

## TECHNICAL MEMORANDUM

---

**To:** Ian McAllister, Ashleigh Crompton, Mike Champion,  
Jackie Boruch and Ryan Schucroft (Woodfibre LNG) **Date:** 17 Jan 2025

**From:** Holly Pelletier, Cheng Kuang and Patrick Mueller (Lorax) **Project #:** A633-9

**Subject:** PE-111578 Weekly Discharge and Compliance Report #46 for January 5 – 11

---

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 #46) was prepared by Lorax Environmental and summarizes WDA monitoring conducted for the period of January 5 – 11. 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 #46 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 January 5 – 11 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. 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.

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 with an 820 m<sup>3</sup>/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<sup>3</sup>/day installed capacity for clarifying water. A TSS settling

system (E500GPM) for the East Sedimentation Pond was commissioned on December 4, also with 2,725 m<sup>3</sup>/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.

The East and West Catchment permanent outfall structures have not been completed. Temporary discharge systems (*i.e.*, pumps, hosing and diffusers) 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 to discharge at location SP-E-OUT since December 2. Similarly, the West Catchment discharge location, SP-W-OUT receives the combined clarified effluents from the ESC and W500GPM TSS settling systems since November 28. 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 Activities

Variable weather was observed during the monitoring period (January 5 – 11) with minimal precipitation except on January 10. The total precipitation amount during the monitoring period was 16.2 mm with the majority (13.6 mm) received January 10. 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
01-05-2025	1.0	7.9	2.4	Overcast
01-06-2025	0.2	8.8	1.9	Overcast
01-07-2025	1.0	5.5	1.6	Overcast
01-08-2025	0.4	6.8	3.6	Mix of sun and cloud
01-09-2025	0.0	8.5	3.1	Mix of sun and cloud
01-10-2025	13.6	6.7	3.0	Rain
01-11-2025	0.0	5.1	1.8	Mix of sun and cloud

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

During the January 5 – 11 monitoring period, the East Sedimentation Pond received contact water from Area 1100 Sump, Area 1200 Contact Sumps and Tanks, the Hydrovac Pit, and the Surge Pond (refer to Appendix A, Figure 2).

Routine operation of the East WWTP continued during the monitoring period except on January 11. Contact waters from the West Catchment wash bay and 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). A total of 122 m<sup>3</sup> of treated effluent from the East WWTP was directed to the authorized discharge location SP-E-OUT on January 8. East Sedimentation Pond effluent was clarified through the TSS settling system (E500GPM) prior to discharge. Clarified effluent totalling 1,646 m<sup>3</sup> was directed to the authorized discharge location SP-E-OUT on January 5, 8, 10, and 11. Daily discharge volumes from East WWTP, East TSS settling system (E500GPM) and the authorized discharge location SP-E-OUT are provided in Appendix B, Table B-6.

During the January 5 – 11 monitoring period, contact waters from Area 4100 sump were directed to the West Sedimentation Pond (Appendix A, Figure 3). West Sedimentation Pond water was clarified through the ESC and W500GPM TSS settling systems prior to discharge. Clarified effluent totalling 180 m<sup>3</sup> from the ESC system was directed to the SP-W-OUT authorized discharge location on January 9. A total of 1,388 m<sup>3</sup> of effluent was clarified through the W500GPM system and directed to the SP-W-OUT discharge location each day January 5 – 11 except on January 7 and 8. Daily clarified effluent volumes from the ESC and W500GPM 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-6).

## 2. Monitoring Summary

The PE-111578 authorized works were under construction during the January 5 – 11 monitoring period. Compliance monitoring stations have been established. Monitoring is conducted by the on-site Environmental Monitors (Roe Environmental). Analytical samples are submitted by Roe Environmental to ALS Environmental in Burnaby, BC, for testing.

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

- 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).

A flocculant-based TSS settling system (ESC) has been in use at the West Sedimentation Pond since September 25 and a second system (W500GPM) was commissioned November 28 (Section 1.2). Influent and effluent station IDs are ESC-W-IN and ESC-W-OUT, and W500GPM-IN and W500GPM-OUT. A TSS settling system (E500GPM) at the East Sedimentation Pond was commissioned for use on December 4. The influent and effluent stations for this system are E500GPM-IN and E500GPM-OUT, respectively. There are no PE-111578 monitoring requirements for TSS settling system stations, therefore they are monitored at the discretion of field staff.

Water quality was monitored at stations IDZ-E1, IDZ-E2, IDZ-W1, IDZ-W2, WQR1, WQR2, WWTP-E-IN, WWTP-E-OUT, E500GPM-IN, E500GPM-OUT, SP-E-IN, SP-E-OUT, W500GPM-IN, W500GPM-OUT, SP-W-IN and SP-W-OUT during the monitoring period (January 5 – 11). Sampling dates and parameters tested are summarized in Table 2.

Overall, the PE-111578 monitoring requirements that were applicable during the monitoring period (January 5 – 11) were met.

Daily field parameters were not collected at effluent stations SP-E-OUT (January 5 and 11) and SP-W-OUT (January 5 and 6) since there was no effluent discharged from the authorized discharge locations at the time of monitoring. Daily field parameters were not collected at the influent and effluent stations of the East WWTP (WWTP-E-IN and WWTP-E-OUT, respectively) on January 9, 10, and 11 as the East WWTP was not operational 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 the West WWTP was not operational during the monitoring period.

**Table 2: Summary of PE-111578 Monitoring Samples Collected January 5 – 11.**

Sampling Date	Sample	Description	Parameters Tested	Monitoring Frequency
January 5, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	WWTP-E-OUT	East WWTP at the effluent meter box	Field Parameters.	D
	WWTP-E-IN	East WWTP at the influent meter box		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
January 6, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	WWTP-E-OUT	East WWTP at the effluent meter box	Field Parameters.	D
	WWTP-E-IN	East WWTP at the influent meter box		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
January 7, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	WWTP-E-OUT	East WWTP at the effluent meter box	Field Parameters.	D
	WWTP-E-IN	East WWTP at the influent meter box		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
January 8, 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 <sub>1</sub> , W <sub>2</sub>
	SP-E-OUT	East Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port		
	WWTP-E-OUT	East WWTP at the effluent meter box	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans.	D, W <sub>1</sub> , W <sub>2</sub>
	WWTP-E-IN	East WWTP at the influent 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
	IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans.	M
	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			
January 9, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1		
	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 <sub>1</sub> , W <sub>2</sub>
	SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port		
	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		
	ESC-W-IN	Influent to the West Sedimentation Pond TSS settling system	Field Parameters.	P
	ESC-W-OUT	West TSS settling system effluent at the ESC meter box		
	IDZ-W1-0.5	Howe Sound IDZ station W1; 0.5 m below surface	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans.	M
	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		
	WQR2-0.5	Reference site 2; 0.5 m below surface		
WQR2-2m	Reference site 2; 2 m below surface			
WQR2-SF	Reference site 2; 2 m above the seafloor			
January 10, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1		
	SP-E-OUT	East Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port		
	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
	SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port		
	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		
January 11, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	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		
	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		

**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<sub>1</sub> – initial high frequency monitoring for physical parameters at WWTP and sedimentation pond influent and effluent stations.W<sub>2</sub> – initial high frequency monitoring for all parameters at WWTP and sedimentation pond influent and effluent stations.W<sub>3</sub> – 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 (January 5 – 11) 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 January 1 (dioxins and furans)
- IDZ-E1, IDZ-E2, and WQR1 collected January 8 (field parameters and all analytical parameters)
- SP-E-IN, SP-E-OUT, WWTP-E-IN, and WWTP-E-OUT collected January 8 (dioxins and furans)
- SP-W-IN and SP-W-OUT collected January 9 (dioxins and furans)
- IDZ-W1, IDZ-W2, and WQR2 collected January 9 (field parameters and all analytical parameters)



**Table 3: Summary of Analytical Results Included in Weekly Discharge and Compliance Report #46.**

Sample	Description	Sampling Date	Parameters Reported
IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	2024-11-19	Dioxins and Furans.
IDZ-E2-0.5	Howe Sound IDZ station E2; 0.5 m below surface		
IDZ-W1-0.5	Howe Sound IDZ station W1; 0.5 m below surface		
IDZ-W2-0.5	Howe Sound IDZ station W2; 0.5 m below surface		
WQR1-0.5	Reference site 1; 0.5 m below surface		
WQR2-0.5	Reference site 2; 0.5 m below surface		
SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	2024-11-24	Dioxins and Furans.
SP-E-OUT	East Sedimentation Pond clarified and/or treated effluent discharge to Howe Sound, collected at the sampling port		
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 the sampling port		
IDZ-W2-0.5	Howe Sound IDZ station W2; 0.5 m below surface	2024-11-25	Dioxins and Furans.
IDZ-W2-2m	Howe Sound IDZ station W2; 2 m below surface		
IDZ-W2-SF	Howe Sound IDZ station 2; 2 m above the seafloor		
SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at the sampling port	2024-11-28	Dioxins and Furans.
SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at the sampling port	2024-12-04	Dioxins and Furans.
SP-E-OUT	East Sedimentation Pond clarified and/or treated effluent discharge to Howe Sound, collected at the sampling port	2024-12-05	Dioxins and Furans.
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)	2024-12-06	Dioxins and Furans.
WQR2-0.5	Reference site 2; 0.5 m below surface		
WQR2-2m	Reference site 2; 2 m below surface		
WQR2-SF	Reference site 2; 2 m above the seafloor		
SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	2024-12-07	Dioxins and Furans.
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		
WWTP-E-OUT	East WWTP at the effluent meter box		
SW-02	Upper Reach of Mill Creek (upstream of third bridge)	2024-12-08	Dioxins and Furans.
SW-03	Lower Reach of Mill Creek (near the mouth, in the estuarine zone)		
SW-07	Upstream Mill Creek (at the diversion inlet)		
SW-04	Lower Reach of East Creek (near the outlet to the outfall culvert)		
SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at the sampling port	2024-12-10	Methylmercury, Dioxins and Furans.
W500GPM-IN	West Sedimentation Pond 500 GPM TSS settling system at the influent meter box		Methylmercury.
W500GPM-OUT	West Sedimentation Pond 500 GPM TSS settling system at the effluent meter box	2024-12-14	Methylmercury, Dioxins and Furans.
SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1		
SP-E-OUT	East Sedimentation Pond clarified and/or treated effluent discharge to Howe Sound, collected at the 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		
E500GPM-OUT	East Sedimentation Pond 500 GPM TSS settling system at the effluent meter box	Methylmercury.	
IDZ-W1-0.5	Howe Sound IDZ station W1; 0.5 m below surface	2024-12-15	Dioxins and Furans.
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 2; 2 m above the seafloor		
OUT-01	Non-contact water diversion ditch outlet	2024-12-20	Field, Physical and General Parameters, Total and Dissolved Metals, and Methylmercury.
SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	2025-01-01	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 the sampling port		
SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	2025-01-08	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, VOCs, and Methylmercury.
SP-E-OUT	East Sedimentation Pond clarified and/or treated effluent discharge to Howe Sound, collected at the 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	2025-01-09	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 the sampling port		

**Notes:**

<sup>1</sup> As a result of the reconfigured pathway for effluent discharge at station SP-E-OUT effective October 28, 2024, contact water stored in the East Sedimentation Pond is directed to the East WWTP for treatment and East WWTP effluent is discharged at station SP-E-OUT. Field measurements and analytical samples collected at station SP-E-OUT also fulfill the water quality monitoring requirements for station WWTP-E-OUT until December 3. Beginning December 4, contact water stored in the pond is also clarified using the E500GPM TSS settling system and the clarified effluent is combined with East WWTP treated effluent prior to monitoring and discharge at SP-E-OUT. There are no PE-111578 monitoring requirements for TSS settling system (E500GPM), therefore stations at the facility are monitored at the discretion of field staff.

<sup>2</sup> As a result of the reconfigured pathway for effluent discharge at station SP-W-OUT effective October 28, 2024, the West Sedimentation Pond discharge is routed through a TSS settling system (ESC) prior to discharge and the monitoring results are considered representative of water quality at station ESC-W-OUT until November 28 when clarified effluent from the second TSS settling system (W500GPM) was combined with effluent from ESC system prior to monitoring and discharge at SP-W-OUT. There are no PE-111578 monitoring requirements for TSS settling systems (ESC and W500GPM), therefore stations at these facilities are monitored at the discretion of field staff.

### 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 (January 5 – 11), East WWTP treated effluent and clarified water from the East Sedimentation Pond TSS settling system (E500GPM) were combined in the SP-E-OUT discharge tank and discharged to Howe Sound at the authorized discharge location (station SP-E-OUT) on January 8. Clarified water from the East Sedimentation Pond TSS settling system (E500GPM) was also intermittently discharged to Howe Sound on January 5, 10, and 11. Daily discharge volumes from the East Catchment are summarized in Appendix B, Table B-6.

Field measurements were collected January 5 – 11 at multiple influent and effluent locations, as outlined in Section 2, and are tabulated in Appendix B, Table B-6. Analytical samples collected on January 8 (stations WWTP-E-IN, WWTP-E-OUT, SP-E-IN, and SP-E-OUT) were available at the time of reporting. Screening results for East Catchment contact water influent and effluent quality are tabulated in Table B-1 and Table B-2 of Appendix B.

During the monitoring period (January 5 – 11), analytical results and field measurements monitored at station SP-E-OUT met PE-111578 discharge limits and WQGs. Total copper was above the MDO in the East WWTP effluent sample (WWTP-E-OUT) collected January 8. East WWTP treated effluent was combined with TSS clarified water from the East TSS settling system (E500GPM) and discharged at station SP-E-OUT on January 8. The effluent discharged at station SP-E-OUT on January 8 met PE-111578 discharge limits and WQGs.

Methylmercury analytical results were available at the time of reporting for WWTP influent (WWTP-E-IN) and East Sedimentation Pond influent (SP-E-IN) collected December 14 (as discussed in Report #44) and January 8. Results were also reported for effluent samples collected December 14 (SP-E-OUT, WWTP-E-OUT, and E500GPM-OUT) (as discussed in Report #44) and January 8 (SP-E-OUT and WWTP-E-OUT). The effluent discharged at station SP-E-OUT on

December 14 and January 8 had methylmercury concentrations of 0.000026 and 0.000034 µg/L, respectively, which met the WQG (Appendix B, Table B-3).

Dioxin and furan analytical results were reported for East Sedimentation Pond influent (SP-E-IN) and WWTP influent (WWTP-E-IN) collected November 24, December 7, and December 14 (as discussed in Reports #42, #43, and #44, respectively). Results were also reported for effluent discharged at station SP-E-OUT on November 24, December 5, and December 14, and WWTP effluent collected December 7 and December 14 (as discussed in Reports #42, #43, and #44). The PCDD/F TEQ concentrations in the November 24, December 5, and December 14 SP-E-OUT effluent samples ranged from 0.000639 to 0.0923 pg/L (lower bound) and from 1.14 to 1.71 pg/L (upper bound). Results are presented in Appendix B, Table B-4.

### **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 (January 5 – 11), the TSS settling systems (ESC and W500GPM) intermittently treated water stored in the West Sedimentation Pond and produced clarified effluent that was combined and discharged to Howe Sound on January 9 at the authorized discharge location, SP-W-OUT. The W500GPM TSS settling system also treated water stored in the West Sedimentation Pond and discharged clarified effluent to Howe Sound at SP-W-OUT on January 5, 6, 10 and 11. Daily clarified effluent and discharge volumes from the West Catchment are summarized in Appendix C, Table C-6.

Field measurements were collected January 5 – 11 at multiple influent and effluent locations, as outlined in Section 2, and are tabulated in Appendix C, Table C-5. Analytical samples collected on January 1 (as discussed in Report #45) and January 9 (SP-W-IN and SP-W-OUT) were available at the time of reporting. Screening results for West Catchment contact water influent quality and effluent quality are tabulated in Table C-1 and Table C-2 of Appendix C, respectively.

During the monitoring period (January 5 – 11), analytical results and field measurements monitored at station SP-W-OUT met PE-111578 discharge limits and WQGs except dissolved oxygen on January 10 (Table 4).

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

Parameter	Units	WQG <sup>1</sup>	N	N >WQG	Commentary
Field Dissolved Oxygen	mg/L	≥8	3	1	Dissolved oxygen measured at station SP-W-OUT on January 10 (7.94 mg/L) was slightly below the lower limit of the WQG.

N = number of samples.

<sup>1</sup> The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

Methylmercury analytical results were available at the time of reporting for West Sedimentation Pond influent (station SP-W-IN) collected December 14 (as discussed in Report #44), January 1 (as discussed in Report #45), and January 9, and for W500GPM TSS settling system influent (station W500GPM-IN) collected December 10 (as discussed in Report #44). Results were also reported for effluent discharged at SP-W-OUT on December 10 (as discussed in Report #44), January 1 (as discussed in Report #45), and January 9 and for W500GPM TSS settling system effluent (station W500GPM-OUT) collected December 10 (as discussed in Report #44). Methylmercury concentrations were <0.000020 µg/L in effluent discharged at SP-W-OUT on December 10, January 1, and January 9 and met WQGs for methylmercury and total mercury (Appendix C, Table C-3).

Dioxin and furan results were reported for West Sedimentation Pond influent (station SP-W-IN) collected November 24, December 7, and December 14 (as discussed in Reports #42, #43, and #44, respectively). Results were also reported for effluent discharged at station SP-W-OUT on November 24, November 28, December 4, and December 10 (as discussed in Reports #42, #43, and #44, respectively). The PCDD/F TEQ concentrations in the November 24, November 28, December 4, and December 10 station SP-W-OUT effluent samples ranged from 0 to 0.0223 pg/L (lower bound) and from 0.722 to 2.06 pg/L (upper bound). Results are presented in Appendix C, Table C-4.

### 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 December 20 non-contact water diversion ditch outlet sample collected at station OUT-01 (as discussed in Report #45). Parameter concentrations met WQGs. The methylmercury concentration at OUT-01 on December 20 was 0.000037 µg/L, and methylmercury and total mercury results met WQGs. Results are tabulated in Appendix D, Table D-1 and D-2.

### **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).

Dioxins and furans analytical results were available at the time of reporting for freshwater and estuarine water samples collected near the mouth of Woodfibre Creek on December 6 (as discussed in Report #43), near the mouth of Mill Creek (station SW-02), upstream on Mill Creek (station SW-07), and the Mill Creek Estuary (station SW-03) on December 8, and near the mouth of East Creek (station SW-04) on December 9 (as discussed in Report #44). For all stations the lower and upper bound PCDD/F TEQ concentrations ranged from 0 to 0.0120 pg/L, and 0.582 to 1.73 pg/L, respectively, and are within baseline concentration ranges (Appendix E, Table E-1; Appendix F, Table F-1).

### **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.

Dioxins and furans analytical results were available at the time of reporting for marine samples collected from 0.5 m below surface at stations IDZ-E1, IDZ-E2, IDZ-W1, IDZ-W2, and marine reference stations WQR1 and WQR2 on November 19 (as discussed in Weekly Report #41). Dioxins and furans results were also available for marine samples collected from 0.5 and 2 m below the water surface and 2 m above the seafloor at stations IDZ-W2 on November 25, reference station WQR1 on December 5, reference station WQR2 on December 6, and IDZ-W1 and IDZ-W2 on December 15.

For all samples, the lower and upper bound PCDD/F TEQ concentrations ranged from 0 to 0.0360 pg/L, and 0.597 to 2.33 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. Dioxins and furans results are presented in Appendix G, Table G-1.

#### **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
<b>Reporting Period (January 5 – 11, Report #46)</b>		
<b>Authorized Works and Monitoring Program Evaluation</b>	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, 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 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 to direct sedimentation pond water to the East WWTP and to only discharge East WWTP treated effluent. On November 28 and December 4 TSS settling systems were commissioned for use at the West and East Sedimentation Ponds, respectively, to increase the capacity for TSS settling in pond effluent. This item remains open.
<b>WWTP Performance Evaluation</b>	T-Cu above the MDO	The T-Cu concentration was 0.00809 mg/L in the January 8 WWTP-E-OUT sample. Review possible causes is ongoing. The effluent discharged to Howe Sound at SP-E-OUT met the discharge limits on January 8.
<b>Pending Data</b>	Analytical results not reported.	Analytical results for marine receiving environment samples collected January 8 and 9 were not complete at the time of Report #46 preparation. Dioxins and furans results for samples collected January 8 and 9 were not complete at the time of Report #46 preparation. The pending results will be included in future weekly reports when available. This item remains open.
<b>Ongoing Items from Previous Weekly Reports</b>		
<b>Report #41: Pending Data</b>	Dioxins and furans results were not reported for samples collected November 19.	Dioxins and furans results for marine receiving environment samples collected November 19 are discussed in Section 3.7 of Report #46. This item is closed.
<b>Report #42: Pending Data</b>	Dioxins and furans results were not reported for samples collected November 24, 25, and 28.	Dioxins and furans results for samples collected November 24, 25, and 28 are discussed in Sections 3.3, 3.4, and 3.7 of Report #46. This item is closed.
<b>Report #43: Pending Data</b>	Dioxins and furans results were not reported for samples collected December 4, 5, 6, and 7.	Dioxins and furans results for samples collected December 4, 5, 6, and 7 are discussed in Sections 3.3, 3.4, 3.6, and 3.7 of Report #46. This item is closed.
<b>Report #44: Pending Data</b>	Methylmercury, dioxins and furans results were not reported for samples collected December 8, 9, 10, 12, and 14.	Methylmercury results for samples collected December 12 are discussed in Section 3.4 of Report #45. Dioxins and furans results for samples collected December 8, 9, 10, are discussed in Sections 3.3, 3.4, and 3.6 of Report #46. This item is closed.
<b>Report #45: Non-Compliant Effluent</b>	Non-compliant discharge from the East Catchment on December 20.	Total copper measured at station SP-E-OUT on December 20 was above the PE-111578 discharge limit. Review of the non-compliance is complete, and outcomes have been communicated to BCER. This item is closed.
<b>Report #45: Data QC</b>	Methylmercury above WQG at SP-W-OUT on December 4.	The methylmercury concentration was 3.4 times greater than the WQG in the West Catchment effluent discharged at SP-W-OUT on December 4. A reanalysis for methylmercury has been initiated with the laboratory to confirm the result. This item remains open.
<b>Report #45: Pending Data</b>	Analytical results not reported.	Analytical results for samples collected December 20, 2024, and January 1, 2025, are discussed in Sections 3.5 and 3.4, respectively. Dioxins and furans results for samples collected December 15 are discussed in Section 3.7 of Report #46. Methylmercury, dioxins and furans results for samples collected December 16, 20, 22, and January 1 and 3 were not complete at the time of Report #46 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

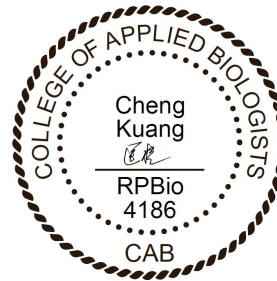
This weekly report is a desktop review by Lorax of the PE-111578 discharge and compliance monitoring program records, reports and results provided by Woodfibre LNG and prime contractor McDermott International and their sub-contractors. The records reviewed and analyzed by Lorax include ALS Environmental 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**



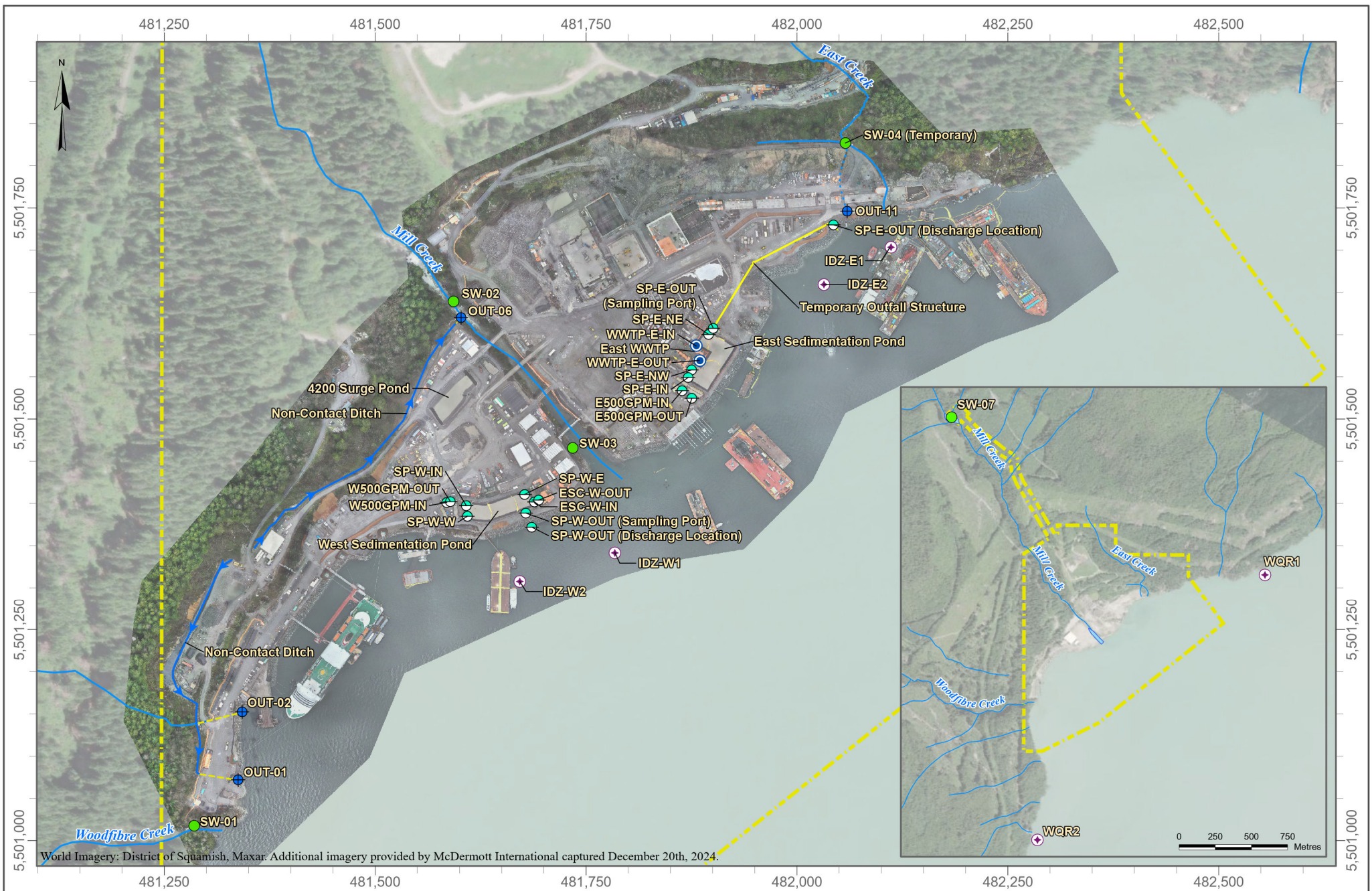
**Cheng Kuang, M.Sc., RPBio.  
Environmental Scientist**



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



## ***Appendix A: Figures and Site Images***

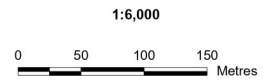


World Imagery: District of Squamish, Maxar. Additional imagery provided by McDermott International captured December 20th, 2024.

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

DATE SAVED:	Jan 17, 2025
DRAWN BY:	DM
REVIEWED:	PM
VERSION:	1

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



CLIENT:	
PROJECT:	<b>Woodfibre LNG Project Construction Phase</b>
TITLE:	Completed or Under Construction Water Management Facilities and Established PE-111578 Monitoring Stations (January 11, 2025)
PROJECT #:	A633-7
FIGURE:	1



**Figure 2: East Catchment contact water management facilities (January 5 – 11).**



**Figure 3: West Catchment contact water management facilities (January 5 – 11).**



**Figure 4:** Aerial view of the East Sedimentation Pond (January 13, 2024). 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 (January 13, 2024). 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 <sup>1</sup>		PE-111578 Discharge Limit	Station WWTP-E-IN	Station SP-E-IN
					Influent	Influent
		WWTP-E-IN	SP-E-IN			
		VA25A0390-002	VA25A0390-004			
		Long Term	Short Term		2025-01-08 10:40	2025-01-08 11:23
<b>General Parameters</b>						
pH - Field	pH units	- <sup>2</sup>	-	5.5 - 9.0	6.6	6.8
Conductivity - Field	µS/cm	-	-	-	480	434
Temperature - Field	°C	-	-	-	6.2	5.5
Salinity - Field	ppt	-	-	-	0.37	0.34
Turbidity - Field	NTU	-	-	-	8.99	12.01
TSS	mg/L	-	-	25 <sup>6</sup>	3.0	4.8
Dissolved Oxygen - Field	mg/L	≥8	-	-	12.21	13.43
<b>Anions and Nutrients</b>						
Sulphate	mg/L	-	-	-	101	100
Chloride	mg/L	-	-	-	6.41	6.28
Fluoride	mg/L	-	1.5	-	0.116	0.108
Ammonia (N-NH <sub>3</sub> )	mg/L	29 <sup>3</sup>	191 <sup>3</sup>	-	0.0205	0.0357
Nitrite (N-NO <sub>2</sub> )	mg/L	-	-	-	0.0102	0.0166
Nitrate (N-NO <sub>3</sub> )	mg/L	3.7	339	-	0.962	1.05
<b>Total Metals</b>						
Aluminum, total (T-Al)	mg/L	-	-	-	0.355	0.226
Antimony, total (T-Sb)	mg/L	-	0.27 <sup>4</sup>	-	0.00151	0.00149
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00214	0.00201
Barium, total (T-Ba)	mg/L	-	-	-	0.00823	0.0072
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000020	<0.000020
Boron, total (T-B)	mg/L	1.2	-	-	0.054	0.054
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000200	<0.0000200
Chromium, total (T-Cr)	mg/L	-	-	-	0.00206	0.00107
Cobalt, total (T-Co)	mg/L	-	-	-	0.00019	0.00016
Copper, total (T-Cu)	mg/L	- <sup>2</sup>	- <sup>2</sup>	0.0043	0.00313	0.00191
Iron, total (T-Fe)	mg/L	-	-	-	0.284	0.145
Lead, total (T-Pb)	mg/L	- <sup>2</sup>	- <sup>2</sup>	0.0035	0.000659	0.000493
Manganese, total (T-Mn)	mg/L	-	-	-	0.0183	0.0229
Mercury, total (T-Hg)	mg/L	0.000016 <sup>5</sup>	-	-	<b><u>0.0000189</u></b>	0.000013
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0466	0.0381
Nickel, total (T-Ni)	mg/L	0.0083	-	-	0.00059	<0.00050
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000189	0.0002
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000010	<0.000010
Uranium, total (T-U)	mg/L	-	-	-	0.021	0.0183
Vanadium, total (T-V)	mg/L	- <sup>2</sup>	-	0.0081	0.00402	0.00302
Zinc, total (T-Zn)	mg/L	- <sup>2</sup>	- <sup>2</sup>	0.0133	0.0362	0.0044
Hexavalent Chromium, total	mg/L	0.0015	-	-	0.00102	0.00057
<b>Dissolved Metals</b>						
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000200	<0.0000150
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00215	0.00138
Iron, dissolved (D-Fe)	mg/L	-	-	-	0.013	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	-	0.000092	<0.000050
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.0126	0.0188
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.000050	<0.000050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.103	0.11
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00348	0.00271
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0332	0.0031
<b>Polycyclic Aromatic Hydrocarbons (PAHs)</b>						
Acenaphthene	mg/L	0.006	-	-	<0.000010	<0.000010
Acridine	mg/L	-	-	-	<0.000010	<0.000010
Anthracene	mg/L	-	-	-	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	-	-	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	-	<0.000010	<0.000010
Fluorene	mg/L	0.012	-	-	<0.000010	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010
Naphthalene	mg/L	0.001	-	-	<0.000050	<0.000050
Phenanthrene	mg/L	-	-	-	<0.000020	<0.000020
Pyrene	mg/L	-	-	-	<0.000010	<0.000010
Quinoline	mg/L	-	-	-	<0.000050	<0.000050
<b>Volatile Organic Compounds (VOCs)</b>						
Benzene	mg/L	0.11	-	-	<0.00050	<0.00050
Ethylbenzene	mg/L	0.25	-	-	<0.00050	<0.00050
Methyl-tert-butyl-ether	mg/L	5	0.44	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	<0.00050	<0.00050
Toluene	mg/L	0.215	-	-	<0.00040	<0.00040
Total Xylenes	mg/L	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.025	-	-	<0.00050	<0.00050
1,2-Dichlorobenzene	mg/L	0.042	-	-	<0.00050	<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 East Sedimentation Pond Discharge Limit.

The East Sedimentation Pond discharged during the monitoring period (January 5 – January 11) on January 5, 8, 10, and 11.

<sup>1</sup> The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

<sup>2</sup> The WQG was not evaluated for parameters with discharge limits.

<sup>3</sup> The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 27E and 27F in BC WQG guidance document.

<sup>4</sup> The working BC WQG for trivalent antimony [SB(III)] is 0.27 mg/L and is applied to total antimony results.

<sup>5</sup> When MeHg ≤ 0.5% of total Hg, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.

<sup>6</sup> 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.

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

Parameter	Unit	Lowest Applicable Guideline <sup>1</sup>		PE-111578 Discharge Limit	Station WWTP-E-OUT	Station SP-E-OUT <sup>7</sup>
					Effluent	Effluent
		WWTP-E-OUT	SP-E-OUT			
		VA25A0390-003	VA25A0390-001			
		Long Term	Short Term		2025-01-08 10:56	2025-01-08 10:29
<b>General Parameters</b>						
pH - Field	pH units	- <sup>2</sup>	-	5.5 - 9.0	6.7	6.9
Conductivity - Field	µS/cm	-	-	-	557	482
Temperature - Field	°C	-	-	-	6.8	6.3
Salinity - Field	ppt	-	-	-	0.42	0.37
Turbidity - Field	NTU	-	-	-	2.21	2.64
TSS	mg/L	-	-	25 <sup>6</sup>	<3.0	<3.0
Dissolved Oxygen - Field	mg/L	≥8	-	-	13.16	13.11
<b>Anions and Nutrients</b>						
Sulphate	mg/L	-	-	-	99.7	101
Chloride	mg/L	-	-	-	6.79	6.59
Fluoride	mg/L	-	1.5	-	0.133	<0.100
Ammonia (N-NH <sub>3</sub> )	mg/L	29 <sup>3</sup>	191 <sup>3</sup>	-	0.0184	0.0289
Nitrite (N-NO <sub>2</sub> )	mg/L	-	-	-	0.0101	0.0135
Nitrate (N-NO <sub>3</sub> )	mg/L	3.7	339	-	1.04	1.07
<b>Total Metals</b>						
Aluminum, total (T-Al)	mg/L	-	-	-	0.0462	0.0323
Antimony, total (T-Sb)	mg/L	-	0.27 <sup>4</sup>	-	0.00153	0.00146
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00195	0.0017
Barium, total (T-Ba)	mg/L	-	-	-	0.00284	0.00548
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000020	<0.000020
Boron, total (T-B)	mg/L	1.2	-	-	0.058	0.066
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000100	<0.0000200
Chromium, total (T-Cr)	mg/L	-	-	-	0.00098	0.00085
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00010	0.00012
Copper, total (T-Cu)	mg/L	- <sup>2</sup>	- <sup>2</sup>	0.0043	0.00809 <sup>8</sup>	0.00234
Iron, total (T-Fe)	mg/L	-	-	-	<0.010	0.018
Lead, total (T-Pb)	mg/L	- <sup>2</sup>	- <sup>2</sup>	0.0035	0.000346	0.000141
Manganese, total (T-Mn)	mg/L	-	-	-	0.00577	0.0212
Mercury, total (T-Hg)	mg/L	0.000016 <sup>5</sup>	-	-	0.00000472	0.00000295
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0448	0.0403
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00050	<0.00050
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000273	0.000191
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000010	0.00001
Uranium, total (T-U)	mg/L	-	-	-	0.0299	0.0191
Vanadium, total (T-V)	mg/L	- <sup>2</sup>	-	0.0081	0.00412	0.00269
Zinc, total (T-Zn)	mg/L	- <sup>2</sup>	- <sup>2</sup>	0.0133	0.0043	0.0056
Hexavalent Chromium, total	mg/L	0.0015	-	-	0.00081	0.00067
<b>Dissolved Metals</b>						
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000100	<0.0000150
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00302	0.00168
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.010	0.012
Lead, dissolved (D-Pb)	mg/L	-	-	-	0.000138	0.000114
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.00579	0.0211
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0848	0.106
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00396	0.00274
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0042	0.0053
<b>Polycyclic Aromatic Hydrocarbons (PAHs)</b>						
Acenaphthene	mg/L	0.006	-	-	<0.000010	<0.000010
Acridine	mg/L	-	-	-	<0.000010	<0.000010
Anthracene	mg/L	-	-	-	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	-	-	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	-	<0.000010	<0.000010
Fluorene	mg/L	0.012	-	-	<0.000010	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010
Naphthalene	mg/L	0.001	-	-	<0.000050	<0.000050
Phenanthrene	mg/L	-	-	-	<0.000020	<0.000020
Pyrene	mg/L	-	-	-	<0.000010	<0.000010
Quinoline	mg/L	-	-	-	<0.000050	<0.000050
<b>Volatile Organic Compounds (VOCs)</b>						
Benzene	mg/L	0.11	-	-	<0.00050	<0.00050
Ethylbenzene	mg/L	0.25	-	-	<0.00050	<0.00050
Methyl-tert-butyl-ether	mg/L	5	0.44	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	<0.00050	<0.00050
Toluene	mg/L	0.215	-	-	<0.00040	<0.00040
Total Xylenes	mg/L	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.025	-	-	<0.00050	<0.00050
1,2-Dichlorobenzene	mg/L	0.042	-	-	<0.00050	<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 East Sedimentation Pond Discharge Limit.

The East Sedimentation Pond discharged during the monitoring period (January 5 – January 11) on January 5, 8, 10, and 11.

<sup>1</sup> The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

<sup>2</sup> The WQG was not evaluated for parameters with discharge limits.

<sup>3</sup> The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 27E and 27F in BC WQG guidance document.

<sup>4</sup> The working BC WQG for trivalent antimony [SB(III)] is 0.27 mg/L and is applied to total antimony results.

<sup>5</sup> When MeHg ≤0.5% of total Hg, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.

<sup>6</sup> 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.

<sup>7</sup> Field measurements and analytical samples were collected at the SP-E-OUT sample collection port.

<sup>8</sup> East WWTP treated effluent was combined with TSS clarified water from the East TSS settling system (E500GPM) and discharged at station SP-E-OUT on January 8. The effluent discharged at station SP-E-OUT on January 8 met PE-111578 discharge limits and WQGs.

**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 <sup>1</sup>					0.0001 <sup>2</sup>	0.0062 – 0.020 <sup>3,4</sup>
Station	Water Type	Sample ID	Lab ID	Sampling Date		
Influent						
SP-E-IN	Influent	SP-E-IN	VA24D3585-001	2024-12-14	<b><u>0.000653</u></b>	<b><u>0.125</u></b>
SP-E-IN	Influent	SP-E-IN	VA25A0390-004	2025-01-08	0.000044	0.0130
WWTP-E-IN	Influent	WWTP-E-IN	VA24D3585-003	2024-12-14	<b><u>0.000164</u></b>	<b><u>0.0288</u></b>
WWTP-E-IN	Influent	WWTP-E-IN	VA25A0390-002	2025-01-08	0.000038	0.0189
Effluent						
SP-E-OUT	Effluent	SP-E-OUT	VA24D3585-002	2024-12-14	0.000026	0.00227
SP-E-OUT	Effluent	SP-E-OUT	VA25A0390-001	2025-01-08	0.000034	0.00295
WWTP-E-OUT	Effluent	WWTP-E-OUT	VA24D3585-004	2024-12-14	0.000041	0.00374
WWTP-E-OUT	Effluent	WWTP-E-OUT	VA25A0390-003	2025-01-08	0.000041	0.00472
E500GPM-OUT	Effluent	E500GPM-OUT	VA24D3585-005	2024-12-14	0.000028	0.00174

**Notes:**

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

<sup>1</sup> The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

<sup>2</sup> 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.

<sup>3</sup> CCME guideline for total mercury = 0.016 µg/L.

<sup>4</sup> 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 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	L2758219-1	2024-11-24	118	181
SP-E-IN	Influent	SP-E-IN	L2758355-1	2024-12-07	6.27	10.8
SP-E-IN	Influent	SP-E-IN	L2758428-1	2024-12-14	3.52	6.12
WWTP-E-IN	Influent	WWTP-E-IN	L2758219-2	2024-11-24	0.901	3.54
WWTP-E-IN	Influent	WWTP-E-IN	L2758355-2	2024-12-07	1.86	4.28
WWTP-E-IN	Influent	WWTP-E-IN	L2758428-3	2024-12-14	1.18	2.94
Effluent						
SP-E-OUT	Effluent	SP-E-OUT	L2758219-3	2024-11-24	0.0506	1.71
SP-E-OUT	Effluent	SP-E-OUT	L2758352-1	2024-12-05	0.000639	1.17
SP-E-OUT	Effluent	SP-E-OUT	L2758428-2	2024-12-14	0.0923	1.24
WWTP-E-OUT	Effluent	WWTP-E-OUT	L2758355-3	2024-12-07	0.00728	1.07
WWTP-E-OUT	Effluent	WWTP-E-OUT	L2758428-4	2024-12-14	0.611	1.47

**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-5: East Catchment Field Measurements Collected During the Monitoring Period (January 5 – 11).**

Parameter			Temp.	Dissolved Oxygen (DO)	Salinity	Turbidity	Estimated TSS <sup>3</sup>	pH	Conductivity	Visibility of Sheen
Unit			°C	mg/L	ppt	NTU	mg/L	s.u.	µS/cm	
<b>PE-111578 Discharge Limit</b>			-	-	-	-	25 <sup>6</sup>	5.5 - 9.0	-	-
<b>Lowest Applicable Guideline<sup>1</sup></b>			-	≥8	-	-	- <sup>2</sup>	- <sup>2</sup>	-	-
Station ID	Water Type	Date								
<b>Influent<sup>4</sup></b>										
SP-E-IN	Influent	2025-01-05 15:50	7.2	11.70	0.32	2.00	4.5	6.5	438	No
SP-E-IN	Influent	2025-01-06 10:51	6.4	12.16	0.35	3.94	5.9	6.3	464	No
SP-E-IN	Influent	2025-01-07 12:14	4.4	11.52	0.27	2.78	5.1	6.7	344	No
SP-E-IN	Influent	2025-01-08 11:23	5.5	13.43	0.34	12.01	12.0	6.8	434	No
SP-E-IN	Influent	2025-01-09 11:43	6.9	12.57	0.23	1.38	4.0	7.2	316	No
SP-E-IN	Influent	2025-01-10 12:57	6.7	11.13	0.17	34.22	28.5	6.7	233	No
SP-E-IN	Influent	2025-01-11 14:17	5.5	12.90	0.15	363.66	274.2	8.5	193	No
WWTP-E-IN	Influent	2025-01-05 15:26	7.5	11.7	0.31	6.51	7.9	6.6	418	No
WWTP-E-IN	Influent	2025-01-06 10:42	5.4	12.01	0.29	3.93	5.9	6.4	378	No
WWTP-E-IN	Influent	2025-01-07 12:03	5.2	12.37	0.34	3.78	5.8	6.4	434	No
WWTP-E-IN	Influent	2025-01-08 10:40	6.2	12.21	0.37	8.99	9.7	6.6	480	No
E500GPM-IN	Influent	2025-01-08 11:44	7.3	12.83	0.37	11.36	11.5	7.0	494	No
E500GPM-IN	Influent	2025-01-10 12:51	6.7	12.23	0.19	5.42	7.0	6.9	253	No
<b>Effluent<sup>5</sup></b>										
SP-E-OUT	Effluent	2024-01-05	5.8 <sup>5</sup>	-. <sup>5</sup>	-. <sup>5</sup>	2.1 <sup>5</sup>	4.6 <sup>5</sup>	6.7 <sup>5</sup>	-. <sup>5</sup>	-. <sup>5</sup>
SP-E-OUT	Effluent	2025-01-08 10:29	6.3	13.11	0.37	2.64	5.0	6.9	482	No
SP-E-OUT	Effluent	2025-01-10 13:06	6.4	12.67	0.18	1.78	4.3	7.3	247	No
SP-E-OUT	Effluent	2024-01-11	6.5 <sup>5</sup>	-. <sup>5</sup>	-. <sup>5</sup>	1.9 <sup>5</sup>	4.4 <sup>5</sup>	6.6 <sup>5</sup>	-. <sup>5</sup>	-. <sup>5</sup>
WWTP-E-OUT	Effluent	2025-01-05 15:47	8.6	7.12	0.56	5.57	7.2	5.8	769	No
WWTP-E-OUT	Effluent	2025-01-06 10:46	6.0	13.45	0.35	0.11	3.1	6.2	458	No
WWTP-E-OUT	Effluent	2025-01-07 12:04	6.2	9.95	0.46	0.96	3.7	5.9	593	No
WWTP-E-OUT	Effluent	2025-01-08 10:56	6.8	13.16	0.42	2.21	4.6	6.7	557	No
E500GPM-OUT	Effluent	2025-01-08 11:37	5.9	13.7	0.37	0.70	3.5	6.9	476	No
E500GPM-OUT	Effluent	2025-01-10 12:54	6.0	13.62	0.18	2.18	4.6	7.2	244	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.

<sup>1</sup> The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

<sup>2</sup> The WQG was not evaluated for parameters with discharge limits.

<sup>3</sup> TSS concentration is estimated from field turbidity measurements using a site-specific relationship TSS = 0.7458 \* [turbidity as NTU] + 3.

<sup>4</sup> Site staff noted there was no active input of influent to the pond at the time of monitoring on January 9, however daily measurements for station SP-E-IN were collected at cell 1 of the pond.

<sup>5</sup> On January 5 and January 11, field measurements were not collected at SP-E-OUT because there was no discharge at the time of monitoring; average temperature, turbidity and pH measurements logged at the SP-E-OUT meter box during the discharge period are reported. There was no discharge January 6, 7, and 9, therefore daily measurements for SP-E-OUT were not collected on that day.

<sup>6</sup> 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.

**Table B-6: East Catchment Daily Discharge Volumes for the Monitoring Period (January 5 – 11).**

	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)
<b>Unit</b>	<b>m<sup>3</sup></b>	<b>m<sup>3</sup></b>	<b>m<sup>3</sup></b>	<b>m<sup>3</sup></b>
<b>PE-111578 Discharge Limit</b>	- <sup>1</sup>	- <sup>1</sup>	1100	- <sup>1</sup>
<b>Date</b>				
2025-01-05	0	340	0	340
2025-01-06	0	0	0	0
2025-01-07	0	0	0	0
2025-01-08	0	257	122	379
2025-01-09	0	0	0	0
2025-01-10	0	960	0	960
2025-01-11	0	89	0	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.

Results in orange text exceeded the PE-111578 East Sedimentation Pond Discharge Limit.

<sup>1</sup> The annual average authorized discharge rate from the East Sedimentation Pond is 650 m<sup>3</sup>/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 <sup>1</sup>		PE-111578 Discharge Limit	Station SP-W-IN	Station SP-W-IN
					Influent	Influent
		SP-W-IN	SP-W-IN			
		VA25A0091-002	VA25A0508-002			
		Long Term	Short Term		2025-01-01 10:45	2025-01-09 11:30
<b>General Parameters</b>						
pH - Field	pH units	- <sup>2</sup>	-	5.5 - 9.0	8.2	7.6
Conductivity - Field	µS/cm	-	-	-	103	71
Temperature - Field	°C	-	-	-	5.1	5.3
Salinity - Field	ppt	-	-	-	0.08	0.05
Turbidity - Field	NTU	-	-	-	24.90	13.81
TSS	mg/L	-	-	25 <sup>6</sup>	15.3	12.4
Dissolved Oxygen - Field	mg/L	≥8	-	-	12.18	13.3
<b>Anions and Nutrients</b>						
Sulphate	mg/L	-	-	-	9.05	5.54
Chloride	mg/L	-	-	-	1.23	4.48
Fluoride	mg/L	-	1.5	-	0.038	0.047
Ammonia (N-NH <sub>3</sub> )	mg/L	1.8-7.2 <sup>3</sup>	12-48 <sup>3</sup>	-	<0.0050	0.0070
Nitrite (N-NO <sub>2</sub> )	mg/L	-	-	-	0.0022	0.0053
Nitrate (N-NO <sub>3</sub> )	mg/L	3.7	339	-	0.505	0.278
<b>Total Metals</b>						
Aluminum, total (T-Al)	mg/L	-	-	-	1.05	0.899
Antimony, total (T-Sb)	mg/L	-	0.27 <sup>4</sup>	-	0.00110	0.00051
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00165	0.001
Barium, total (T-Ba)	mg/L	-	-	-	0.0166	0.0105
Beryllium, total (T-Be)	mg/L	0.1	-	-	0.000025	0.000022
Boron, total (T-B)	mg/L	1.2	-	-	0.023	0.014
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	0.0000326	0.0000279
Chromium, total (T-Cr)	mg/L	-	-	-	0.00108	0.00066
Cobalt, total (T-Co)	mg/L	-	-	-	0.00030	0.00027
Copper, total (T-Cu)	mg/L	- <sup>2</sup>	- <sup>2</sup>	0.0043	0.00385	0.00314
Iron, total (T-Fe)	mg/L	-	-	-	0.702	0.739
Lead, total (T-Pb)	mg/L	- <sup>2</sup>	- <sup>2</sup>	0.0035	0.00262	0.003
Manganese, total (T-Mn)	mg/L	-	-	-	0.0227	0.0273
Mercury, total (T-Hg)	mg/L	0.000016 <sup>5</sup>	-	-	0.00000449	0.0000038
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.00841	0.00798
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00050	<0.00050
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000085	0.000106
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000010	0.000012
Uranium, total (T-U)	mg/L	-	-	-	0.00331	0.00329
Vanadium, total (T-V)	mg/L	- <sup>2</sup>	-	0.0081	0.00367	0.00198
Zinc, total (T-Zn)	mg/L	- <sup>2</sup>	- <sup>2</sup>	0.0133	0.0067	0.0081
Hexavalent Chromium, total	mg/L	0.0015	-	-	0.00060	<0.00050
<b>Dissolved Metals</b>						
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	0.0000050	0.0000062
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00125	0.00103
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.010	0.023
Lead, dissolved (D-Pb)	mg/L	-	-	-	0.000091	0.00015
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.00314	0.0098
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0785	0.0431
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00265	0.00071
Zinc, dissolved (D-Zn)	mg/L	-	-	-	<0.0010	0.0016
<b>Polycyclic Aromatic Hydrocarbons (PAHs)</b>						
Acenaphthene	mg/L	0.006	-	-	<0.000010	<0.000010
Acridine	mg/L	-	-	-	<0.000010	<0.000010
Anthracene	mg/L	-	-	-	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	-	-	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	-	<0.000010	<0.000010
Fluorene	mg/L	0.012	-	-	<0.000010	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010
Naphthalene	mg/L	0.001	-	-	<0.000050	<0.000050
Phenanthrene	mg/L	-	-	-	<0.000020	<0.000020
Pyrene	mg/L	-	-	-	<0.000010	<0.000010
Quinoline	mg/L	-	-	-	<0.000050	<0.000050
<b>Volatile Organic Compounds (VOCs)</b>						
Benzene	mg/L	0.11	-	-	<0.00050	<0.00050
Ethylbenzene	mg/L	0.25	-	-	<0.00050	<0.00050
Methyl-tert-butyl-ether	mg/L	5	0.44	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	<0.00050	<0.00050
Toluene	mg/L	0.215	-	-	<0.00040	<0.00040
Total Xylenes	mg/L	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.025	-	-	<0.00050	<0.00050
1,2-Dichlorobenzene	mg/L	0.042	-	-	<0.00050	<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 discharged each day during the monitoring period (January 5 – January 11) except on January 7 and 8.

<sup>1</sup> The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

<sup>2</sup> The WQG was not evaluated for parameters with discharge limits.

<sup>3</sup> The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 27E and 27F in BC WQG guidance document.

<sup>4</sup> The working BC WQG for trivalent antimony [SB(III)] is 0.27 mg/L and is applied to total antimony results.

<sup>5</sup> When MeHg ≤ 0.5% of total Hg, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.

<sup>6</sup> 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 <sup>1</sup>		PE-111578 Discharge Limit	Station SP-W-OUT <sup>7</sup>	Station SP-W-OUT <sup>7</sup>
					Effluent	Effluent
		SP-W-OUT	SP-W-OUT			
		VA25A0091-001	VA25A0508-001			
		Long Term	Short Term		2025-01-01 10:10	2025-01-09 11:19
<b>General Parameters</b>						
pH - Field	pH units	- <sup>2</sup>	-	5.5 - 9.0	7.6	7.6
Conductivity - Field	µS/cm	-	-	-	89	78
Temperature - Field	°C	-	-	-	6.5	5.1
Salinity - Field	ppt	-	-	-	0.06	0.06
Turbidity - Field	NTU	-	-	-	1.90	2.44
TSS	mg/L	-	-	25 <sup>6</sup>	<3.0	<3.0
Dissolved Oxygen - Field	mg/L	≥8	-	-	13.76	14.97
<b>Anions and Nutrients</b>						
Sulphate	mg/L	-	-	-	6.01	5.86
Chloride	mg/L	-	-	-	1.05	3.95
Fluoride	mg/L	-	1.5	-	0.039	0.042
Ammonia (N-NH <sub>3</sub> )	mg/L	7.2 <sup>3</sup>	48 <sup>3</sup>	-	<0.0050	0.0178
Nitrite (N-NO <sub>2</sub> )	mg/L	-	-	-	0.0112	0.0563
Nitrate (N-NO <sub>3</sub> )	mg/L	3.7	339	-	0.311	0.285
<b>Total Metals</b>						
Aluminum, total (T-Al)	mg/L	-	-	-	0.0452	0.0945
Antimony, total (T-Sb)	mg/L	-	0.27 <sup>4</sup>	-	0.00073	0.00053
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00099	0.00088
Barium, total (T-Ba)	mg/L	-	-	-	0.00162	0.00276
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000020	<0.000020
Boron, total (T-B)	mg/L	1.2	-	-	0.011	0.015
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.000050	<0.0000100
Chromium, total (T-Cr)	mg/L	-	-	-	<0.00050	<0.00050
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00010	<0.00010
Copper, total (T-Cu)	mg/L	- <sup>2</sup>	- <sup>2</sup>	0.0043	0.00070	0.00109
Iron, total (T-Fe)	mg/L	-	-	-	0.018	0.059
Lead, total (T-Pb)	mg/L	- <sup>2</sup>	- <sup>2</sup>	0.0035	0.000095	0.000372
Manganese, total (T-Mn)	mg/L	-	-	-	0.00531	0.0145
Mercury, total (T-Hg)	mg/L	0.000016 <sup>5</sup>	-	-	0.0000057	0.0000009
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.00726	0.0079
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00050	<0.00050
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000061	0.000074
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000010	<0.000010
Uranium, total (T-U)	mg/L	-	-	-	0.00197	0.00149
Vanadium, total (T-V)	mg/L	- <sup>2</sup>	-	0.0081	0.00103	0.00092
Zinc, total (T-Zn)	mg/L	- <sup>2</sup>	- <sup>2</sup>	0.0133	<0.0030	<0.0030
Hexavalent Chromium, total	mg/L	0.0015	-	-	<0.00050	<0.00050
<b>Dissolved Metals</b>						
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.000050	<0.0000100
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00066	0.001
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.010	0.016
Lead, dissolved (D-Pb)	mg/L	-	-	-	<0.000050	0.000144
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.00533	0.0128
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0405	0.0481
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00096	0.00074
Zinc, dissolved (D-Zn)	mg/L	-	-	-	<0.0010	0.0036
<b>Polycyclic Aromatic Hydrocarbons (PAHs)</b>						
Acenaphthene	mg/L	0.006	-	-	<0.000010	<0.000010
Acridine	mg/L	-	-	-	<0.000010	<0.000010
Anthracene	mg/L	-	-	-	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.000050	<0.000050
Chrysene	mg/L	0.0001	-	-	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	-	<0.000010	<0.000010
Fluorene	mg/L	0.012	-	-	<0.000010	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010
Naphthalene	mg/L	0.001	-	-	<0.000050	<0.000050
Phenanthrene	mg/L	-	-	-	<0.000020	<0.000020
Pyrene	mg/L	-	-	-	<0.000010	<0.000010
Quinoline	mg/L	-	-	-	<0.000050	<0.000050
<b>Volatile Organic Compounds (VOCs)</b>						
Benzene	mg/L	0.11	-	-	<0.00050	<0.00050
Ethylbenzene	mg/L	0.25	-	-	<0.00050	<0.00050
Methyl-tert-butyl-ether	mg/L	5	0.44	-	<0.00050	<0.00050
Styrene	mg/L	-	-	-	<0.00050	<0.00050
Toluene	mg/L	0.215	-	-	<0.00040	<0.00040
Total Xylenes	mg/L	-	-	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.025	-	-	<0.00050	<0.00050
1,2-Dichlorobenzene	mg/L	0.042	-	-	<0.00050	<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 discharged each day during the monitoring period (January 5 – January 11) except on January 7 and 8.

<sup>1</sup> The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

<sup>2</sup> The WQG was not evaluated for parameters with discharge limits.

<sup>3</sup> The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 27E and 27F in BC WQG guidance document.

<sup>4</sup> The working BC WQG for trivalent antimony [SB(III)] is 0.27 mg/L and is applied to total antimony results.

<sup>5</sup> When MeHg ≤ 0.5% of total Hg, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.

<sup>6</sup> 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.

<sup>7</sup> 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 <sup>1</sup>					0.0001 <sup>2</sup>	0.0029 – 0.020 <sup>3,4</sup>
Station	Water Type	Sample ID	Lab ID	Sampling Date		
<b>Influent</b>						
SP-W-IN	Influent	SP-W-IN	VA24D3585-006	2024-12-14	<b><u>0.000112</u></b>	<b><u>0.0299</u></b>
SP-W-IN	Influent	SP-W-IN	VA25A0091-002	2025-01-01	0.000032	0.00449
SP-W-IN	Influent	SP-W-IN	VA25A0508-002	2025-01-09	0.000040	0.00380
W500GPM-IN	Influent	W500GPM-IN	VA24D3211-001	2024-12-10	0.000053	<b><u>0.0215</u></b>
<b>Effluent</b>						
SP-W-OUT	Effluent	SP-W-OUT	VA24D3211-003	2024-12-10	<0.000020	0.00066
SP-W-OUT	Effluent	SP-W-OUT	VA25A0091-001	2025-01-01	<0.000020	0.00057
SP-W-OUT	Effluent	SP-W-OUT	VA25A0508-001	2025-01-09	<0.000020	0.00090
W500GPM-OUT	Effluent	W500GPM-OUT	VA24D3211-002	2024-12-10	<0.000020	0.00059

**Notes:**

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

<sup>1</sup> The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

<sup>2</sup> 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.

<sup>3</sup> CCME guideline for total mercury = 0.016 µg/L.

<sup>4</sup> 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.

**Table C-4: West 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		
<b>Influent</b>						
SP-W-IN	Influent	SP-W-IN	L2758219-4	2024-11-24	0.14	3.23
SP-W-IN	Influent	SP-W-IN	L2758355-5	2024-12-07	3.01	6.03
SP-W-IN	Influent	SP-W-IN	L2758428-5	2024-12-14	1.63	2.81
<b>Effluent</b>						
SP-W-OUT	Effluent	SP-W-OUT	L2758219-5	2024-11-24	0.00155	1.52
SP-W-OUT	Effluent	SP-W-OUT	L2758286-1	2024-11-28	0	1.49
SP-W-OUT	Effluent	SP-W-OUT	L2758325-1	2024-12-04	0.00518	0.722
SP-W-OUT	Effluent	SP-W-OUT	L2758384-1	2024-12-10	0.0223	2.06

**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 C-5: West Catchment Field Measurements Collected During the Monitoring Period (January 5 – 11).**

Parameter			Temperature	Dissolved Oxygen (DO)	Salinity	Turbidity	Estimated TSS <sup>3</sup>	pH	Conductivity	Visibility of Sheen
Unit			°C	mg/L	ppt	NTU	mg/L	s.u.	µS/cm	
PE-111578 Discharge Limit			-	-	-	-	25 <sup>6</sup>	5.5 - 9.0	-	-
Lowest Applicable Guideline <sup>1</sup>			-	≥8	-	-	- <sup>2</sup>	- <sup>2</sup>	-	-
Station ID	Water Type	Date								
<b>Influent<sup>4</sup></b>										
SP-W-IN	Influent	2025-01-05 16:41	6.2	12.56	0.09	42.25	34.5	7.7	115	No
SP-W-IN	Influent	2025-01-06 14:23	6.0	12.90	0.06	7.60	8.7	7.4	77	No
SP-W-IN	Influent	2025-01-07 12:49	4.0	13.07	0.04	9.75	10.3	7.4	47	No
SP-W-IN	Influent	2025-01-08 12:00	5.5	12.51	0.03	7.23	8.4	7.7	40	No
SP-W-IN	Influent	2025-01-09 11:30	5.3	13.30	0.05	13.81	13.3	7.6	71	No
SP-W-IN	Influent	2025-01-10 12:17	5.9	12.71	0.05	56.45	45.1	7.4	64	No
SP-W-IN	Influent	2025-01-11 13:42	5.9	13.34	0.04	18.74	17.0	8.2	60	No
W500GPM-IN	Influent	2025-01-09 11:00	6.7	13.12	0.04	12.02	12.0	7.6	49	No
W500GPM-IN	Influent	2025-01-10 12:36	6.2	13.32	0.05	13.75	13.3	7.1	64	No
W500GPM-IN	Influent	2025-01-11 13:35	6.6	13.45	0.11	12.29	12.2	8.5	150	No
ESC-W-IN	Influent	2025-01-09 11:15	5.6	13.14	0.05	10.63	10.9	7.7	70	No
<b>Effluent<sup>5</sup></b>										
SP-W-OUT	Effluent	2025-01-05	4.7 <sup>5</sup>	. <sup>5</sup>	. <sup>5</sup>	1.3 <sup>5</sup>	4.0 <sup>5</sup>	7.3 <sup>5</sup>	. <sup>5</sup>	. <sup>5</sup>
SP-W-OUT	Effluent	2025-01-06	4.8 <sup>5</sup>	. <sup>5</sup>	. <sup>5</sup>	2.1 <sup>5</sup>	4.6 <sup>5</sup>	7.4 <sup>5</sup>	. <sup>5</sup>	. <sup>5</sup>
SP-W-OUT	Effluent	2025-01-09 11:19	5.1	14.97	0.06	2.44	4.8	7.6	78	No
SP-W-OUT	Effluent	2025-01-10 12:25	6.3	<b>7.94</b>	0.06	2.80	5.1	7.3	77	No
SP-W-OUT	Effluent	2025-01-11 13:51	6.2	13.43	0.06	4.96	6.7	8.1	86	No
W500GPM-OUT	Effluent	2025-01-09 11:04	5.4	15.99	0.06	3.07	5.3	7.6	78	No
W500GPM-OUT	Effluent	2025-01-10 12:40	5.7	9.76	0.05	2.44	4.8	7.3	68	No
W500GPM-OUT	Effluent	2025-01-11 13:39	5.9	13.40	0.06	4.1	6.1	8.2	86	No
ESC-W-OUT	Effluent	2025-01-09 12:00	5.4	12.70	0.06	1.53	4.1	7.5	78	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.

<sup>1</sup> The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

<sup>2</sup> The WQG was not evaluated for parameters with discharge limits.

<sup>3</sup> TSS concentration is estimated from field turbidity measurements using a site-specific relationship TSS = 0.7458 \* [turbidity as NTU] + 3.

<sup>4</sup> Site staff noted there was no active input of influent sources to the pond at the time of monitoring on January 5 – 8 and 10, however daily measurements for station SP-W-IN collected at cell 1 of the pond.

<sup>5</sup> On January 5 and 6, field measurements were not collected at SP-W-OUT because there was no discharge at the time of monitoring. The W500GPM TSS settling system clarified effluent was discharged to Howe Sound on January 5 and 6. Field measurements were not collected at W500GPM-OUT on January 5 and 6 as there was no discharge at the time of monitoring; therefore average temperature, turbidity, and pH measurements logged at the meter box during the discharge period are reported.

<sup>6</sup> 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-6: West Catchment Daily Discharge Volumes for the Monitoring Period (January 5 – 11).**

	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 <sup>1</sup> (Station WWTP-W-OUT)	Discharge to Howe Sound (Station SP-W-OUT)
Unit	m <sup>3</sup>	m <sup>3</sup>	m <sup>3</sup>	m <sup>3</sup>	m <sup>3</sup>
PE-111578 Discharge Limit	- <sup>2</sup>	- <sup>2</sup>	- <sup>2</sup>	1100	- <sup>2</sup>
Date					
2025-01-05	0	0	216	0	216
2025-01-06	0	0	177	0	177
2025-01-07	0	0	0	0	0
2025-01-08	0	0	0	0	0
2025-01-09	0	180	201	0	381
2025-01-10	0	0	535	0	535
2025-01-11	0	0	259	0	259

**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.

<sup>1</sup> The West WWTP is not being operated, therefore discharges are not expected from this facility.

<sup>2</sup> The annual average authorized discharge rate from the West Sedimentation Pond is 310 m<sup>3</sup>/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 <sup>1,2</sup>		Station OUT-01
				Non-Contact Water Diversion Ditch Outlet
				OUT-01
				VA24D4181-001
				2024-12-20 14:45
<b>General Parameters</b>				
pH - Field	pH units	6.5 - 9.0	-	8.2
Specific Conductivity - Field	µS/cm	-	-	18
Temperature - Field	°C	-	-	6.5
Salinity - Field	ppt	-	-	0.01
Turbidity - Field	NTU	-	-	1.7
TSS	mg/L	-	-	<3.0
Dissolved Oxygen - Field	mg/L	≥8	≥5	12.07
<b>Anions and Nutrients</b>				
Sulphate <sup>2</sup>	mg/L	128	-	1.49
Chloride	mg/L	120	600	0.55
Fluoride <sup>2</sup>	mg/L	-	0.40	<0.020
Ammonia (N-NH <sub>3</sub> ) <sup>2</sup>	mg/L	0.502	3.86	<0.0050
Nitrite (N-NO <sub>2</sub> ) <sup>2</sup>	mg/L	0.02	0.06	<0.0010
Nitrate (N-NO <sub>3</sub> )	mg/L	3	32.8	0.119
<b>Total Metals</b>				
Aluminum, total (T-Al) <sup>2</sup>	mg/L	0.395	-	0.170
Antimony, total (T-Sb)	mg/L	0.074	-	<0.00010
Arsenic, total (T-As)	mg/L	0.005	-	0.00014
Barium, total (T-Ba)	mg/L	1	-	0.00317
Beryllium, total (T-Be)	mg/L	0.00013	-	<0.000020
Boron, total (T-B)	mg/L	1.2	29	<0.010
Cadmium, total (T-Cd) <sup>2</sup>	mg/L	0.000036	0.00011	0.000005
Chromium, total (T-Cr) <sup>4</sup>	mg/L	0.001	-	<0.00050
Cobalt, total (T-Co)	mg/L	0.001	0.11	<0.00010
Copper, total (T-Cu)	mg/L	-	-	0.00097
Iron, total (T-Fe)	mg/L	0.3	1	0.04
Lead, total (T-Pb)	mg/L	-	-	0.000123
Manganese, total (T-Mn) <sup>2</sup>	mg/L	0.768	0.816	0.0016
Mercury, total (T-Hg) <sup>3</sup>	mg/L	0.00002	-	0.00000284
Molybdenum, total (T-Mo)	mg/L	0.073	46	0.000288
Nickel, total (T-Ni) <sup>2</sup>	mg/L	0.025	-	<0.00050
Selenium, total (T-Se)	mg/L	0.001	-	<0.000050
Silver, total (T-Ag) <sup>2</sup>	mg/L	0.000050	0.00010	<0.000010
Thallium, total (T-Tl)	mg/L	0.0008	-	<0.000010
Uranium, total (T-U)	mg/L	0.0085	0.033	0.000102
Vanadium, total (T-V)	mg/L	0.12	-	<0.00050
Zinc, total (T-Zn)	mg/L	-	-	<0.0030
Hexavalent Chromium, total	mg/L	0.001	-	-
<b>Dissolved Metals</b>				
Cadmium, dissolved (D-Cd) <sup>2</sup>	mg/L	0.000026	0.000038	<0.0000050
Copper, dissolved (D-Cu) <sup>2</sup>	mg/L	0.0013	0.0076	0.00068
Iron, dissolved (D-Fe)	mg/L	-	0.35	0.02
Lead, dissolved (D-Pb) <sup>2</sup>	mg/L	0.0021	-	<0.000050
Manganese, dissolved (D-Mn) <sup>2</sup>	mg/L	0.27	1.97	0.00077
Nickel, dissolved (D-Ni) <sup>2</sup>	mg/L	0.0017	0.0173	<0.00050
Strontium, dissolved (D-Sr)	mg/L	2.5	-	0.0078
Vanadium, dissolved (D-V)	mg/L	-	-	<0.00050
Zinc, dissolved (D-Zn) <sup>2</sup>	mg/L	0.0022	0.010	<0.0010
<b>Polycyclic Aromatic Hydrocarbons (PAHs)</b>				
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	-	-
<b>Volatile Organic Compounds (VOCs)</b>				
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.

<sup>1</sup> The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

<sup>2</sup> 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.

<sup>3</sup> When MeHg ≤ 0.5% of total Hg, BC WQG = 0.00002 mg/L.

<sup>4</sup> The approved BC WQG for hexavalent chromium [Cr(VI)] is 0.001 mg/L and 0.0089 mg/L for trivalent chromium [Cr(III)]. The more conservative criteria for Cr(VI) is applied to total chromium results.

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

**Table D-2: Summary of Non-Contact Water Diversion Ditch Outlet Quality Results for Methylmercury Received at the Time of Reporting.**

Parameter					Total Methylmercury	Total Mercury
Unit					µg/L	µg/L
Lowest Applicable Guideline <sup>1</sup>					0.0001 <sup>2</sup>	0.0077 – 0.026 <sup>3,4</sup>
Station	Water Type	Sample ID	Lab ID	Sampling Date		
OUT-01	Non-Contact Water Diversion Ditch Outlet	OUT-01	VA24D4181-001	2024-12-20	0.000037	0.00284

**Notes:**

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

<sup>1</sup> The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

<sup>2</sup> 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.

<sup>3</sup> CCME guideline for total mercury = 0.026 µg/L.

<sup>4</sup> 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 E: Freshwater Receiving Environment Results***

**Table E-1: Summary of Freshwater Quality Results for Dioxins and Furans Received at the Time of Reporting.**

Parameter					Lower Bound PCDD/F TEQ pg/L	Upper Bound PCDD/F TEQ pg/L
Unit						
Station	Water Type	Sample ID	Lab ID	Sampling Date		
SW-01	Lower Reach of Woodfibre Creek (near the mouth)	SW-01	L2758350-1	2024-12-06	0.0120	0.582
SW-02	Upper Reach of Mill Creek (upstream of the third bridge)	SW-02	L2758371-1	2024-12-08	0.0102	1.73
SW-07	Upstream Mill Creek (at the diversion inlet)	SW-07	L2758371-4	2024-12-08	0	1.55
SW-04	Lower Reach of East Creek (near the outlet to the outfall culvert)	SW-04	L2758371-3	2024-12-09	0	1.45

**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 F: Estuarine Water Receiving Environment Results***

**Table F-1: Summary of Estuarine Water Quality Results for Dioxins and Furans 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	L2758371-2	2024-12-08	0.00192	1.73

**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 G: Marine Water Receiving Environment Results***

**Table G-1: Summary of Marine Water Quality Results for Dioxins and Furans 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	L2758203-1	2024-11-19	0.00103	0.855
Station IDZ-E2						
IDZ-E2	0.5 m Below Surface	IDZ-E2-0.5	L2758203-2	2024-11-19	0.0148	0.884
Station IDZ-W1						
IDZ-W1	0.5 m Below Surface	IDZ-W1-0.5	L2758203-3	2024-11-19	0.0123	0.960
IDZ-W1	0.5 m Below Surface	IDZ-W1-0.5	L2758449-1	2024-12-15	0.00269	2.33
IDZ-W1	2 m Below Surface	IDZ-W1-2m	L2758449-2	2024-12-15	0.0173	2.05
IDZ-W1	2 m Above Seafloor	IDZ-W1-SF	L2758449-3	2024-12-15	0.00186	2.10
Station IDZ-W2						
IDZ-W2	0.5 m Below Surface	IDZ-W2-0.5	L2758203-4	2024-11-19	0.00276	0.678
IDZ-W2	0.5 m Below Surface	IDZ-W2-0.5	L2758248-1	2024-11-25	0.0114	0.757
IDZ-W2	2 m Below Surface	IDZ-W2-2M	L2758248-2	2024-11-25	0.00157	0.973
IDZ-W2	2 m Above Seafloor	IDZ-W2-SF	L2758248-3	2024-11-25	0.0360	1.01
IDZ-W2	0.5 m Below Surface	IDZ-W2-0.5	L2758449-4	2024-12-15	0	1.17
IDZ-W2	2 m Below Surface	IDZ-W2-2M	L2758449-5	2024-12-15	0	1.37
IDZ-W2	2 m Above Seafloor	IDZ-W2-SF	L2758449-6	2024-12-15	0.00260	1.31
Reference Stations						
Reference Station WQR1	0.5 m Below Surface	WQR1-0.5	L2758203-5	2024-11-19	0.00680	0.597
Reference Station WQR1	0.5 m Below Surface	WQR1-0.5	L2758353-1	2024-12-05	0.0300	1.01
Reference Station WQR1	2 m Below Surface	WQR1-2m	L2758353-2	2024-12-05	0.0215	1.01
Reference Station WQR1	2 m Above Seafloor	WQR1-SF	L2758353-3	2024-12-05	0	1.47
Reference Station WQR2	0.5 m Below Surface	WQR2-0.5	L2758203-6	2024-11-19	0.000621	0.82
Reference Station WQR2	0.5 m Below Surface	WQR2-0.5	L2758354-1	2024-12-06	0.0250	1.00
Reference Station WQR2	2 m Below Surface	WQR2-2m	L2758354-2	2024-12-06	0.00227	1.65
Reference Station WQR2	2 m Above Seafloor	WQR2-SF	L2758354-3	2024-12-06	0.00791	0.956

**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.