life.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] From BC Ambient Water Quality Guidelines for Mercury Overview Report. The methylmercury concentration threshold of 0.0001 µg/L (0.1 ng/L) is indicated as a WQG for the protection of wildlife and is set at a concentration that protects fish from mercury bioaccumulation to a level that may harm wildlife that consume fish.
[3] CCME guideline for total mercury = 0.026 µg/L.
[4] When MeHg ≤ 0.5% of total Hg, BC WQG = 0.02 µg/L. When MeHg > 0.5% of total Hg, BC WQG = 0.0001/(MeHg/Total Hg). Detection limit values are used to calculate the WQG for result reported as not detected.
Non-detect results are screened using the detection limit value.

Appendix G: Marine Water Receiving Environment Results

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

Parameter	Unit	Lowest Applicable Guideline [1]		Station IDZ-E1		Station IDZ-E2	
				0.5 m Below Surface	0.5 m Below Surface	0.5 m Below Surface	0.5 m Below Surface
				IDZ-E1-0.5	IDZ-E1-0.5-Lab [7]	IDZ-E2-0.5	IDZ-E2-0.5-Lab [7]
				VA25A2342-001	VA25A2342-002	VA25A2342-003	VA25A2342-004
		Long Term	Short Term	2025-02-02 16:27	2025-02-02 16:31	2025-02-02 16:05	2025-02-02 16:21
General Parameters							
pH - Field	pH units	7.0 - 8.7	-	7.88	-[7]	7.85	-[7]
Specific Conductivity - Field	µS/cm	-	-	23776	-[7]	22812	-[7]
Temperature - Field	℃	-	-	5.8	-[7]	5.5	-[7]
Salinity - Field	ppt	Narrative[2]	-	23.44	-[7]	22.62	-[7]
Turbidity - Field	NTU	Narrative[2]	Narrative[2]	1.11	-[7]	0.93	-[7]
TSS	mg/L	Narrative[2]	Narrative[2]	<3.0	-[7]	<3.0	-[7]
Dissolved Oxygen - Field	mg/L	>=8	-	10.57	-[7]	10.38	-[7]
Anions and Nutrients							
Sulphate	mg/L	-	-	-[6]	-[7]	-[6]	-[7]
Chloride	mg/L	-	-	-[6]	-[7]	-[6]	-[7]
Fluoride	mg/L	-	1.5	-[6]	-[7]	-[6]	-[7]
Ammonia (N-NH_3)	mg/L	4.7 [3]	31 [3]	-[6]	-[7]	-[6]	-[7]
Nitrite (N-NO_2)	mg/L	-	-	-[6]	-[7]	-[6]	-[7]
Nitrate (N-NO_3)	mg/L	3.7	339	-[6]	-[7]	-[6]	-[7]
Total Metals							
Aluminum, total (T-Al)	mg/L	-	-	0.0173	0.017	0.0166	0.0165
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	<0.0010	<0.0010	<0.0010	<0.0010
Arsenic, total (T-As)	mg/L	0.0125	0.0125	0.00121	0.00121	0.00129	0.0012
Barium, total (T-Ba)	mg/L	-	-	0.0102	0.0098	0.0105	0.01
Beryllium, total (T-Be)	mg/L	0.1	-	<0.00050	<0.00050	<0.00050	<0.00050
Boron, total (T-B)	mg/L	1.2	-	***3.19***	***3.49***	***3.46***	***3.64***
Cadmium, total (T-Cd)	mg/L	0.00012	-	0.000068	0.000066	0.000074	0.000071
Chromium, total (T-Cr)	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt, total (T-Co)	mg/L	-	-	0.000076	0.000074	0.000081	0.000074
Copper, total (T-Cu)	mg/L	0.002	0.003	0.00074	0.00076	0.00093	0.00086
Iron, total (T-Fe)	mg/L	-	-	0.055	0.054	0.058	0.054
Lead, total (T-Pb)	mg/L	0.002	0.14	<0.00010	<0.00010	<0.00010	<0.00010
Manganese, total (T-Mn)	mg/L	-	-	0.00612	0.00588	0.00687	0.00646
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	<0.0000050	-[7]	<0.0000050	-[7]
Molybdenum, total (T-Mo)	mg/L	-	-	0.00700	0.00667	0.00694	0.00667
Nickel, total (T-Ni)	mg/L	0.0083	-	<0.00050	<0.00050	<0.00050	<0.00050
Selenium, total (T-Se)	mg/L	0.002	-	<0.00050	<0.00050	0.00099	0.0006
Silver, total (T-Ag)	mg/L	0.0015	0.003	<0.00010	<0.00010	<0.00010	<0.00010
Thallium, total (T-Tl)	mg/L	-	-	<0.000050	<0.000050	<0.000050	<0.000050
Uranium, total (T-U)	mg/L	-	-	0.00215	0.00219	0.0021	0.00206
Vanadium, total (T-V)	mg/L	0.005	-	0.00126	0.00118	0.00127	0.00124
Zinc, total (T-Zn)	mg/L	0.01	0.055	<0.0030	<0.0030	<0.0030	<0.0030
Hexavalent Chromium, total	mg/L	0.0015	-	-[6]	-[7]	-[6]	-[7]
Dissolved Metals							
Cadmium, dissolved (D-Cd)	mg/L	-	-	0.000051	0.000058	0.000061	0.000064
Copper, dissolved (D-Cu)	mg/L	-	-	0.00056	0.00059	0.00053	0.00066
Iron, dissolved (D-Fe)	mg/L	-	-	<0.010	<0.010	<0.010	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Manganese, dissolved (D-Mn)	mg/L	-	-	0.00467	0.00541	0.0052	0.00597
Nickel, dissolved (D-Ni)	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	4.27	4.74	4.34	4.58
Vanadium, dissolved (D-V)	mg/L	-	-	0.00107	0.00112	0.00108	0.00114
Zinc, dissolved (D-Zn)	mg/L	-	-	0.0021	0.0021	0.0018	0.0026
Polycyclic Aromatic Hydrocarbons (PAHs)							
Acenaphthene	mg/L	0.006	-	-[6]	-[7]	-[6]	-[7]
Acridine	mg/L	-	-	-[6]	-[7]	-[6]	-[7]
Anthracene	mg/L	-	-	-[6]	-[7]	-[6]	-[7]
Benz(a)anthracene	mg/L	-	-	-[6]	-[7]	-[6]	-[7]
Benzo(a)pyrene	mg/L	0.00001	-	-[6]	-[7]	-[6]	-[7]
Chrysene	mg/L	0.0001	-	-[6]	-[7]	-[6]	-[7]
Fluoranthene	mg/L	-	-	-[6]	-[7]	-[6]	-[7]
Fluorene	mg/L	0.012	-	-[6]	-[7]	-[6]	-[7]
1-methylnaphthalene	mg/L	0.001	-	-[6]	-[7]	-[6]	-[7]
2-methylnaphthalene	mg/L	0.001	-	-[6]	-[7]	-[6]	-[7]
Naphthalene	mg/L	0.001	-	-[6]	-[7]	-[6]	-[7]
Phenanthrene	mg/L	-	-	-[6]	-[7]	-[6]	-[7]
Pyrene	mg/L	-	-	-[6]	-[7]	-[6]	-[7]
Quinoline	mg/L	-	-	-[6]	-[7]	-[6]	-[7]
Volatile Organic Compounds (VOCs)							
Benzene	mg/L	0.11	-	-[6]	-[7]	-[6]	-[7]
Ethylbenzene	mg/L	0.25	-	-[6]	-[7]	-[6]	-[7]
Methyl-tert-butyl-ether	mg/L	5	0.44	-[6]	-[7]	-[6]	-[7]
Styrene	mg/L	-	-	-[6]	-[7]	-[6]	-[7]
Toluene	mg/L	0.215	-	-[6]	-[7]	-[6]	-[7]
Total Xylenes	mg/L	-	-	-[6]	-[7]	-[6]	-[7]
Chlorobenzene	mg/L	0.025	-	-[6]	-[7]	-[6]	-[7]
1,2-Dichlorobenzene	mg/L	0.042	-	-[6]	-[7]	-[6]	-[7]

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.

[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

[2] Narrative guideline for the evaluation of change from background conditions arising from discharges to the aquatic environment. Salinity WQG was not evaluated. The water quality data presented in the table were collected when the site was not discharging, therefore the turbidity and TSS WQGs were not evaluated.

[3] The approved total ammonia nitrogen BC WQG is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document.

[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 ⩽ 0.5% of total Hg, BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.

[6] General parameters, speciated metals, PAHs, and VOCs were not analyzed for samples collected February 2. These samples are supplemental to PE-111578 monitoring requirements.

[7] A second set of total and dissolved metals bottles were submitted to the laboratory, excluding mercury and speciated metals, for the IDZ-E1 and IDZ-E2 samples collected February 2 at 0.5 m below the water surface. The additional metal bottles were filtered, digested and preserved by the laboratory.

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

Parameter	Unit	Lowest Applicable Guideline [1]		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
				IDZ-E1-0.5	IDZ-E1-2m	IDZ-E1-SF	IDZ-E2-0.5	IDZ-E2-2m	IDZ-E2-SF
				VA25A1914-001	VA25A1914-002	VA25A1914-003	VA25A1914-004	VA25A1914-005	VA25A1914-006
		Long Term	Short Term	2025-01-28 12:42	2025-01-28 12:44	2025-01-28 12:46	2025-01-28 12:34	2025-01-28 12:32	2025-01-28 12:36
General Parameters									
pH - Field	pH units	7.0 - 8.7	-	7.8	7.7	7.6	7.7	7.7	7.6
Specific Conductivity - Field	µS/cm	-	-	21168	24063	30562	21717	25202	30668
Temperature - Field	℃	-	-	5.7	6.3	9.0	5.7	6.4	9.0
Salinity - Field	ppt	Narrative [2]	-	20.69	23.73	28.21	21.27	24.58	28.27
Turbidity - Field	NTU	Narrative [2]	Narrative [2]	1.12	1.03	0.67	1.10	0.99	0.66
TSS	mg/L	Narrative [2]	Narrative [2]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Dissolved Oxygen - Field	mg/L	≥8	-	10.39	9.80	***7.49***	10.15	9.70	***6.89***

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.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] Narrative guideline for the evaluation of change from background conditions arising from discharges to the aquatic environment. Salinity WQG was not evaluated. The water quality data presented in the table were collected when the site was not discharging, therefore the turbidity and TSS WQGs were not evaluated.

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

Parameter	Unit	Lowest Applicable Guideline [1]		Station IDZ-W1			Station IDZ-W2		
				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
				IDZ-W1-0.5	IDZ-W1-2m	IDZ-W1-SF	IDZ-W2-0.5	IDZ-W2-2m	IDZ-W2-SF
				VA25A1914-007	VA25A1914-008	VA25A1914-009	VA25A1914-010	VA25A1914-011	VA25A1914-012
		Long Term	Short Term	2025-01-28 12:18	2025-01-28 12:20	2025-01-28 12:22	2025-01-28 12:08	2025-01-28 12:10	2025-01-28 12:12
General Parameters									
pH - Field	pH units	7.0 - 8.7	-	7.7	7.7	7.6	7.6	7.7	7.5
Specific Conductivity - Field	µS/cm	-	-	21521	23042	31122	22422	22719	30989
Temperature - Field	℃	-	-	5.9	5.9	9.2	5.8	5.7	9.1
Salinity - Field	ppt	Narrative [2]	-	20.94	22.59	28.60	21.98	22.37	28.50
Turbidity - Field	NTU	Narrative [2]	Narrative [2]	3.17	1.04	0.66	1.12	1.01	0.60
TSS	mg/L	Narrative [2]	Narrative [2]	<2.0	<2.0	<2.0	<2.0	<2.0	4.2
Dissolved Oxygen - Field	mg/L	≥8	-	10.29	9.76	***6.62***	10.30	9.83	***6.61***

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.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] Narrative guideline for the evaluation of change from background conditions arising from discharges to the aquatic environment. Salinity WQG was not evaluated. The water quality data presented in the table were collected when the site was not discharging, therefore the turbidity and TSS WQGs were not evaluated.

Table G-4: Marine Water Dioxin and Furan Toxicity Equivalency Quantity (TEQ) Results Received at the Time of Reporting.

Parameter					Lower Bound PCDD/F TEQ	Upper Bound PCDD/F TEQ
Unit					pg/L	pg/L
Station	Water Type	Sample ID	Lab ID	Sampling Date		
Station IDZ-E1						
IDZ-E1	0.5 m Below Surface	IDZ-E1-0.5	L2758450-1	2024-12-16	0.00282	1.20
IDZ-E1	2 m Below Surface	IDZ-E1-2m	L2758450-2	2024-12-16	0.00641	1.20
IDZ-E1	2 m Above Seafloor	IDZ-E1-SF	L2758450-3	2024-12-16	0.0128	1.58
Station IDZ-E2						
IDZ-E2	0.5 m Below Surface	IDZ-E2-0.5	L2758450-4	2024-12-16	0.0388	1.69
IDZ-E2	2 m Below Surface	IDZ-E2-2m	L2758450-5	2024-12-16	0.00265	1.36
IDZ-E2	2 m Above Seafloor	IDZ-E2-SF	L2758450-6	2024-12-16	0	1.45
Reference Station WQR1						
WQR1	0.5 m Below Surface	WQR1-0.5	L2758617-7	2025-01-08	0	0.744
WQR1	2 m Below Surface	WQR1-2m	L2758617-8	2025-01-08	0.00128	1.32
WQR1	2 m Above Seafloor	WQR1-SF	L2758617-9	2025-01-08	0	0.921

Notes:
PCDD = polychlorinated dibenzodioxins (dioxins)
PCDF = polychlorinated dibenzofurans (furans)
TEQ = toxic equivalency
Lower bound PCDD/F TEQ is the sum of the toxic equivalency results for the individual PCDD/F parameters. Non-detectable parameters are assigned a value of zero (0).
Upper bound PCDD/F TEQ is the sum of the toxic equivalency results for the individual PCDD/F parameters. Non-detectable parameters are assigned the value of the detection limit.