TECHNICAL MEMORANDUM

To:	**Ian McAllister, Ashleigh Crompton, Mike Champion, Jackie Boruch and Ryan Schucroft (Woodfibre LNG)**	**Date:**	**11 Apr 2025**
From:	**Holly Pelletier, Cheng Kuang and Patrick Mueller (Lorax)**	**Project #:**	**A633-9**
Subject:	**PE-111578 Weekly Discharge and Compliance Report #58 for March 30 – April 5**		

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 #58) was prepared by Lorax Environmental and summarizes WDA monitoring conducted for the period of March 30 – April 5. 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 #58 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 E 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 March 30 – April 5, 2025 monitoring period. Land-based construction occurs within two areas east and west of Mill Creek, referred to as the East and West Catchments, respectively. Non-contact water is intercepted and diverted around the construction areas to Howe Sound and Mill Creek. Stormwater runoff collected within the east and west catchment areas (7.12 and 5.92 ha, respectively) is managed as site contact water and is conveyed to the East Wastewater Treatment Plant (WWTP) or the East and West Sedimentation Ponds for treatment or settling of suspended particulate. Discharge to Howe Sound from the East and West Sedimentation Ponds commenced April and October 2024, respectively.

Non-contact water diversion ditches west of Mill Creek have been 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.

The West WWTP has been constructed, and pilot testing was conducted August and September 2024. 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.

The east and west catchment permanent outfall structures have been completed; however, the East and West Sedimentation Pond effluent conveyance pipelines from the ponds to the outfalls are not yet constructed. Temporary pumps and hoses are used to transfer clarified or treated effluent to the authorized outfall structures for discharge to Howe Sound. In the east catchment, treated WWTP effluent is directed to the East Sedimentation Pond. Since December 2, 2024, sedimentation pond effluent clarified through the E500GPM is directed to the discharge tank and from there is discharged to Howe Sound at location SP-E-OUT. 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 (SP-E-OUT and SP-W-OUT) 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 (March 30 – April 5), with precipitation recorded on March 31, April 1, and April 2. The total precipitation amount during the monitoring period was 14.2 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
2025-03-30	0	17.3	4.1	Clear
2025-03-31	6.6	12.4	6.9	Overcast with Showers
2025-04-01	0.2	12.0	4.8	Light Showers
2025-04-02	7.4	11.3	5.7	Overcast with Showers
2025-04-03	0	14.9	4.5	Clear
2025-04-04	0	14.9	4.0	Clear
2025-04-05	0	18.8	5.0	Clear

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

From March 30 – April 5, the East Sedimentation Pond received non-contaminated contact water from sumps and tanks in the 1100 and 1200 Areas (Appendix A, Figure 2). Non-contaminated contact waters from Area 4100 Sump, Area 4200 Sump, and the Surge Pond were directed to the West Sedimentation Pond (Appendix A, Figure 3).

Routine operation of the East WWTP continued during the monitoring period. Concrete contact waters 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 was discharged to the East Sedimentation Pond each day during the monitoring period. A portion of the pond water clarified through the E500GPM system was recirculated to the East Sedimentation Pond each day of the monitoring period, except on March 31, April 2, and April 3 as the E500GPM system was not operational on those days. A total of 1,233 m^3 of East Sedimentation Pond effluent clarified through the TSS settling system (E500GPM) was directed to the authorized discharge location SP-E-OUT on April 1 and April 5. Daily water volumes processed by the East WWTP and the East TSS settling system (E500GPM), and volumes discharged to Howe Sound from the East Catchment authorized discharge location (SP-E-OUT) are provided in Appendix B (Table B-5).

West Sedimentation Pond water was clarified through the W500GPM TSS settling systems prior to discharge. The ESC system was not operational during the monitoring period. A portion of the pond water clarified through the W500GPM settling system was recirculated to the West Sedimentation Pond on March 31 and April 3. A total of 2,962 m^3 of effluent was clarified through the W500GPM system and directed to the SP-W-OUT discharge location on March 31, April 2, April 3, and April 4. Daily clarified effluent volumes from the TSS settling systems, and volumes discharged to Howe Sound from the West Catchment authorized discharge location (SP-W-OUT) 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 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) located in-pond, at the influent end of each pond.

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. Influent and effluent are monitored at stations 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 SW-01, SW-02, SW-03, SW-04, SW-07, IDZ-E1, IDZ-E2, IDZ-W1, IDZ-W2, WWTP-E-IN, WWTP-E-OUT, SP-E-IN, SP-E-OUT, E500GPM-IN, E500GPM-OUT, SP-W-IN, SP-W-OUT, W500GPM-IN, and W500GPM-OUT during the monitoring period (March 30 – April 5). Sampling dates and parameters tested are summarized in Table 2.

Overall, the PE-111578 monitoring requirements that were applicable during the monitoring period (March 30 – April 5) were met.

Daily field parameters were not collected at effluent station SP-E-OUT on April 5 since there was no effluent discharged from the authorized discharge location at the time of monitoring. 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 it was not operational during the monitoring period.

Table 2: Summary of PE-111578 Monitoring Samples Collected March 30 – April 5.

Sampling Date	Sample	Description	Parameters Tested	Monitoring Frequency
March 30, 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		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
March 31, 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		
	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
	SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port	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		
April 1, 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
	SP-E-OUT	East Sedimentation Pond clarified effluent discharge to Howe Sound, collected at the manhole adjacent to the outfall	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, 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		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
April 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		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port	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		
	SW-01	Lower Reach of Woodfibre Creek (near the mouth)	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans.	M_5
	SW-02	Upper Reach of Mill Creek (upstream of the third bridge)		
	SW-03	Mill Creek Estuary		
	SW-04	Lower Reach of East Creek (near the outlet to the outfall culvert)		
	SW-07	Upstream Mill Creek (at the diversion inlet)		
April 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		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port	Field Parameters.	D
	W500GPM-OUT	West Sedimentation Pond 500 GPM TSS settling system at the effluent meter box	Field Parameters.	P
	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		

Table 2 (continued): Summary of PE-111578 Monitoring Samples Collected March 30 – April 5.

Sampling Date	Sample	Description	Parameters Tested	Monitoring Frequency
April 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	Field Parameters, Total & Dissolved Metals.	P
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port	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		
April 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 Parameters.	D
	WWTP-E-OUT	East WWTP at the effluent meter box		
	E500GPM-OUT	East Sedimentation Pond 500 GPM TSS settling system at the effluent meter box	Field Parameters.	P
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D

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.
M_5 – spring high frequency (5-in-30) sampling for 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 a total of 210 polychlorinated dibenzo-*p*-dioxin (PCDD) and polychlorinated dibenzofuran (PCDF) compounds. A sub-set of 17 of the most toxic PCDDs and PCDFs are typically evaluated for toxicity by converting the individual parameter concentrations to toxic equivalent (TEQ) values that are summed and evaluated 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 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 to levels that could 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 (March 30 – April 5) 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:

- SP-W-IN and SP-W-OUT collected March 5 (dioxins and furans)
- SP-E-IN, SP-E-OUT, WWTP-E-IN, WWTP-E-OUT, SP-W-IN, and SP-W-OUT collected March 11 (dioxins and furans)
- IDZ-W1, IDZ-W2, and WQR2 collected March 12 (dioxins and furans)
- IDZ-E1, IDZ-E2, and WQR1 collected March 13 (dioxins and furans)
- SP-E-IN, SP-E-OUT, WWTP-E-IN, and WWTP-E-OUT collected March 17 (dioxins and furans)
- SP-W-IN and SP-W-OUT collected March 18 (dioxins and furans)
- SP-E-IN, SP-E-OUT, WWTP-E-IN, WWTP-E-OUT, SP-W-IN, and SP-W-OUT collected March 24 (dioxins and furans)
- IDZ-E1, IDZ-E2, IDZ-W1, IDZ-W2, WQR1, WQR2 collected March 25 at 0.5 m below surface (chronic toxicity)
- SP-W-IN and SP-W-OUT collected March 31 (dioxins and furans)
- SP-E-IN, SP-E-OUT, WWTP-E-IN, and WWTP-E-OUT collected April 1 (methylmercury, dioxins and furans)
- SW-01, SW-02, SW-03, SW-04, and SW-07 collected April 2 (field and all analytical parameters)
- IDZ-E1, IDZ-E2, IDZ-W1, and IDZ-W2 collected April 3 (field and all analytical parameters)

Table 3: Summary of Analytical Results Included in Weekly Discharge and Compliance Report #58.

Sample	Description	Sampling Date	Parameters Reported
SW-02	Upper Reach of Mill Creek (upstream of the third bridge)	March 18, 2024	Dioxins and Furans.
SW-03	Mill Creek Estuary		
SW-07	Upstream Mill Creek (at the diversion inlet)		
SW-01	Lower Reach of Woodfibre Creek (near the mouth)	March 19, 2024	Methylmercury, Dioxins and Furans.
SW-04	Lower Reach of East Creek (near the outlet to the outfall culvert)		
SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	March 11, 2025	Methylmercury.
SP-E-OUT	East Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port		
WWTP-E-IN	East WWTP at the influent meter box		
WWTP-E-OUT	East WWTP at the effluent meter box		
SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1		
SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port		
SP-E-OUT	East Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port	March 24, 2025	Acute Toxicity
SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port		
SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	March 31, 2025	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, VOCs, and Methylmercury.
SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port		
SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	April 1, 2025	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, and VOCs.
SP-E-OUT	East Sedimentation Pond clarified effluent discharge to Howe Sound, collected at the manhole adjacent to the outfall		
WWTP-E-IN	East WWTP at the influent meter box		
WWTP-E-OUT	East WWTP 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 (March 30 – April 5), clarified water from the East Sedimentation Pond TSS settling system (E500GPM) discharged to Howe Sound at the authorized discharge location (station SP-E-OUT) on April 1 and April 5. Daily clarified effluent volumes, East WWTP treated effluent volumes, and discharge volumes from the East Catchment are summarized in Appendix B, Table B-5.

Field measurements were collected March 30 – April 5 at multiple influent and effluent locations, as outlined in Section 2, and are tabulated in Appendix B, Table B-4. Analytical samples collected on April 1 (stations SP-E-IN, WWTP-E-IN, WWTP-E-OUT, and SP-E-OUT) were available at the time of reporting. Screening results for East Catchment contact water quality are tabulated in Table B-1 and Table B-2 of Appendix B.

During the monitoring period (March 30 – April 5), field measurements and analytical results collected at SP-E-OUT met PE-111578 discharge limits and WQGs, except for hexavalent chromium (Table 4).

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
Hexavalent Chromium	mg/L	0.0015	1	1	Hexavalent chromium measured at station SP-E-OUT on April 1 (0.00205 mg/L) was 1.4 times greater than the WQG. The on-site QEP assessed that the measured hexavalent chromium concentration in effluent presented a negligible to low risk to the receiving environment and is compliant with PE-111578 Condition 2.1.9.

N = number of samples.
Non-detect results are screened using the detection limit value.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

Dissolved oxygen was below the lower limit of the MDO in East WWTP effluent (WWTP-E-OUT) collected April 2. East WWTP treated effluent is directed to the East Sedimentation Pond.

Methylmercury analytical results were available at the time of reporting for East WWTP influent and effluent (WWTP-E-IN and WWTP-E-OUT, respectively), East Sedimentation Pond influent (SP-E-IN), and effluent discharged at SP-E-OUT on March 11. The methylmercury concentration in the effluent discharged at SP-E-OUT on March 11 was 0.000038 and 0.000032 µg/L in the monitoring and duplicate samples, respectively (Appendix B, Table B-3). Methylmercury results and the corresponding total mercury results met the respective WQGs (see Section 3.1) in the SP-E-OUT sample.

Acute toxicity test results for the March 24 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, dioxins and furans are summarized below.

During the monitoring period (March 30 – April 5), the TSS settling system (W500GPM) treated water stored in the West Sedimentation Pond each day, except on March 31, April 1, and April 5, and produced clarified effluent that was discharged to Howe Sound on March 31 and April 2 to 4 at the authorized discharge location, SP-W-OUT. The smaller TSS settling system (ESC) was not operational during the monitoring period. Daily clarified effluent and discharge volumes from the West Catchment are summarized in Appendix C, Table C-5.

Field measurements were collected March 30 – April 5 at multiple influent and effluent locations, as outlined in Section 2, and are tabulated in Appendix C, Table C-4. Analytical samples collected on March 31 (SP-W-IN and SP-W-OUT) were available at the time of reporting. Screening results for West Catchment contact water quality are tabulated in Table C-1 and Table C-2 of Appendix C.

During the monitoring period (March 30 – April 5), field measurements and analytical results for the effluent sample collected at station SP-W-OUT on March 31 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) and effluent (station SP-W-OUT) collected March 11 (as discussed in Report #55) and March 31. The methylmercury concentration in the effluent discharged at SP-W-OUT on March 11 and 31 was 0.000022 and <0.000020 µg/L, respectively (Appendix B, Table C-3). Methylmercury results and the corresponding total mercury results met the respective WQGs (see Section 3.1) in the SP-W-OUT sample.

Acute toxicity test results for the March 24 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 West 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. 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 not available at the time of reporting for non-contact water diversion ditch outlet samples.

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 D (freshwater) and Appendix E (estuarine).

Methylmercury results were available at the time of reporting for freshwater samples collected March 19 (as discussed in Report #56). Methylmercury concentrations were <0.00002 µg/L in all samples and met the WQG. The corresponding total mercury results also met WQGs. Results are tabulated in Appendix D, Table D-1.

Dioxin and furan results were available at the time of reporting for freshwater and estuarine water samples collected March 18 (SW-02, SW-03, and SW-07) and March 19 (SW-01 and SW-04) (as discussed in Report #56). The lower and upper bound PCDD/F TEQ concentrations in all samples ranged from 0 to 0.0582 pg/L and from 1.42 to 3.39 pg/L, respectively. The lower and upper bound PCDD/F TEQ concentrations were within the concentration ranges observed in the baseline monitoring program. Results are tabulated in Appendix D, Table D-2 (freshwater) and Appendix E, Table E-1 (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.

Analytical results were not available at the time of reporting for marine water receiving environment samples.

4. Quality Control

This section presents the results of the quality control (QC) evaluation for the PE-111578 weekly report (Table 5). 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 5. Any items flagged for follow-up are carried forward to future reports until they are closed.

Table 5: Weekly Report QC Evaluations and Ongoing Items

QC Procedure	Observation	Investigation/Resolution
Reporting Period (March 30 – April 5, Report #58)		
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. West Sedimentation Pond clarified water has been pumped through temporary hoses to the permanent outfall structure since December 2024 and pumping of East Sedimentation Pond to the permanent outfall structure commenced March 2025. 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. This item remains open.
Pending Data	Analytical results not reported.	Analytical results for receiving environment samples collected April 2 and April 3 were not complete at the time of Report #58 preparation. Methylmercury, dioxins and furans results for contact water samples collected March 31 (dioxins and furans only) and April 1 were not complete at the time of Report #58 preparation. The pending results will be included in future weekly reports when available. This item remains open.
Ongoing Items from Previous Weekly Reports		
Report #54: Pending Data	Analytical results not reported.	Dioxins and furans results for contact water samples collected March 5 were not complete at the time of Report #58 preparation. The pending results will be included in future weekly reports when available. This item remains open.
Report #55: Pending Data	Analytical results not reported.	Methylmercury results for contact water samples collected March 11 are discussed in Sections 3.3 and 3.4 of Report #58. Dioxins and furans results for contact water samples collected March 11 and for receiving environment samples collected March 13 were not complete at the time of Report #58 preparation. The pending results will be included in future weekly reports when available. This item remains open.
Report #56: 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), February 5 and 6 results (Report #50), February 10 results (Report #51), February 15 and 20 results (Report #52), February 24 results (Report #53), March 8 results (Report #55), and March 17 results (Report #56). The total copper concentrations were 0.00809, 0.00595, 0.00895, 0.00518, 0.00542, 0.00525, and 0.00450 mg/L in samples collected at WWTP-E-OUT on January 8, 14, 24, 28, February 24, March 8, and 17 respectively, and ranged from 0.00613 to 0.0108 mg/L in four replicate samples collected on February 15. The total mercury concentrations were 0.0000355, 0.000185, 0.000223, and 0.0000882 mg/L in samples collected on January 24, 30, February 20 and 24, respectively, and were 0.0000615 and 0.0000644 mg/L in two replicate samples collected February 15. The total zinc concentrations were 0.0137, 0.0152, and 0.0156 mg/L in the samples collected on January 24, February 20 and 24, and were 0.0223 and 0.0234 mg/L in two of four replicate samples collected February 15. 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, 9.2, and 9.6 in samples collected at WWTP-E-OUT on February 5, 6 and 10, respectively. 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 has been directed to the East Sedimentation Pond since January 24. Review of possible causes has yielded inconclusive results. This item remains open until sufficient monitoring data are collected to indicate the issues are resolved.
Report #56: Pending Data	Analytical results not reported.	Dioxins and furans results for receiving environment samples collected March 18 and 19 and methylmercury results for samples collected March 19 are discussed in Section 3.6 of Report #58. Dioxins and furans results for contact water samples collected March 17 and 18 were not complete at the time of Report #58 preparation. The pending results will be included in future weekly reports when available. This item remains open.
Report #57: Pending Data	Analytical results not reported.	Acute toxicity results for East and West Catchment effluent are discussed in Sections 3.3 and 3.4 of Report #58. Dioxins and furans results for contact water samples collected March 24 and chronic toxicity results for marine receiving environment samples collected March 25 were not complete at the time of Report #58 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.

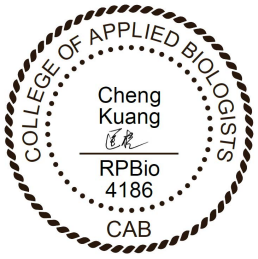
5. Closure

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.

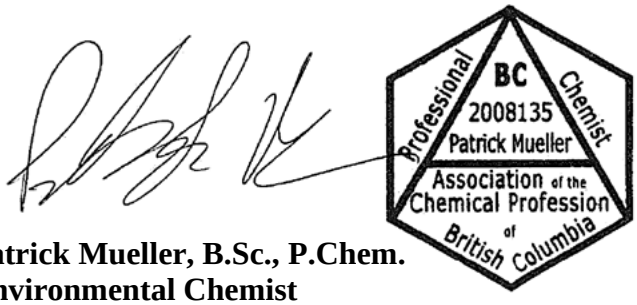
Regards,

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

World Imagery: District of Squamish. Additional imagery provided by McDermott International captured March 21st, 2025.

LEGEND

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

DATE SAVED:	Apr 11, 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 (April 5, 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

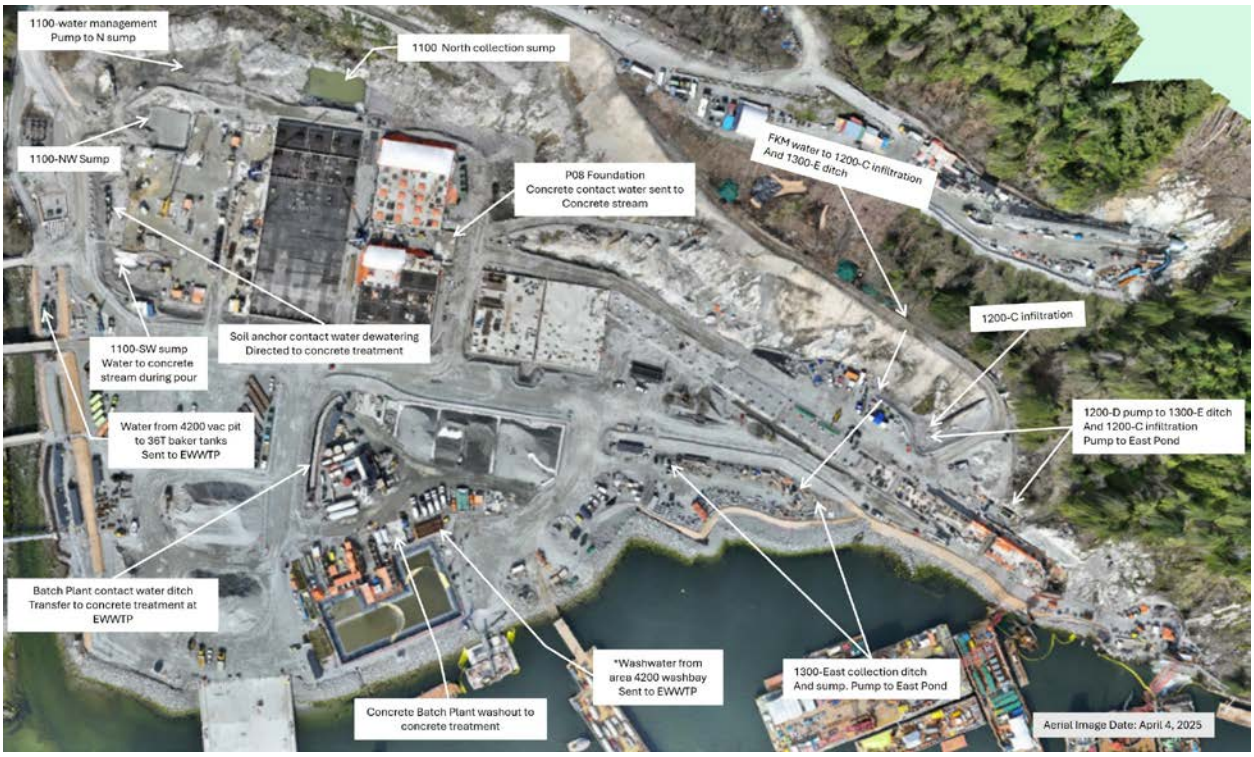


Figure 2: East Catchment contact water management facilities (March 30 – April 5).

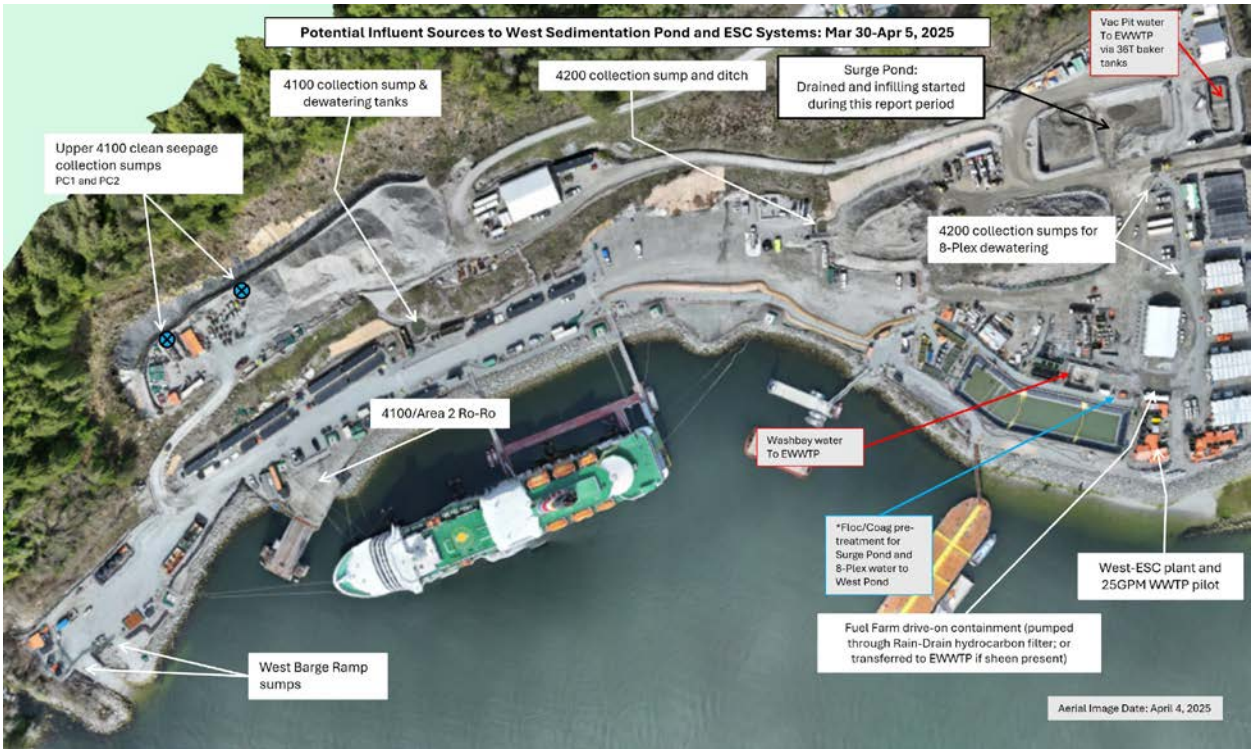


Figure 3: West Catchment contact water management facilities (March 30 – April 5).

Figure 4: Aerial view of the East Sedimentation Pond (April 4, 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 (April 4, 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 WWTP-E-IN	Station SP-E-IN
					Influent	Influent
					WWTP-E-IN	SP-E-IN
					VA25A7142-003	VA25A7142-001
		Long Term	Short Term		2025-04-01 14:00	2025-04-01 14:15
General Parameters						
pH - Field	pH units	- [2]	-	5.5 - 9.0	7.2	7.1
Conductivity - Field	µS/cm	-	-	-	1358	969
Temperature - Field	°C	-	-	-	12.9	12.1
Salinity - Field	ppt	-	-	-	0.9	0.65
Turbidity - Field	NTU	-	-	-	11.56	39.12
TSS	mg/L	-	-	25 [6]	17.7	50.7
Dissolved Oxygen - Field	mg/L	≥8	-	-	10.7	10.6
Anions and Nutrients						
Sulphate	mg/L	-	-	-	684	426
Chloride	mg/L	-	-	-	10.2	11.3
Fluoride	mg/L	-	1.5	-	<0.200	0.17
Ammonia (N-NH_3)	mg/L	12-20 [3]	83-131 [3]	-	0.0482	0.0186
Nitrite (N-NO_2)	mg/L	-	-	-	<0.0100	0.0066
Nitrate (N-NO_3)	mg/L	3.7	339	-	0.525	0.508
Total Metals						
Aluminum, total (T-Al)	mg/L	-	-	-	1.22	3.77
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00125	0.00124
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00196	0.00387
Barium, total (T-Ba)	mg/L	-	-	-	0.0249	0.0398
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000040	0.000079
Boron, total (T-B)	mg/L	1.2	-	-	0.057	0.107
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	0.0000638	***0.000142***
Chromium, total (T-Cr)	mg/L	-	-	-	0.00252	0.00763
Cobalt, total (T-Co)	mg/L	-	-	-	0.00055	0.00114
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.0046	0.0107
Iron, total (T-Fe)	mg/L	-	-	-	0.964	2.76
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.00161	0.00478
Manganese, total (T-Mn)	mg/L	-	-	-	0.0713	0.111
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	0.0000135	***0.0000439***
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0807	0.08
Nickel, total (T-Ni)	mg/L	0.0083	-	-	0.00104	0.00179
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000286	0.0003
Silver, total (T-Ag)	mg/L	0.0005	0.0037	-	<0.000020	0.000023
Thallium, total (T-Tl)	mg/L	-	-	-	0.000048	0.000043
Uranium, total (T-U)	mg/L	-	-	-	0.0091	0.0185
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.0047	0.00835
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	0.0214	0.0299
Hexavalent Chromium, total	mg/L	0.0015	-	-	<0.00050	***0.00235***
Dissolved Metals						
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000450	<0.0000450
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00202	0.00253
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.020	0.043
Lead, dissolved (D-Pb)	mg/L	-	-	-	<0.000100	0.000134
Manganese, dissolved (D-Mn)	mg/L	-	-	-	1.94	1.8
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00100	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.356	0.299
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00302	0.0039
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0111	0.0032
Polycyclic Aromatic Hydrocarbons (PAHs)						
Acenaphthene	mg/L	0.006	-	-	<0.00001	<0.00001
Acridine	mg/L	-	-	-	<0.00001	<0.00001
Anthracene	mg/L	-	-	-	<0.00001	<0.00001
Benz(a)anthracene	mg/L	-	-	-	<0.00001	<0.00001
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.000005	0.0000053
Chrysene	mg/L	0.0001	-	-	<0.00001	<0.00001
Fluoranthene	mg/L	-	-	-	<0.00001	0.000013
Fluorene	mg/L	0.012	-	-	<0.00001	<0.00001
1-methylnaphthalene	mg/L	0.001	-	-	<0.00001	<0.00001
2-methylnaphthalene	mg/L	0.001	-	-	<0.00001	<0.00001
Naphthalene	mg/L	0.001	-	-	<0.00005	<0.00005
Phenanthrene	mg/L	-	-	-	<0.00002	<0.00002
Pyrene	mg/L	-	-	-	<0.00001	0.000012
Quinoline	mg/L	-	-	-	0.000189	0.000661
Volatile Organic Compounds (VOCs)						
Benzene	mg/L	0.11	-	-	<0.0005	<0.0005
Ethylbenzene	mg/L	0.25	-	-	<0.0005	<0.0005
Methyl-tert-butyl-ether	mg/L	5	0.44	-	<0.0005	<0.0005
Styrene	mg/L	-	-	-	<0.0005	<0.0005
Toluene	mg/L	0.215	-	-	<0.0004	<0.0004
Total Xylenes	mg/L	-	-	-	<0.0005	<0.0005
Chlorobenzene	mg/L	0.025	-	-	<0.0005	<0.0005
1,2-Dichlorobenzene	mg/L	0.042	-	-	<0.0005	<0.0005

Notes: Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of marine water aquatic life.
Shaded results exceed the applicable short-term water quality guideline for the protection of marine water aquatic life.
Results in orange text exceeded the PE-111578 East Sedimentation Pond Discharge Limit.
The East Catchment discharged during the monitoring period (March 30 – April 5) on April 1 and April 5.
[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. The discharge limit for Wet Conditions did not apply during the monitoring period (March 30 – April 5).

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 SP-E-OUT	Station WWTP-E-OUT	Station E500GPM-OUT
					Effluent	Effluent	Effluent
					SP-E-OUT	WWTP-E-OUT	E500GPM-OUT
					VA25A7142-002	VA25A7142-004	VA25A7510-001
		Long Term	Short Term		2025-04-01 13:34	2025-04-01 13:51	2025-04-04 11:50
General Parameters							
pH - Field	pH units	- [2]	-	5.5 - 9.0	7.9	6.0	7.2
Conductivity - Field	µS/cm	-	-	-	379	1618	1371
Temperature - Field	°C	-	-	-	8.4	12.3	12.6
Salinity - Field	ppt	-	-	-	0.27	1.1	0.92
Turbidity - Field	NTU	-	-	-	0.64	0.46	1.1
TSS	mg/L	-	-	25 [6]	<3.0	<3.0	<3.1
Dissolved Oxygen - Field	mg/L	≥8	-	-	9.45	10.12	11.1
Anions and Nutrients							
Sulphate	mg/L	-	-	-	145	866	- [7]
Chloride	mg/L	-	-	-	9.02	<10.0	- [7]
Fluoride	mg/L	-	1.5	-	0.093	<0.400	- [7]
Ammonia (N-NH_3)	mg/L	4.7-20 [3]	31-131 [3]	-	0.011	0.0171	- [7]
Nitrite (N-NO_2)	mg/L	-	-	-	0.0226	<0.0200	- [7]
Nitrate (N-NO_3)	mg/L	3.7	339	-	0.705	0.754	- [7]
Total Metals							
Aluminum, total (T-Al)	mg/L	-	-	-	0.0836	0.112	0.107
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.001	0.00123	0.00128
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00176	0.00083	0.0019
Barium, total (T-Ba)	mg/L	-	-	-	0.0132	0.0144	0.00881
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000020	<0.000040	<0.000040
Boron, total (T-B)	mg/L	1.2	-	-	0.044	0.057	0.027
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000200	0.0000254	<0.0000250
Chromium, total (T-Cr)	mg/L	-	-	-	0.00295	<0.00100	<0.00100
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00010	<0.00020	<0.00020
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00277	0.00253	0.00149
Iron, total (T-Fe)	mg/L	-	-	-	0.033	<0.020	0.071
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.00009	<0.000100	0.000149
Manganese, total (T-Mn)	mg/L	-	-	-	0.0121	0.00481	0.0687
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	0.00000205	0.00000184	0.00000946
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0393	0.0706	0.0745
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00050	<0.00100	0.00176
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000144	0.000315	0.000283
Silver, total (T-Ag)	mg/L	0.0005	0.0037	-	<0.000010	<0.000020	<0.000020
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000010	0.000033	0.000081
Uranium, total (T-U)	mg/L	-	-	-	0.0064	0.00182	0.00682
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.0034	0.00391	0.00182
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	<0.0030	0.0075	<0.0060
Hexavalent Chromium, total	mg/L	0.0015	-	-	***0.00205***	<0.00050	<0.00050
Dissolved Metals							
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000200	<0.0000250	<0.0000150
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00231	0.00225	0.00108
Iron, dissolved (D-Fe)	mg/L	-	-	-	0.015	<0.020	<0.020
Lead, dissolved (D-Pb)	mg/L	-	-	-	<0.000050	0.00017	<0.000100
Manganese, dissolved (D-Mn)	mg/L	-	-	-	1.16	0.494	2.12
Nickel, dissolved (D-Ni)	mg/L	-	-	-	0.00058	<0.00100	0.001
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.151	0.506	0.235
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00332	0.00361	0.00182
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0025	0.0056	<0.0020
Polycyclic Aromatic Hydrocarbons (PAHs)							
Acenaphthene	mg/L	0.006	-	-	<0.00001	<0.00001	- [7]
Acridine	mg/L	-	-	-	<0.00001	<0.00001	- [7]
Anthracene	mg/L	-	-	-	<0.00001	<0.00001	- [7]
Benz(a)anthracene	mg/L	-	-	-	<0.00001	<0.00001	- [7]
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.000005	<0.000005	- [7]
Chrysene	mg/L	0.0001	-	-	<0.00001	<0.00001	- [7]
Fluoranthene	mg/L	-	-	-	<0.00001	<0.00001	- [7]
Fluorene	mg/L	0.012	-	-	<0.00001	<0.00001	- [7]
1-methylnaphthalene	mg/L	0.001	-	-	<0.00001	<0.00001	- [7]
2-methylnaphthalene	mg/L	0.001	-	-	0.00001	<0.00001	- [7]
Naphthalene	mg/L	0.001	-	-	<0.00005	<0.00005	- [7]
Phenanthrene	mg/L	-	-	-	<0.00002	<0.00002	- [7]
Pyrene	mg/L	-	-	-	<0.00001	<0.00001	- [7]
Quinoline	mg/L	-	-	-	<0.00005	<0.00005	- [7]
Volatile Organic Compounds (VOCs)							
Benzene	mg/L	0.11	-	-	<0.0005	<0.0005	- [7]
Ethylbenzene	mg/L	0.25	-	-	<0.0005	<0.0005	- [7]
Methyl-tert-butyl-ether	mg/L	5	0.44	-	<0.0005	<0.0005	- [7]
Styrene	mg/L	-	-	-	<0.0005	<0.0005	- [7]
Toluene	mg/L	0.215	-	-	<0.0004	<0.0004	- [7]
Total Xylenes	mg/L	-	-	-	<0.0005	<0.0005	- [7]
Chlorobenzene	mg/L	0.025	-	-	<0.0005	<0.0005	- [7]
1,2-Dichlorobenzene	mg/L	0.042	-	-	<0.0005	<0.0005	- [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 Catchment discharged during the monitoring period (March 30 – April 5) on April 1 and April 5.
[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. The discharge limit for Wet Conditions did not apply during the monitoring period (March 30 – April 5).
[7] E500GPM effluent collected on April 4 was tested for a subset of parameters (field parameters, total and dissolved metals).

Table B-3: 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]	0.0082 – 0.020 [3,4]
Station	**Water Type**	**Sample ID**	**Lab ID**	**Sampling Date**		
Influent						
SP-E-IN	Influent	SP-E-IN	VA25A5325-005	2025-03-11	0.000068	***0.0287***
WWTP-E-IN	Influent	WWTP-E-IN	VA25A5325-003	2025-03-11	***0.000183***	***0.0445***
Effluent						
SP-E-OUT	Effluent	SP-E-OUT	VA25A5325-006	2025-03-11	0.000038	0.00310
SP-E-OUT	Effluent	SP-E-OUT-Dup	VA25A5325-007	2025-03-11	0.000032	0.00328
WWTP-E-OUT	Effluent	WWTP-E-OUT	VA25A5325-004	2025-03-11	0.000029	0.00667

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 B-4: East Catchment Field Measurements Collected During the Monitoring Period (March 30 – April 5).

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 or 75 [6]	5.5 - 9.0	-	-
Lowest Applicable Guideline [1]			-	≥8	-	-	- [2]	- [2]	-	-
Station ID	**Water Type**	**Date**								
Influent [4]										
SP-E-IN	Influent	2025-03-30 09:53	10.4	11.08	0.70	24.54	21.3	6.4	999	No
SP-E-IN	Influent	2025-03-31 09:59	11.8	10.65	0.95	22.59	19.8	6.2	1387	No
SP-E-IN	Influent	2025-04-01 11:44	11.8	11.07	0.80	20.55	18.3	7.8	1176	No
SP-E-IN	Influent	2025-04-01 14:28	12.1	10.6	0.65	39.12	32.2	7.1	969	Yes
SP-E-IN	Influent	2025-04-02 13:56	11.9	11.08	0.90	8.72	9.5	8.6	1318	No
SP-E-IN	Influent	2025-04-03 13:56	12.8	10.7	0.96	3.80	5.8	6.1	1445	-
SP-E-IN	Influent	2025-04-04 12:15	13.3	10.7	0.91	36.2	30.0	6.4	1391	No
SP-E-IN	Influent	2025-04-05 18:36	14.6	10.5	0.87	13.04	12.7	6.8	1376	No
WWTP-E-IN	Influent	2025-03-30 10:02	9.6	11.54	0.61	15.23	14.4	6.8	855	No
WWTP-E-IN	Influent	2025-03-31 09:47	10.8	10.81	0.78	16.64	15.4	6.7	1124	No
WWTP-E-IN	Influent	2025-04-01 12:04	12.2	10.53	0.95	8.7	9.5	7.1	1409	No
WWTP-E-IN	Influent	2025-04-01 14:10	12.9	10.7	0.9	11.56	11.6	7.2	1358	No
WWTP-E-IN	Influent	2025-04-02 13:51	11.7	11.38	0.84	8.24	9.1	7.1	1231	No
WWTP-E-IN	Influent	2025-04-03 10:37	11.9	11.08	0.93	3.32	5.5	7.4	1361	No
WWTP-E-IN	Influent	2025-04-04 12:10	13.1	11.3	0.95	6.87	8.1	6.7	1444	No
WWTP-E-IN	Influent	2025-04-05 18:32	14.4	10.88	0.87	11.27	11.4	6.8	1368	No
E500GPM-IN	Influent	2025-04-01 11:40	11.9	11.51	0.97	15.84	14.8	7.3	1425	No
E500GPM-IN	Influent	2025-04-04 11:56	12.5	11.7	0.93	40.4	33.1	7.4	1388	No
Effluent [5]										
SP-E-OUT	Effluent	2025-04-01 13:17	8.4	9.45	0.27	0.64	3.5	7.9	379	No
SP-E-OUT[5]	Effluent	2025-04-05 [5]	14.1 [5]	- [5]	- [5]	2.16 [5]	4.6	7.0 [5]	- [5]	- [5]
WWTP-E-OUT	Effluent	2025-03-30 09:55	10.6	11.03	0.78	5.82	7.3	6.2	1121	No
WWTP-E-OUT	Effluent	2025-03-31 09:49	11.9	11.02	0.99	0.48	3.4	6.2	1450	No
WWTP-E-OUT	Effluent	2025-04-01 11:57	12.2	8.12	1.13	1.91	4.4	6.0	1651	No
WWTP-E-OUT	Effluent	2025-04-01 13:53	12.3	10.12	1.10	0.46	3.3	6.0	1618	No
WWTP-E-OUT	Effluent	2025-04-02 14:04	11.7	***6.16***	0.89	0.81	3.6	6.6	1307	No
WWTP-E-OUT	Effluent	2025-04-03 10:42	11.5	11.45	0.94	0.44	3.3	6.1	1369	No
WWTP-E-OUT	Effluent	2025-04-04 12:12	13.2	10.60	1.01	1.60	4.2	5.9	1523	No
WWTP-E-OUT	Effluent	2025-04-05 18:27	13.9	10.54	1.00	1.73	4.3	6.3	1543	No
E500GPM-OUT	Effluent	2025-04-01 11:37	11.3	10.63	0.98	0.53	3.4	7.9	1415	No
E500GPM-OUT	Effluent	2025-04-04 11:53	12.6	11.10	0.92	1.10	3.8	7.2	1371	No
E500GPM-OUT	Effluent	2025-04-05 18:40	12.7	***4.76*** [7]	0.98	1.68	4.3	7.4	1462	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 at the authorized discharge location (SP-E-OUT) on March 30, March 31, nor on April 2 through April 4, therefore daily field measurements for SP-E-OUT were not collected on those days. There was no discharge at SP-E-OUT at the time of monitoring on April 5, therefore daily field measurements for SP-E-OUT were not collected. Average temperature, pH, and turbidity measurements logged at the E500GPM-OUT meter box during the discharge period are reported for April 5.
[6] The PE-111578 discharge limit for TSS is 25 mg/L under dry conditions and 75 mg/L for Wet Conditions. The discharge limit for Wet Conditions did not apply during the monitoring period (March 30 – April 5).
[7] Low DO was measured in E500GPM effluent (E500GPM-OUT) on April 5; however, the East Catchment was not discharging at the time of monitoring.

Table B-5: East Catchment Daily Discharge Volumes for the Monitoring Period (March 30 – April 5).

	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				
2025-03-30	0	373 [2]	694 [3]	0
2025-03-31	0	0 [2]	774 [3]	0
2025-04-01	0	1,260 [2]	738 [3]	844
2025-04-02	0	0 [2]	822 [3]	0
2025-04-03	0	0 [2]	655 [3]	0
2025-04-04	0	36 [2]	881 [3]	0
2025-04-05	0	438 [2]	764 [3]	389

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.
[2] E500GPM clarified effluent is discharged to Howe Sound or recirculated to the East Sedimentation Pond based on operational considerations. Therefore, the E500GPM clarified effluent volume is generally higher than the volume discharged to Howe Sound. The E500GPM system was not operational on March 31, April 3, and April 4.
[3] East WWTP treated effluent was recirculated to the East Sedimentation Pond.

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 VA25A7031-002 2025-03-31 11:45
		Long Term	Short Term		
General Parameters					
pH - Field	pH units	- [2]	-	5.5 - 9.0	7.3
Conductivity - Field	µS/cm	-	-	-	136
Temperature - Field	°C	-	-	-	10.2
Salinity - Field	ppt	-	-	-	0.09
Turbidity - Field	NTU	-	-	-	12.4
TSS	mg/L	-	-	25 [6]	15.2
Dissolved Oxygen - Field	mg/L	≥8	-	-	11.71
Anions and Nutrients					
Sulphate	mg/L	-	-	-	20.5
Chloride	mg/L	-	-	-	10.8
Fluoride	mg/L	-	1.5	-	0.092
Ammonia (N-NH_3)	mg/L	12 [3]	8.3 [3]	-	0.0178
Nitrite (N-NO_2)	mg/L	-	-	-	0.0086
Nitrate (N-NO_3)	mg/L	3.7	339	-	0.849
Total Metals					
Aluminum, total (T-Al)	mg/L	-	-	-	0.862
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00103
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00188
Barium, total (T-Ba)	mg/L	-	-	-	0.0138
Beryllium, total (T-Be)	mg/L	0.1	-	-	0.000021
Boron, total (T-B)	mg/L	1.2	-	-	0.019
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	0.0000258
Chromium, total (T-Cr)	mg/L	-	-	-	0.00136
Cobalt, total (T-Co)	mg/L	-	-	-	0.0003
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00266
Iron, total (T-Fe)	mg/L	-	-	-	0.621
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.00154
Manganese, total (T-Mn)	mg/L	-	-	-	0.0284
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	0.00000346
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0246
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00050
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000179
Silver, total (T-Ag)	mg/L	0.0005	0.0037	-	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	0.000017
Uranium, total (T-U)	mg/L	-	-	-	0.00507
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.00314
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	0.0055
Hexavalent Chromium, total	mg/L	0.0015	-	-	0.00087
Dissolved Metals					
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	0.0000115
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00125
Iron, dissolved (D-Fe)	mg/L	-	-	-	0.011
Lead, dissolved (D-Pb)	mg/L	-	-	-	0.000056
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.977
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0687
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.0021
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0014
Polycyclic Aromatic Hydrocarbons (PAHs)					
Acenaphthene	mg/L	0.006	-	-	<0.00001
Acridine	mg/L	-	-	-	<0.00001
Anthracene	mg/L	-	-	-	<0.00001
Benz(a)anthracene	mg/L	-	-	-	<0.00001
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.000005
Chrysene	mg/L	0.0001	-	-	<0.00001
Fluoranthene	mg/L	-	-	-	0.000012
Fluorene	mg/L	0.012	-	-	<0.00001
1-methylnaphthalene	mg/L	0.001	-	-	<0.00001
2-methylnaphthalene	mg/L	0.001	-	-	<0.00001
Naphthalene	mg/L	0.001	-	-	<0.00005
Phenanthrene	mg/L	-	-	-	<0.00002
Pyrene	mg/L	-	-	-	0.000012
Quinoline	mg/L	-	-	-	<0.00005
Volatile Organic Compounds (VOCs)					
Benzene	mg/L	0.11	-	-	<0.0005
Ethylbenzene	mg/L	0.25	-	-	<0.0005
Methyl-tert-butyl-ether	mg/L	5	0.44	-	<0.0005
Styrene	mg/L	-	-	-	<0.0005
Toluene	mg/L	0.215	-	-	<0.0004
Total Xylenes	mg/L	-	-	-	<0.0005
Chlorobenzene	mg/L	0.025	-	-	<0.0005
1,2-Dichlorobenzene	mg/L	0.042	-	-	<0.0005

Notes: Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of marine water aquatic life.
Shaded results exceed the applicable short-term water quality guideline for the protection of marine water aquatic life.
Results in orange text exceeded the PE-111578 West Sedimentation Pond Discharge Limit.
The West Catchment discharged during the monitoring period (March 30 – April 5) on March 31, April 2, April 3, and April 4.
[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. The discharge limit for Wet Conditions did not apply during the monitoring period (March 30 – April 5).

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

Parameter	Unit	Lowest Applicable Guideline [1]		PE-111578 Discharge Limit	Station SP-W-OUT Effluent SP-W-OUT VA25A7031-001
		Long Term	Short Term		2025-03-31 10:45
General Parameters					
pH - Field	pH units	- [2]	-	5.5 - 9.0	8.5
Conductivity - Field	µS/cm	-	-	-	146
Temperature - Field	°C	-	-	-	11
Salinity - Field	ppt	-	-	-	0.1
Turbidity - Field	NTU	-	-	-	2.05
TSS	mg/L	-	-	25 [6]	<3.0
Dissolved Oxygen - Field	mg/L	≥8	-	-	13.62
Anions and Nutrients					
Sulphate	mg/L	-	-	-	19.8
Chloride	mg/L	-	-	-	12
Fluoride	mg/L	-	1.5	-	0.097
Ammonia (N-NH_3)	mg/L	0.81 [3]	5.4 [3]	-	0.0223
Nitrite (N-NO_2)	mg/L	-	-	-	0.0092
Nitrate (N-NO_3)	mg/L	3.7	339	-	0.542
Total Metals					
Aluminum, total (T-Al)	mg/L	-	-	-	0.122
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00103
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00187
Barium, total (T-Ba)	mg/L	-	-	-	0.00387
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000020
Boron, total (T-B)	mg/L	1.2	-	-	0.011
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	0.000007
Chromium, total (T-Cr)	mg/L	-	-	-	0.0007
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00010
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00104
Iron, total (T-Fe)	mg/L	-	-	-	0.446
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.000184
Manganese, total (T-Mn)	mg/L	-	-	-	0.0182
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	0.00000105
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.022
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00050
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000156
Silver, total (T-Ag)	mg/L	0.0005	0.0037	-	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	0.000021
Uranium, total (T-U)	mg/L	-	-	-	0.00466
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.00148
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	<0.0030
Hexavalent Chromium, total	mg/L	0.0015	-	-	0.00059
Dissolved Metals					
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	0.0000072
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00082
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	-	<0.000050
Manganese, dissolved (D-Mn)	mg/L	-	-	-	1.38
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0689
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.0012
Zinc, dissolved (D-Zn)	mg/L	-	-	-	<0.0010
Polycyclic Aromatic Hydrocarbons (PAHs)					
Acenaphthene	mg/L	0.006	-	-	<0.00001
Acridine	mg/L	-	-	-	<0.00001
Anthracene	mg/L	-	-	-	<0.00001
Benz(a)anthracene	mg/L	-	-	-	<0.00001
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.000005
Chrysene	mg/L	0.0001	-	-	<0.00001
Fluoranthene	mg/L	-	-	-	<0.00001
Fluorene	mg/L	0.012	-	-	<0.00001
1-methylnaphthalene	mg/L	0.001	-	-	<0.00001
2-methylnaphthalene	mg/L	0.001	-	-	<0.00001
Naphthalene	mg/L	0.001	-	-	<0.00005
Phenanthrene	mg/L	-	-	-	<0.00002
Pyrene	mg/L	-	-	-	<0.00001
Quinoline	mg/L	-	-	-	<0.00005
Volatile Organic Compounds (VOCs)					
Benzene	mg/L	0.11	-	-	<0.0005
Ethylbenzene	mg/L	0.25	-	-	<0.0005
Methyl-tert-butyl-ether	mg/L	5	0.44	-	<0.0005
Styrene	mg/L	-	-	-	<0.0005
Toluene	mg/L	0.215	-	-	<0.0004
Total Xylenes	mg/L	-	-	-	<0.0005
Chlorobenzene	mg/L	0.025	-	-	<0.0005
1,2-Dichlorobenzene	mg/L	0.042	-	-	<0.0005

Notes: Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of marine water aquatic life.
Shaded results exceed the applicable short-term water quality guideline for the protection of marine water aquatic life.
Results in orange text exceeded the PE-111578 West Sedimentation Pond Discharge Limit.
The West Catchment discharged during the monitoring period (March 30 – April 5) on March 31, April 2, April 3, and April 4.
[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. The discharge limit for Wet Conditions did not apply during the monitoring period (March 30 – April 5).

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]	0.0050-0.0075 [3,4]
Station	**Water Type**	**Sample ID**	**Lab ID**	**Sampling Date**		
Influent						
SP-W-IN	Influent	SP-W-IN	VA25A5325-001	2025-03-11	0.000030	0.00208
SP-W-IN	Influent	SP-W-IN	VA25A7031-002	2025-03-31	0.000046	0.00346
Effluent						
SP-W-OUT	Effluent	SP-W-OUT	VA25A5325-002	2025-03-11	0.000022	0.00110
SP-W-OUT	Effluent	SP-W-OUT	VA25A7031-001	2025-03-31	<0.000020	0.00105

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 (March 30 – April 5).

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 or 75 [6]	5.5 - 9.0	-	-
Lowest Applicable Guideline [1]			-	≥8	-	-	- [2]	- [2]	-	-
Station ID	**Water Type**	**Date**								
Influent [4]										
SP-W-IN	Influent	2025-03-30 09:39	7.4	11.80	0.07	14.98	14.2	8.0	101	Yes
SP-W-IN	Influent	2025-03-31 11:39	10.2	11.71	0.09	12.40	12.2	7.3	136	No
SP-W-IN	Influent	2025-04-01 11:39	10.4	11.12	0.08	12.17	12.1	8.2	117	No
SP-W-IN	Influent	2025-04-02 11:20	9.6	12.82	0.08	13.44	13.0	8.1	115	No
SP-W-IN	Influent	2025-04-03 09:21	9.2	11.37	0.08	22.53	19.8	8.0	112	No
SP-W-IN	Influent	2025-04-04 12:30	12.1	11.52	0.07	9.45	10.0	7.7	117	No
SP-W-IN	Influent	2025-04-05 18:06	13.1	11.63	0.07	9.22	9.9	7.9	117	No
W500GPM-IN	Influent	2025-03-31 08:22	10.8	11.46	0.10	28.42	24.2	7.8	151	No
W500GPM-IN	Influent	2025-04-02 08:18	12.0	11.31	0.08	14.01	13.4	8.1	127	No
W500GPM-IN	Influent	2025-04-04 15:40	13.4	11.50	0.08	10.60	10.9	8.2	126	No
Effluent [5]										
SP-W-OUT	Effluent	2025-03-31 08:39	9.7	11.34	0.10	4.72	6.5	6.5	145	No
SP-W-OUT	Effluent	2025-03-31 11:27	11.0	13.62	0.10	2.05	4.5	8.5	146	No
SP-W-OUT	Effluent	2025-03-31 14:16	11.6	13.68	0.10	2.41	4.8	6.3	158	No
SP-W-OUT	Effluent	2025-04-02 08:26	10.2	13.83	0.08	1.82	4.4	8.1	123	No
SP-W-OUT	Effluent	2025-04-03 17:30	13.0	10.93	0.08	2.14	4.6	8.0	132	No
SP-W-OUT	Effluent	2025-04-04 15:47	13.8	10.33	0.08	3.25	5.4	7.6	129	No
W500GPM-OUT	Effluent	2025-03-31 08:32	9.8	10.96	0.10	1.83	4.4	6.5	147	No
W500GPM-OUT	Effluent	2025-04-02 08:14	10.0	13.34	0.08	2.54	4.9	7.6	122	No
W500GPM-OUT	Effluent	2025-04-03 17:19	13.5	9.90	0.09	1.70	4.3	7.7	144	No
W500GPM-OUT	Effluent	2025-04-04 15:36	13.8	9.60	0.08	2.90	5.2	7.3	129	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 at the authorized discharge location (SP-W-OUT) on March 30, April 1, and April 5, 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 Wet Conditions. The discharge limit for Wet Conditions did not apply during the monitoring period (March 30 – April 5).

Table C-5: West Catchment Daily Discharge Volumes for the Monitoring Period (March 30 – April 5).

	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					
2025-03-30	0	0 [3]	0	0	0
2025-03-31	0	1,887 [3]	0	0	1,411
2025-04-01	0	0 [3]	0	0	0
2025-04-02	0	813 [3]	0	0	813
2025-04-03	0	541 [3]	0	0	333
2025-04-04	0	405 [3]	0	0	405
2025-04-05	0	0 [3]	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.
[3] W500GPM clarified effluent is discharged to Howe Sound or recirculated to the West Sedimentation Pond based on operational considerations. Therefore, the W500GPM clarified effluent volume may be higher than the volume discharged to Howe Sound at station SP-W-OUT. The W500GPM was not operational on March 30, April 1, and April 5.

Appendix D: Freshwater Receiving Environment Results

Table D-1: 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]	0.0041-0.0067 [3,4]
Station	**Water Type**	**Sample ID**	**Lab ID**	**Sampling Date**		
SW-01	Lower Reach of Woodfibre Creek (near the mouth)	SW-01	VA25A6069-001	2025-03-19	<0.000020	0.00133
SW-04	Lower Reach of East Creek (near the outlet to the outfall culvert)	SW-04	VA25A6069-002	2025-03-19	<0.000020	0.00082

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.

Table D-2: Freshwater 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**		
SW-01	Lower Reach of Woodfibre Creek (near the mouth)	SW-01	L2759255-1	2025-03-19	0.000357	1.42
SW-02	Upper Reach of Mill Creek (upstream of the third bridge)	SW-02	L2749254-1	2025-03-18	0.00972	2.45
SW-07	Upstream Mill Creek (at the diversion inlet)	SW-07	L2749254-3	2025-03-18	0.0582	1.53
SW-04	Lower Reach of East Creek (near the outlet to the outfall culvert)	SW-04	L2759255-2	2025-03-19	0	2.35

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.

Appendix E: Estuarine Water Receiving Environment Results

Table E-1: Estuarine 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**		
SW-03	Mill Creek Estuary	SW-03	L2749254-2	2025-03-18	0.00822	3.39

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.