TECHNICAL MEMORANDUM

To:	**Ian McAllister, Ashleigh Crompton, Mike Champion, Jackie Boruch and Ryan Schucroft (Woodfibre LNG)**	**Date:**	**11 Oct 2024**
From:	**Cheng Kuang, Holly Pelletier and Patrick Mueller (Lorax)**	**Project #:**	**A633-8**
Subject:	**PE-111578 Weekly Discharge and Compliance Report #34 for September 29 – October 5**		

Waste Discharge Authorization (WDA) Effluent Permit PE-111578 was issued by the British Columbia Energy Regulator (BCER) to Woodfibre LNG on February 9, 2024. The associated WDA discharge and compliance monitoring program is conducted by on-site Environmental Monitors (Roe Environmental) that are sub-contracted to the civil works contractor (LB LNG). Analytical samples are submitted by Roe Environmental to ALS Environmental in Burnaby, BC, for testing. Lorax Environmental provides water quality database management and WDA compliance reporting services to Woodfibre LNG.

This technical memorandum (Report #34) was prepared by Lorax Environmental and summarizes WDA monitoring conducted the week of (September 29 – October 5). Monitoring data and pending results from prior monitoring periods available at the time of reporting are tabulated and included as appendices to this memorandum. Report #34 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."

The site layout is shown in Figure 1 at the end of this memorandum. Sedimentation pond photographs and other water management figures are included in Appendix A. Monitoring results are tabulated in Appendix B through Appendix H for contact water, treated water and receiving environment samples.

1. Current Conditions

The Construction Phase of the Woodfibre LNG Export Facility commenced in October 2023. Early stage civil works are ongoing, and these include site grading, levelling, overburden and bedrock excavation, 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 September 29 – October 5 monitoring period. The East Wastewater Treatment Plant (WWTP) and East Sedimentation Pond are commissioned for operation and discharge since April 15, 2024. Pilot testing of the West WWTP has been initiated; however, the West WWTP is not currently operated. The West Sedimentation Pond is commissioned for discharge since October 8, 2024. The non-contact and contact water conveyance ditches described in PE-111578 are partially constructed or will be constructed when site preparation activities are completed (*e.g.,* site grading, bedrock excavation). Water management facilities that are completed or were under construction during the reporting period are shown in Figure 1. Established contact water collection and dewatering locations and photographs of the sedimentation ponds are shown in Appendix A, Figure 2 through Figure 5.

The non-contact water diversion ditch west of Mill Creek was upgraded and commissioned for use on April 7 and discharges to Mill Creek at station OUT-06 (Figure 1). Other pre-existing diversion ditches west of Mill Creek have been partially upgraded and discharge at station OUT-02. During heavy precipitation these ditches also convey non-contact water to station OUT-01. To facilitate the replacement of the East Creek discharge culvert, the lower reach of East Creek was temporarily diverted to the 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, non-contaminated and contaminated contact waters within the catchments are managed to remain on site using a system of sumps and baker tanks for intermediate storage and are then directed to the East WWTP for treatment. During periods of heavy precipitation, non-contaminated contact water may also be directed to the East or West Sedimentation Ponds for settling of TSS prior to discharge. A flocculant-based TSS settling system (ESC system) has been in use at the West Sedimentation Pond since September 25. Non-contaminated contact water influent to the pond is routed through the TSS settling system (ESC system).

A revised schedule is being developed to complete the installation of the East Sedimentation Pond permanent outfall structure and construction of the West Sedimentation Pond permanent outfall is underway. A temporary discharge system (*i.e.,* pump, hosing and diffusor) is used to convey East and West Sedimentation Pond effluent to their respective authorized discharge locations when

necessary for the discharge of excess water, and if the effluent water quality is compliant with the requirements of PE-111578.

Pilot testing of the East WWTP continued during the monitoring period (September 29 – October 5). Contaminated and potentially contaminated contact waters from the 1100, 1200C, and 1300 Areas and the hydrovac dump were directed to the East WWTP for treatment, as well as water recirculated from the East Sedimentation Pond (Appendix A, Figure 2 and Figure 3). A total of 3,140 m^3 of treated WWTP effluent was discharged to the East Sedimentation Pond during the reporting period (September 29 – October 5). Daily East WWTP effluent flows are provided in Appendix C (Table C-7). The East Sedimentation Pond discharged on October 1 by pumping effluent to the discharge location SP-E-OUT. A total of 209 m^3 of effluent was discharged to Howe Sound during the reporting period.

During the monitoring period (September 29 – October 5), the West Sedimentation Pond received non-contaminated contact waters from the 4100 and 4200 Areas as well as sedimentation pond water recirculated through the TSS settling system (ESC system). There were no discharges from the West Sedimentation Pond to Howe Sound during the monitoring period.

The weather was variable September 29 – October 5, with precipitation recorded at the Woodfibre site weather station on October 1 (2.6 mm), October 4 (37.4 mm), and October 5 (0.2 mm). The total weekly precipitation amount was 40.2 mm. The daily weather conditions are summarized in Table 1.

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

Date	Precipitation (mm)	Max. Temp (°C)	Min. Temp (°C)	Weather Description
09-29-2024	0	16.9	7.9	Mix of Sun and Cloud
09-30-2024	0	14.5	5.7	Mix of Sun and Cloud
10-01-2024	2.6	14.1	9.5	Scattered Showers
10-02-2024	0	15.2	8.3	Mix of sun and cloud
10-03-2024	0	15.5	6.5	Overcast
10-04-2024	37.4	14.0	9.1	Rainy
10-05-2024	0.2	14.9	8.9	Overcast

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

2. Monitoring Summary

The PE-111578 authorized works were under construction during the September 29 – October 5 monitoring period. Compliance monitoring stations are progressively established as water management infrastructure is completed. Monitoring is conducted by the on-site Environmental Monitors (Roe Environmental). Analytical samples are submitted by Roe Environmental to ALS Environmental in Burnaby, BC, for testing.

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

- Creek water (SW-01, SW-02, SW-03, SW-04, SW-07).
- Howe Sound reference and initial dilution zone (IDZ) locations (WQR1, WQR2, IDZ-E1 and IDZ-E2).
- Non-contact diversion ditch outlets (OUT-01, OUT-02, OUT-06, and OUT-11). East Creek water was temporarily diverted to OUT-11 on September 17.
- Contact water monitoring locations (WWTP-E-IN, WWTP-E-OUT, SP-E-IN-2, SP-E-OUT, SP-E-NE, SP-E-NW, WWTP-W-IN, WWTP-W-OUT, ESC-W-IN, SP-W-W, and SP-W-E).

East Sedimentation Pond influent and effluent stations SP-E-NW and SP-E-NE, respectively, are in-pond stations that may be monitored in place of stations SP-E-IN-2 and SP-E-OUT when there is no influent to, or discharge from the East Sedimentation Pond. In-pond monitoring stations have also been established for the West Sedimentation Pond at locations SP-W-W and SP-W-E and are used for pond water quality monitoring proximal to the influent and effluent locations. Station ESC-W-IN is the influent station located at the TSS settling system for the West Sedimentation Pond.

Water quality was monitored at stations SW-01, SW-02, SW-03, SW-04, SW-07, OUT-01, OUT-02, OUT-11, IDZ-E1, IDZ-E2, WWTP-E-IN, WWTP-E-OUT, SP-E-NE, WWTP-W-IN, WWTP-W-OUT, ESC-W-IN and SP-W-E during the monitoring period (September 29 – October 5). Sampling dates and parameters tested are summarized in Table 2.

Overall, the PE-111578 monitoring requirements that were applicable during the monitoring period (September 29 – October 5) were met. Daily field parameters and a weekly analytical sample were not collected at influent station SP-E-IN-2 as the East Sedimentation Pond did not receive contact water inflows during the monitoring period. Daily field parameters and a weekly analytical sample were not collected at the influent and effluent stations of the West WWTP (WWTP-W-IN and WWTP-W-OUT, respectively) as the West WWTP was not active during the monitoring period.

Table 2: Summary of PE-111578 Monitoring Samples Collected September 29 – October 5.

Sampling Date	Sample	Description	Parameters Tested	Monitoring Frequency
September 29, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	P
	WWTP-E-OUT	East WWTP effluent	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	D, W_1
	WWTP-E-IN	East WWTP influent		
	SW-02	Upper Reach of Mill Creek (upstream of the third bridge)	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans, Glycols, Oil and Grease.	M
	SW-03	Lower Reach of Mill Creek (near the mouth, in the estuarine zone)		
	SW-07	Upstream Mill Creek (at the diversion inlet)		
September 30, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	P
	WWTP-E-OUT	East WWTP effluent	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	D, W_1
	WWTP-E-IN	East WWTP influent		
October 1, 2024	SP-E-OUT	East Sedimentation Pond effluent	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans, Glycols, Oil and Grease.	D, W_1, W_2
	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	P
	WWTP-E-OUT	East WWTP effluent	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans, Glycols, Oil and Grease.	D, W_1, W_2
	WWTP-E-IN	East WWTP influent		
October 2, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans, Glycols, Oil and Grease.	P
	WWTP-E-OUT	East WWTP effluent	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans, Glycols, Oil and Grease.	D, W_1, W_2
	WWTP-E-IN	East WWTP influent		
	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, Glycols, Oil and Grease.	M, W_3, W_4
	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		
October 3, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	P
	WWTP-E-OUT	East WWTP effluent	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	D, W_1
	WWTP-E-IN	East WWTP influent		
	SW-01	Lower Reach of Woodfibre Creek (near the mouth)	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans, Glycols, Oil and Grease.	M, W_4
	SW-07	Upstream Mill Creek (at the diversion inlet)		
October 4, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	P
	WWTP-E-OUT	East WWTP effluent	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	D, W_1
	WWTP-E-IN	East WWTP influent		
	SP-W-E [1]	West Sedimentation Pond, in-pond sample, represents effluent quality	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	P
	ESC-W-IN	West Sedimentation Pond influent, located at the TSS settling system	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	P
	SW-02	Upper Reach of Mill Creek (upstream of the third bridge)	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans, Glycols, Oil and Grease.	M, W_4
	SW-03	Lower Reach of Mill Creek (near the mouth, in the estuarine zone)		
	SW-04	Lower Reach of East Creek (near the outlet to the outfall culvert)		
	OUT-01	Non-contact diversion ditch outlet	Field, Physical & General Parameters, Total, Dissolved and Speciated Metals, Methylmercury.	M, W_4
	OUT-02	Non-contact diversion ditch outlet		
	OUT-11	Non-contact diversion ditch outlet		
October 5, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	P
	WWTP-E-OUT	East WWTP effluent	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	D, W_1
	WWTP-E-IN	East WWTP influent		

Notes:
Monitoring frequency requirements under PE-111578 are indicated as follows:
D – daily monitoring of field parameters at WWTP and sedimentation pond influent and effluent stations.
M – monthly monitoring for all parameters at WWTP, sedimentation pond and receiving environment stations.
W_1 – initial high frequency monitoring for physical parameters at WWTP and sedimentation pond influent and effluent stations (weekly for the first 6 months of monitoring).
W_2 – initial high frequency monitoring for all parameters at WWTP and sedimentation pond influent and effluent stations (weekly for the first 5 weeks of monitoring).
W_3 – initial high frequency monitoring for physical parameters at IDZ stations (weekly for the first 5 weeks of monitoring).
W_4 – spring and fall high frequency sampling for all parameters at receiving environment stations (5 samples collected over a 30-day period).
P - periodic monitoring for targeted parameters that is supplementary to PE-111578 requirements.
[1] In-Pond stations SP-E-NW and SP-E-NE may be monitored in place of stations SP-E-IN-2 and SP-E-OUT, respectively, when there is no influent to, or discharge from the East Sedimentation Pond at the time of monitoring. Similarly, the West Sedimentation Pond in-pond stations, SP-W-W and SP-W-E are monitored for water management purposes. The monitoring of in-pond stations is not a PE-111578 requirement and is conducted at the discretion of field staff.

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). The screening results are discussed in Section 3. All water quality data are stored in the Woodfibre LNG environmental monitoring database. However, for brevity, a sub-set of the results are presented in the weekly report appendices. Results are reported for parameters with a freshwater, estuarine or marine water quality guideline for the protection of aquatic life, parameters with a discharge limit, parameters of potential concern (*i.e.*, dioxins and furans) as well as other parameters that 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.

3.2 Summary of Reported Results

Field measurements and analytical results available at the time of reporting for samples collected during the monitoring period (September 29 – October 5) and for other samples that have not been previously reported are listed below in Table 3. Testing for methylmercury, dioxins and furans typically requires up to four weeks to complete. Analytical results not available at the time of reporting will be included in future weekly reports when testing is completed. Results are pending for the following samples and parameters that were collected during the monitoring period:

- SW-02, SW-03, and SW-04 collected September 29 (field measurements and all analytical parameters)
- SP-E-OUT, WWTP-E-IN, and WWTP-E-OUT collected October 1 (dioxins and furans)

- SP-E-NE, WWTP-E-IN, and WWTP-E-OUT collected October 2 (all analytical parameters)
- IDZ-E1 and IDZ-E2 collected October 2 (field measurements and all analytical parameters)
- SW-01 and SW-07 collected October 3 (field measurements and all analytical parameters)
- SW-02, SW-03, SW-04, OUT-01, OUT-02, and OUT-11 collected October 4 (field measurements and all analytical parameters). During the reporting period East Creek was flowing through OUT-11.

Table 3: Summary of Analytical Results Included in Weekly Discharge and Compliance Report #34.

Sample	Description	Sampling Date	Parameters Reported
IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	August 23, 2024	Methylmercury.
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		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	August 26, 2024	Dioxins and Furans.
SP-E-NW	East Sedimentation Pond, in-pond sample, represents influent quality		
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
SW-01	Lower Reach of Woodfibre Creek (near the mouth)	August 27, 2024	Dioxins and Furans.
SW-02	Upper Reach of Mill Creek (upstream of the third bridge)		
SW-04	Lower Reach of East Creek (near the outlet to the outfall culvert)		
SW-07	Upstream Mill Creek (at the diversion inlet)		
WWTP-W-OUT	West WWTP effluent	August 28, 2024	Dioxins and Furans.
WWTP-W-IN	West WWTP influent		
SW-03	Lower Reach of Mill Creek (near the mouth, in the estuarine zone)		Methylmercury.
WWTP-E-OUT	East WWTP effluent	August 29, 2024	Dioxins and Furans.
WWTP-E-IN	East WWTP influent		
WWTP-W-OUT	West WWTP effluent		
WWTP-W-IN	West WWTP influent		
WWTP-W-OUT	West WWTP effluent	September 2, 2024	Dioxins and Furans.
WWTP-W-IN	West WWTP influent		
WWTP-W-OUT	West WWTP effluent	September 4, 2024	Dioxins and Furans.
WWTP-W-IN	West WWTP influent		
SP-E-OUT	East Sedimentation Pond effluent	September 8, 2024	Dioxins and Furans.
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
WWTP-E-OUT	East WWTP effluent	September 11, 2024	Dioxins and Furans.
WWTP-E-IN	East WWTP influent		
WWTP-W-OUT	West WWTP effluent		
WWTP-W-IN	West WWTP influent		
WWTP-W-OUT	West WWTP effluent	September 13, 2024	Dioxins and Furans.
WWTP-W-IN	West WWTP influent		
SP-E-OUT	East Sedimentation Pond effluent	September 17, 2024	Dioxins and Furans.
IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	September 24, 2024	Field and Physical Parameters.
IDZ-E1-2m	Howe Sound IDZ station E1; 2 m below surface		
IDZ-E1-SF	Howe Sound IDZ station E1; 2 m above the seafloor		
IDZ-E2-0.5	Howe Sound IDZ station E2; 0.5 m below surface		
IDZ-E2-2m	Howe Sound IDZ station E2; 2 m below surface		
IDZ-E2-SF	Howe Sound IDZ station E2; 2 m above the seafloor		
ESC-W-IN	West Sedimentation Pond influent, located at the TSS settling system	September 26, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
SP-W-E	West Sedimentation Pond, in-pond sample, represents effluent quality	September 27, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
ESC-W-IN	West Sedimentation Pond influent, located at the TSS settling system		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	September 28, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
SP-W-E	West Sedimentation Pond, in-pond sample, represents effluent quality		
ESC-W-IN	West Sedimentation Pond influent, located at the TSS settling system		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	September 29, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	September 30, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	October 1, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
SP-E-OUT	East Sedimentation Pond effluent		Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, VOCs, and Methylmercury.
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	October 3, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	October 4, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
SP-W-E	West Sedimentation Pond, in-pond sample, represents effluent quality		
ESC-W-IN	West Sedimentation Pond influent, located at the TSS settling system		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	October 5, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		

3.3 East Sedimentation Pond

The East Sedimentation Pond influent and effluent results are screened against PE-111578 discharge limits. Parameters without a discharge limit are screened against Canadian, Federal and BC WQGs for the protection of marine water aquatic life. Influent water is not discharged from site, therefore only effluent water quality is assessed for exceedances. The analytical results, daily field parameters, discharge limits and WQGs are summarized in Table B-1 through B-4 (analytical results) and Table B-5 (field measurements) of Appendix B. Screening results are summarized below for parameter concentrations that exceeded PE-111578 discharge limits and WQGs at the effluent compliance station (Table 4 and Table 5) and the in-pond effluent quality station (Table 6 and Table 7).

During the monitoring period (September 29 – October 5), the East Sedimentation Pond received East WWTP treated effluent each day. The sedimentation pond did not receive contact water during the monitoring period; therefore, field measurements and analytical samples at station SP-E-IN-2 were not collected.

The East Sedimentation Pond discharged on October 1 by pumping effluent to the discharge location SP-E-OUT. Field measurements and an analytical sample were collected at the SP-E-OUT sampling port while the pond was discharging, and monitoring results met PE-111578 discharge limits and long-term WQGs except total vanadium, hexavalent chromium and nitrate. The total vanadium concentration (0.00882 mg/L) was 1.1 times above the discharge limit (0.0081 mg/L), and hexavalent chromium and nitrate concentrations were 1.5 and 1.7 times their respective long-term WQGs. The effluent water quality met short-term WQGs for parameters not regulated by PE-111578 discharge limits.

Field measurements were taken daily at the in-pond effluent quality station (SP-E-NE) during the monitoring period (September 29 – October 5). Field pH ranged from 6.3 to 7.7 at SP-E-NE during the monitoring period (September 29 – October 5), while dissolved oxygen ranged from 8.13 to 10.93 mg/L, and turbidity ranged from 1.65 to 55.40 NTU (Appendix B, Table B-5).

Analytical results for samples collected at in-pond effluent station on September 28 (as described in Weekly Report #33), 29, 30, October 1, 3, 4, and 5 were available at the time of reporting and results met PE-111578 discharge limits except for total vanadium in the September 29, 30 and October 1 samples and total zinc in the October 4 and 5 samples (Table 6). Analytical results met WQGs except nitrate measured at station SP-E-NE was above the WQG on September 29 to October 5 while hexavalent chromium was above the WQG on September 29, 30, and October 1.

Methylmercury analytical results were available at the time of reporting for the SP-E-OUT sample collected October 1. The methylmercury concentration was 0.000044 µg/L at SP-E-OUT on October 1 and total mercury met the WQG.

Dioxins and furans analytical results were available at the time of reporting for SP-E-NE and SP-E-NW collected on August 26 (as discussed in Weekly Report #29) and for East Sedimentation Pond discharge (SP-E-OUT) collected on September 8 and 17 (as discussed in Weekly Report #31 and 32, respectively).

The lower and upper bound PCDD/F TEQ concentrations were 0.0833 pg/L and 1.54 pg/L, respectively, at SP-E-NE and 0.124 pg/L and 1.26 pg/L, respectively, at SP-E-NW on August 26. The lower and upper bound PCDD/F TEQ concentrations were 1.14 pg/L and 2.11 pg/L, respectively, in the SP-E-OUT sample collected September 8 while the lower and upper bound PCDD/F TEQ concentrations were 0.0256 pg/L and 0.812 pg/L, respectively, in the SP-E-OUT sample collected September 17.

Table 4:
Summary of Parameters Exceeding PE-111578 Discharge Limits in Effluent Discharged from the East Sedimentation Pond (September 29 – October 5)

Parameter	Units	Discharge Limit	N	N >WQG	Commentary
Total Vanadium	mg/L	0.0081	1	1	Total vanadium measured at station SP-E-OUT on October 1 (0.00882 mg/L) was 1.1 times greater than the PE-111578 discharge limit.

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

Table 5:
Summary of Parameters Exceeding WQGs in Effluent Discharged from the East Sedimentation Pond (September 29 – October 5)

Parameter	Units	WQG	N	N >WQG	Commentary
Nitrate	mg/L	3.7	1	1	Nitrate measured at station SP-E-OUT on October 1 (5.47 mg/L) was 1.5 times greater than the long-term WQG. The nitrate concentration met the short-term WQG (339 mg/L).
Hexavalent Chromium	mg/L	0.0015	1	1	Hexavalent chromium measured at station SP-E-OUT on October 1 (0.00248 mg/L) was 1.7 times greater than the long-term WQG.

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

Table 6:
Summary of Parameters Exceeding PE-111578 Discharge Limits at the In-Pond Effluent Quality Station SP-E-NE (September 29 – October 5)

Parameter	Units	WQG	N	N >WQG	Commentary
Total Vanadium	mg/L	0.0081	6	3	Total vanadium measured at station SP-E-NE on September 29, 30, and October 1 was 1.1, 1.2, and 1.1 times greater than the PE-111578 discharge limit, respectively.
Total Zinc	mg/L	0.0133	6	2	Total zinc measured at station SP-E-NE on October 4 and 5 was 1.1 and 1.4 times greater than the PE-111578 discharge limit, respectively.

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

Table 7:
Summary of Parameters Exceeding WQGs at the In-Pond Effluent Quality Station SP-E-NE (September 29 – October 5)

Parameter	Units	WQG	N	N >WQG	Commentary
Nitrate	mg/L	3.7	6	5	Nitrate measured at station SP-E-NE on September 29 to October 5 was 1.2 to 1.6 times greater than the long-term WQG. The nitrate concentrations met the short-term WQG (339 mg/L).
Hexavalent Chromium	mg/L	0.0015	6	3	Hexavalent Cr measured at station SP-E-NE on September 29, 30, and October 1 was 1.5 to 1.7 times greater than the long-term WQG.

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

3.4 East Wastewater Treatment Plant

The East WWTP influent and effluent results are screened against the operational minimum discharge objectives (MDOs) which the WWTP is currently being operated to meet. Contaminated contact water is directed to the WWTP influent, and it is expected that influent water is unlikely to meet the operational MDOs. The analytical results, daily field measurements, and the operational MDOs are summarized in Table C-1 through C-6 (analytical results) and Table C-7 (field measurements) of Appendix C. Screening results are summarized in Table 8 for parameter concentrations that do not meet the operational MDOs in WWTP effluent.

The East WWTP received contact water as well as recirculated water from the East Sedimentation Pond each day during the monitoring period. The influent waters were treated by the East WWTP and discharged to the East Sedimentation Pond. Field measurements were collected each day at the influent (WWTP-E-IN) and effluent (WWTP-E-OUT) stations. Analytical results for samples collected from the East WWTP influent and effluent stations on September 28 (as described in Weekly Report #33), 29, 30, October 1, 3, 4, and 5 were available at the time of reporting.

Field pH ranged from 6.4 to 7.7 at WWTP-E-IN during the monitoring period (September 29 – October 5), while dissolved oxygen ranged from 7.51 to 10.05 mg/L, and turbidity ranged from 0.75 to 6.27 NTU (Appendix C, Table C-7). Field pH, dissolved oxygen, and turbidity in the East WWTP effluent (WWTP-E-OUT) ranged from pH 5.7 to 9.8, 5.68 to 9.26 mg/L, and 0.38 to 8.62 NTU, respectively.

Effluent quality monitored at WWTP-E-OUT achieved operational MDOs for all parameters except for pH (September 29), total copper (October 1 and 4), total lead and total mercury (October 4), total vanadium (September 29, 30, and October 1), total zinc (September 30, October 1 and 4), and hexavalent chromium (September 29, 30, and October 1; Table 8). The pH was elevated for a brief period on September 29 before being returned to within the MDO range.

From September 27 until discharge ceased on October 1 the East WWTP was optimized to treat for total copper and total zinc. Total vanadium is not effectively treated under this optimization.

From October 1 to 5, the treatment process was adjusted to target total vanadium, noting that total copper and total zinc are not effectively treated under the conditions that remove total vanadium.

The East WWTP was not operated to treat for hexavalent chromium for the September 27 to October 1 period because concrete contact water, the primary source of hexavalent chromium, was not directed to the WWTP during this period. Due to the observed increasing concentration trend, hexavalent chromium treatment was activated from October 2 to 5.

Methylmercury analytical results were available at the time of reporting for the East WWTP influent and effluent samples collected October 1. The methylmercury concentrations were 0.000050 µg/L at WWTP-E-IN and on 0.000045 µg/L at WWTP-E-OUT on October 1.

Dioxins and furans analytical results were available at the time of reporting for the WWTP-E-IN and WWTP-E-OUT samples collected on August 26 and August 29 (as discussed in Weekly Report #29) and September 8 and September 11 (as discussed in Weekly Report #31). The lower and upper bound PCDD/F TEQ concentrations ranged from 0.00192 to 0.0984 and 1.05 to 1.45 pg/L in the influent sample, respectively. In the effluent sample, the lower and upper bound PCDD/F TEQ concentrations ranged from 0.00160 to 0.0644 and 1.03 to 1.23 pg/L, respectively.

Table 8:
Summary of Parameters Outside Operational Minimum Discharge Objectives (MDOs) at East WWTP Effluent Station WWTP-E-OUT (September 29 – October 5).

Parameter	Units	MDO	N	N >MDO	Commentary
Field pH	s.u.	5.5 – 9.0	6	1	Field pH measured in the September 29 effluent sample (pH 9.8) was above the upper limit of the operational MDO. The pH was elevated for a brief period before being returned to within the MDO range.
Total Copper	mg/L	0.0043	6	2	The total copper concentrations in the October 1 (0.00645 mg/L) and October 4 (0.0137 mg/L) effluent samples were 1.5 and 3.2 times the operational MDO.
Total Lead	mg/L	0.0035	6	1	The total lead concentration in the October 4 effluent sample (0.00541 mg/L) was 1.5 times the operational MDO.
Total Mercury	mg/L	0.000016	6	1	The total mercury concentration in the October 4 effluent sample (0.0000195 mg/L) was 1.2 times the operational MDO.
Total Vanadium	mg/L	0.0081	6	3	The total vanadium concentrations in the September 29 (0.0103 mg/L), September 30 (0.00988 mg/L), and October 1 (0.0104 mg/L) effluent samples were 1.2 to 1.3 times the operational MDO. On October 1, the treatment process was adjusted to target total vanadium
Total Zinc	mg/L	0.0133	6	3	The total zinc concentrations in the September 30 (0.0231 mg/L), October 1 (0.115 mg/L), and October 4 (0.247 mg/L) effluent samples were 1.7 to 19 times the operational MDO.
Hexavalent Chromium	mg/L	0.0015	6	3	The total hexavalent chromium concentrations in the September 29 (0.00281 mg/L), September 30 (0.00310 mg/L), and October 1 (0.00272 mg/L) effluent samples were 1.8 to 2.1 times the operational MDO. Hexavalent chromium treatment was activated from October 2 to 5

MDO = minimum discharge objectives (MDOs) for WWTP effluent that are listed in Appendix B of the Construction Wastewater Treatment Plant Operations Environmental Protection Plan dated February 7, 2024.
N = number of samples.
Non-detect results are screened using the detection limit value.

3.5 West Sedimentation Pond

The West Sedimentation Pond influent and effluent results 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. Influent water is not discharged from site, therefore only effluent water quality is assessed for exceedances. The analytical results, discharge limits and WQGs are summarized in Table D-1 (in-pond analytical results), Table D-2 (influent analytical results) and Table D-3 (field measurements) of Appendix D.

Field measurements were taken at the influent station (ESC-W-IN) on October 4 and 5, and at the in-pond effluent quality station (SP-W-E) on October 4. Field pH, dissolved oxygen and turbidity of the influent were pH 7.1 and 7.7, 10.09 and 10.81 mg/L, and 0.34 and 3.65 NTU. The in-pond field pH was 8.6 at SP-W-E on October 4, while dissolved oxygen was 10.67 mg/L, and turbidity was 4.86 NTU (Appendix D, Table D-3).

Analytical results were available at the time of reporting for samples collected at ESC-W-IN from September 26 to 28 and October 4, and samples collected from SP-W-E on September 27 and 28 (as discussed in Weekly Report #33) and October 4. Influent quality was above the discharge limit in one or more samples collected September 26 to 28 for total lead (0.0037 mg/L) and total copper (0.00470 to 0.00805 mg/L) and these concentrations are attributed to particle-bound forms of these metals. Dissolved oxygen ranged from 7.08 to 7.83 mg/L and did not meet the WQG.

Effluent quality monitored at the in-pond station SP-W-E met PE-111578 discharge limits and WQGs except pH (September 27, pH 9.3) and dissolved oxygen (September 27 and 28, 6.57 and 7.77 mg/L, respectively). The West Sedimentation Pond was not commissioned for discharge and did not discharge September 27 to October 5.

3.6 West Wastewater Treatment Plant

The West WWTP influent and effluent results are screened against the operational MDOs which the WWTP is currently being operated to meet. For previous reports (up to Report #30) the WWTP results were screened against design MDOs which are the same as the operational MDOs, except for parameters with sedimentation pond discharge limits (pH, TSS, total copper, total lead, total vanadium and total zinc). For these parameters, the design MDOs are equal to the lowest WQG values for these parameters whereas the operational MDOs are set to the sedimentation pond discharge limits. Therefore, the weekly report screening criteria have been updated to align with the operational MDOs.

Contaminated contact water is directed to the WWTP influent, and it is expected that influent water is unlikely to meet the operational MDOs. The analytical results and the operational MDOs for the West WWTP pilot testing are summarized in Table E-1 and E-2 (analytical results) of Appendix E.

The West WWTP was not active during the monitoring period and pilot trials are currently suspended. Field measurements and analytical samples were not collected during the monitoring period at the influent (WWTP-W-IN) and effluent (WWTP-W-OUT) stations.

Dioxins and furans analytical results were available at the time of reporting for the WWTP-W-IN and WWTP-W-OUT samples collected on August 28 and August 29 (as discussed in Weekly Report #29), September 2 and September 4 (as discussed in Weekly Report #30), and September 11 and September 13 (as discussed in Weekly Report #31). The lower and upper bound PCDD/F TEQ concentrations ranged from 0.00303 to 0.491 and 0.949 to 1.61 pg/L in the influent sample, respectively. In the effluent sample, the lower and upper bound PCDD/F TEQ concentrations ranged from 0 to 0.0536 and 0.746 to 1.19 pg/L, respectively.

3.7 Non-Contact Water Diversion Ditch Outlets

Water quality results were not available for the non-contact water diversion ditch outlets at the time of reporting.

3.8 Freshwater and Estuarine Water Receiving Environment

Dioxins and furans analytical results were available at the time of reporting for the August 27 freshwater samples (as discussed in Weekly Report #29) collected near the mouth of Woodfibre Creek (station SW-01), Mill Creek (station SW-02 and SW-07), and East Creek (station SW-04). The lower and upper bound PCDD/F TEQ concentrations ranged from 0.00239 to 0.00924 pg/L and 1.16 to 1.38 pg/L, respectively. The PCDD/F TEQ concentrations are within the ranges observed in the pre-construction baseline monitoring program.

Methylmercury analytical results were available at the time of reporting for the estuarine sample collected near the mouth of Mill Creek (station SW-03) on August 28 (as discussed in Weekly Report #29). The methylmercury concentration was 0.000030 µg/L at SW-03 on August 28 and total mercury met the WQG.

3.9 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 are considered to represent the natural condition of the water and are not flagged as exceedances. The analytical results, field parameters and WQGs are summarized in Appendix G.

Analytical results were available for the September 24 (field and physical parameters only) marine receiving environment samples collected at IDZ-E1 and IDZ-E2 at 0.5 and 2 m below the water surface and 2 m above the seafloor (as discussed in Weekly Report #33). Parameter concentrations

met WQGs except dissolved oxygen in IDZ-E1 and IDZ-E2 samples collected at 2 m above the seafloor. The dissolved oxygen concentrations were within the concentration ranges observed in the pre-construction baseline monitoring program for the marine reference stations.

Methylmercury analytical results were available at the time of reporting for the marine water receiving environment stations IDZ-E1 and IDZ-E2 collected on August 23 (as discussed in Weekly Report #28). The methylmercury concentrations were <0.000020 µg/L at in all samples collected on August 23 and total mercury met the WQG. The methylmercury concentrations were within the concentration ranges observed in the pre-construction baseline monitoring program for the marine reference stations.

4. Quality Control

This section presents the results of the quality control (QC) evaluation for the PE-111578 weekly report (Table 9). 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 9. Any items flagged for follow-up are carried forward to future reports until they are closed.

Table 9: Weekly Report QC Evaluations and Ongoing Items

QC Procedure	Observation	Investigation/Resolution
Reporting Period (September 29 – October 5, Report #34)		
Monitoring Program Evaluation	PE-111578 contact water, non-contact water and initial dilution zone monitoring stations have not been fully established.	The PE-111578 authorized works were under construction during the reporting period. Monitoring stations are progressively established as water management infrastructure is completed. The East Sedimentation Pond and East WWTP are completed, and pilot testing of the East WWTP is ongoing. The East Sedimentation Pond was commissioned for discharge on April 15. The West Sedimentation Pond is complete, except the outfall structure and West WWTP pilot testing is currently suspended. The West Sedimentation Pond is commissioned for discharge as of October 8. The non-contact water diversion ditch that discharges at station OUT-06 has been commissioned, and stations for pre-existing outfalls OUT-01, OUT-02, and OUT-11 have also been established. The lower reach of East Creek is temporarily diverted through OUT-11 outfall since September 17 to facilitate replacement of the East Creek outfall culvert (OUT-12). This item remains open.
Monitoring Program Evaluation	PE-111578 monitoring requirements were incomplete for September receiving environment samples.	The September monthly monitoring at IDZ-E1, IDZ-E2, WQR1, and WQR2 (conducted Sep. 9 and 10) omitted testing for VH, BTEX, VOC, methylmercury, dioxins and furans. Follow-up review with the QEP and site staff responsible for sampling has been completed, testing of these parameters was inadvertently overlooked. Samples collected on October 6 and 9 at IDZ-E1, IDZ-E2, WQR1, and WQR2 included the full suite of parameters. This item is closed.
Review of Water Management	Pilot testing of the West WWTP is suspended since September 25.	Pilot testing of the West WWTP was suspended September 25. The suspension was implemented for the temporary reconfiguration of the plant to allow 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. This item is closed.
Non-compliant Effluent	Non-compliant effluent was discharged from the East Sedimentation Pond on October 1.	Discharge of East Sedimentation Pond Effluent was initiated October 1, 10:49, based on compliant results for in-pond samples collected September 27, and was suspended at 12:50 after results for samples collected September 29 were received. Analytical results from the effluent sample collected on October 1 (station SP-E-OUT) showed a T-V concentration (0.00882 mg/L) 1.1 times above the discharge limit. The effluent water quality met short-term WQGs for parameters not regulated by PE-111578 discharge limits. Discharge remains suspended pending additional treatment and confirmation of compliant water quality results. This item is closed.
Pending Data	Analytical results for samples collected September 29, October 2, 3, and 4 were not reported.	Analytical results for samples collected September 29, October 2, 3, and 4 were not complete at the time of Report #34 preparation. The pending results will be included in future weekly reports when available. This item remains open.
	Dioxin and furan results for samples collected October 1 were not reported.	Dioxin and furan results for samples collected October 1 were not complete at the time of Report #34 preparation. Testing of dioxins and furans typically requires up to 4 weeks to complete. The pending results will be included in future weekly reports when available. This item remains open.
Ongoing Items from Previous Weekly Reports		
Report #28: Pending Data	Analytical results for samples collected August 21 and 23 were not reported.	Available analytical results for samples collected August 21 are discussed in Sections 3.3 and 3.4 of Report #29 and dioxins and furans results are discussed in Sections 3.3 and 3.4 of Report #32. Available analytical results for samples collected August 23 are discussed in Section 3.9 of Report #30, results for dioxins and furans are discussed in Section 3.9 of Report #33, and methylmercury results are discussed in Section 3.9 of Report #34. This item is closed.
Report #29: Pending Data	Analytical results for samples collected at marine reference stations on August 26 and the estuarine receiving environment on August 28 were not reported.	Available analytical results for samples collected from the marine reference stations on August 26 and the estuarine receiving environment station on August 28 are discussed in Sections 3.9 and 3.8 of Report #31, respectively. Dioxins and furans results are discussed in Sections 3.8 and 3.9 of Report #33. Methylmercury results for the sample collected August 28 are discussed in Section 3.8 of Report #34. Analytical results for methylmercury for samples collected August 26 were not complete at the time of Report #34 preparation as a reanalysis has been requested. The pending results will be included in future weekly reports when available. This item remains open.
Report #29: Pending Data	Methylmercury, dioxins and furans results for samples collected August 26 – 29 were not reported.	Methylmercury results are discussed in Sections 3.4 and 3.6 of Report #30. Analytical results for dioxins and furans for samples collected August 26, 27, 28, and 29 are discussed in Sections 3.3, 3.4, 3.6, and 3.8. This item is closed.
Report #30: Pending Data	Dioxins and furans results for samples collected September 2 and 4 were not reported.	Dioxins and furans results are discussed in Section 3.6 of Report #34. This item is closed.
Report #31: Pending Data	Methylmercury, dioxins and furans results for samples collected September 8, 11, and 13 were not reported.	Methylmercury results for samples collected September 8 and 11 are discussed in Sections 3.3, 3.4, and 3.6 of Report #32. Analytical results for methylmercury for samples collected September 13 are discussed in Section 3.6 of Report #33. Results for dioxins and furans for samples collected September 8, 11, and 13 are discussed in Sections 3.3, 3.4, and 3.6. This item is closed.
Report #32: Pending Data	Analytical results were not reported for samples collected September 18, 19 and 21.	Available analytical results for samples collected September 18 and 21 are discussed in Sections 3.9 and 3.6 of Report #33, respectively. Analytical results for samples collected September 19 were not complete at the time of Report #34 preparation. Analytical results for methylmercury, dioxins and furans were not complete at the time of Report #34 preparation. Testing of methylmercury, dioxins and furans typically requires up to 4 weeks to complete. The pending results will be included in future weekly reports when available. This item remains open.
	Dioxins and furans for the sample collected September 17 were not reported.	Analytical results for dioxins and furans for the SP-E-OUT sample collected September 17 are discussed in Section 3.3 of Report #34. This item is closed.
Report #33: Pending Data	Analytical results for samples collected September 24, 27 and 28 were not reported.	Analytical results for samples collected September 24, 27, and 28 are discussed in Sections 3.3, 3.4, 3.5 and 3.9 of Report #34. Analytical results for samples collected September 28 from freshwater receiving environment stations (SW-01 and SW-04) and the non-contact diversion ditch (OUT-11) were not complete at the time of Report #34 preparation. The pending results will be included in future weekly reports when available. This item remains open.
	Methylmercury, dioxins and furans results were not reported for samples collected September 23.	Analytical results for methylmercury, dioxins and furans were not complete at the time of Report #34 preparation for samples collected September 23. Testing of methylmercury, dioxins and furans typically requires up to 4 weeks to complete. The pending results will be included in future weekly reports when available. This item remains open.
Report #33: Data QC	Raised detection limits for methylmercury have been reported due to method blank contamination observed during analytical testing.	The reported detection limit for methylmercury has been raised above the routine detection limit in some samples due to method blank contamination observed during the analytical testing. An investigation into the root cause has been initiated. Reanalysis of samples that were affected by the raised detection limits have been requested to achieve the typically reported detection limits for methylmercury, however this has resulted in reporting delays. The pending results will be included in future weekly reports when available. This item remains open.
Report #33	Sampling was not conducted as prescribed in PE-111578 on occasion.	Field measurements and analytical samples were not collected as per the monitoring requirements in PE 111578 at SP-E-OUT (September 25) and the West WWTP influent and effluent stations during the monitoring period. In September, OUT-01, OUT-02, and OUT-06 were not sampled as there was no flowing water at the time of monitoring. Monthly sampling requirements for OUT-11 were met except for methylmercury. Permit monitoring requirements for non-contact water diversion outlets, WWTP influent and effluent, and sedimentation pond effluent (daily field parameters, weekly analytical parameters, and monitoring station location) were reviewed with the QEP and site Environmental staff: • The operation of the West WWTP was suspended on September 25, therefore WWTP monitoring was not conducted from September 25 onwards. • Although field measurements and analytical samples were not collected at station SP-E-OUT, they were collected at in-pond station SP-E-NE on September 25. The in-pond SP-E-NE station is proximal to the intake for effluent discharge and water collected at this station is considered representative of effluent that is discharged from the pond. The water quality of the SP-E-NE sample collected September 25 was compliant with PE-111578 requirements for sedimentation pond effluent (Refer to Table B-1 of Report #33). Both daily and weekly monitoring were conducted at SP-E-OUT during the next discharge event on October 1. • Since September 17 East Creek has been temporarily diverted though outlet OUT-11. Therefore, the September 28 sample collected OUT-11 is entirely East Creek water that was also monitored September 28 at the inlet to the culvert (station SW-04). Methylmercury was monitored at station SW-04 on September 28. This item is closed.

Notes:

Result QA/QC screening includes the evaluation of field and lab QC results, comparison of total and dissolved metal results and review for modified detection limits.
Pending data are outstanding results from monitoring samples reported in the current or previous weekly reports.
Monitoring program evaluation is an assessment of the completeness of the monitoring program compared to PE-111578 specified or implied requirements.
WWTP performance evaluation is an assessment of WWTP effluent quality compared to operational MDOs.
Data review under QC Procedure 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.

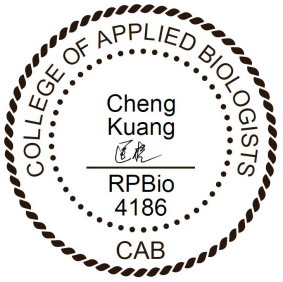
5. Closure

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.

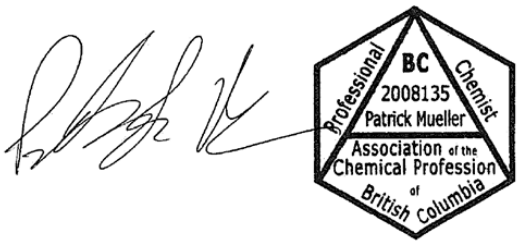
Regards,

LORAX ENVIRONMENTAL SERVICES LTD.

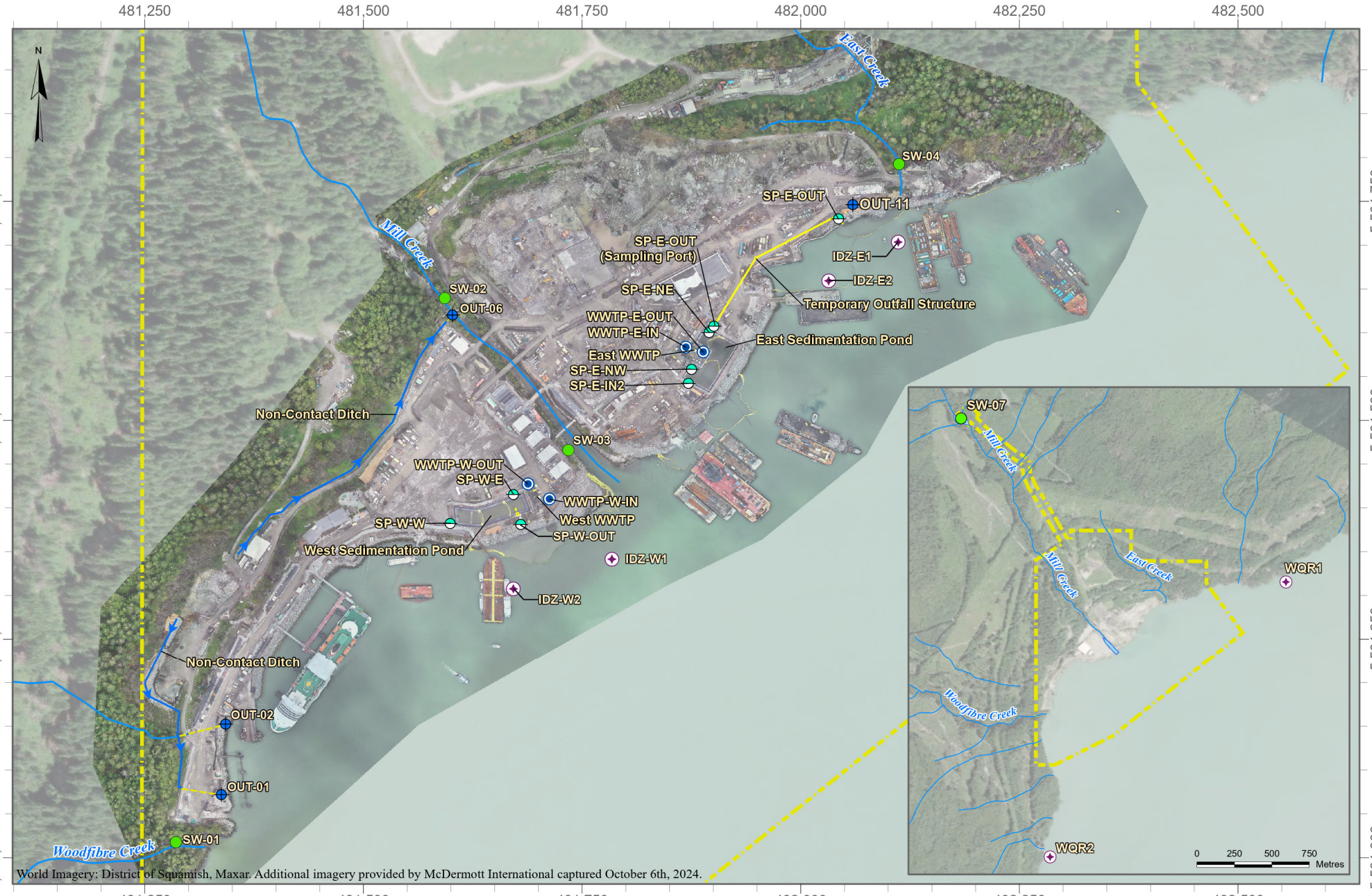
Holly Pelletier, B.Sc., GIT.
Environmental Geoscientist



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



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



LEGEND

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

DATE SAVED:	Oct 10, 2024
DRAWN BY:	DM
REVIEWED:	PM
VERSION:	1

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

1:6,000

0 50 100 150 Metres

CLIENT: Woodfibre LNG

LORAX ENVIRONMENTAL

PROJECT:

Woodfibre LNG Project Construction Phase

TITLE:
Completed or Under Construction Water Management Facilities and Established PE-111578 Monitoring Stations (October 5, 2024)

PROJECT #: A633-7 FIGURE: 1

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

Appendix A: East and West Catchment Photographs

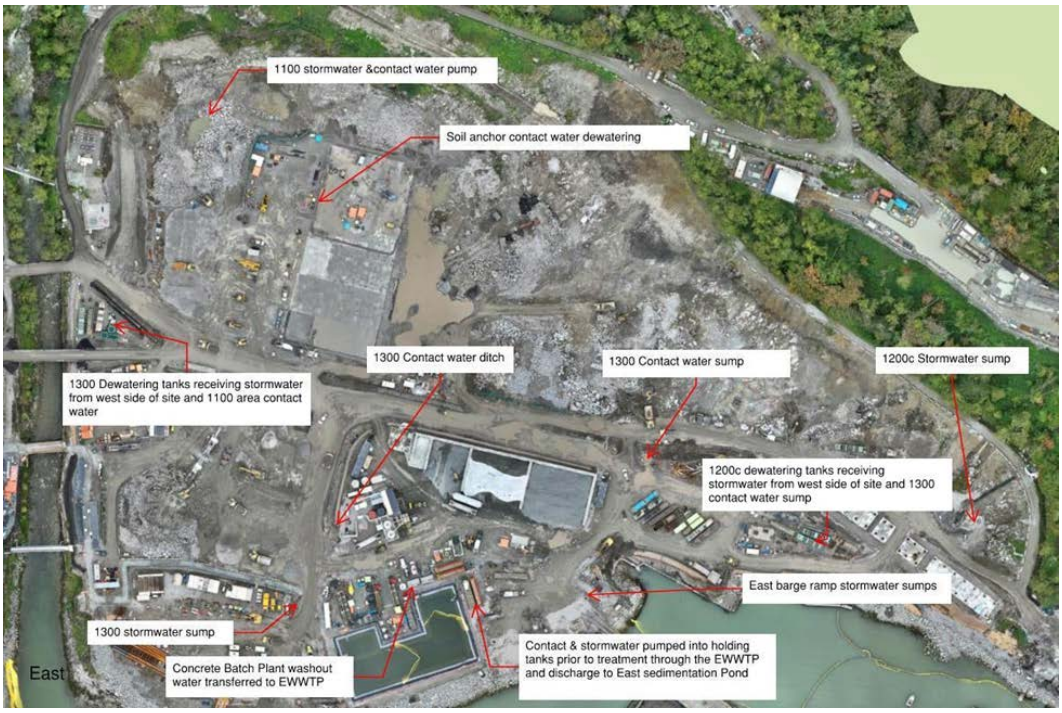


Figure 2: East Catchment dewatering areas. Contact water from the 1100, 1200C, and 1300 Areas and the hydrovac dump was directed to the East WWTP during the monitoring period (September 29 – October 5).

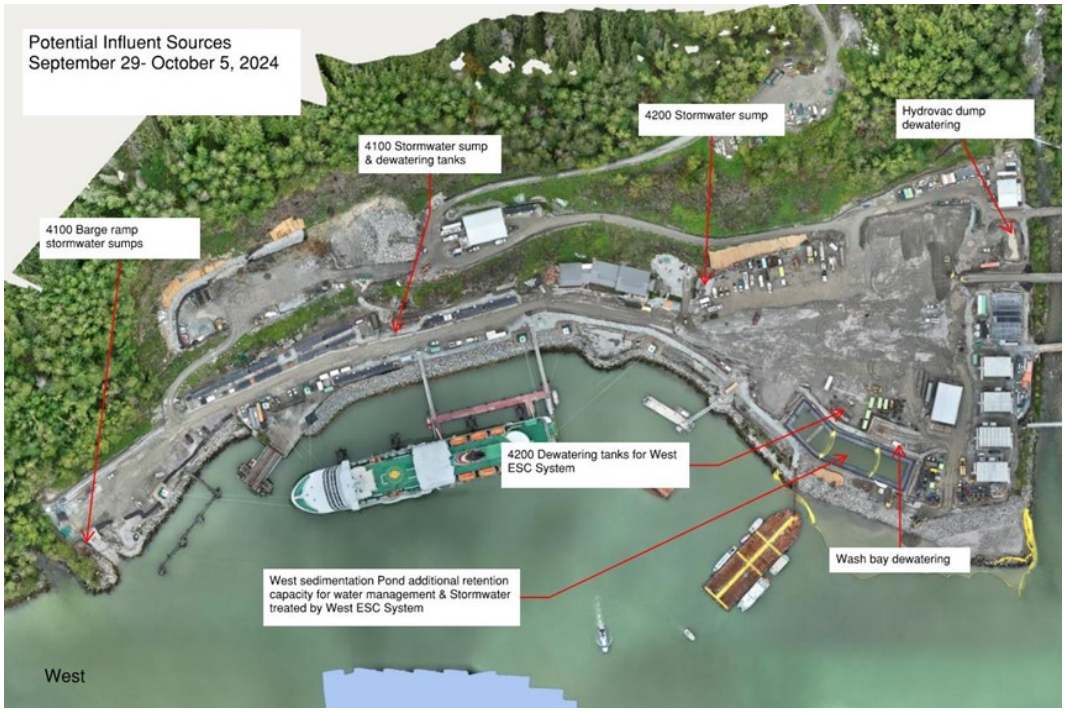


Figure 3: West Catchment dewatering areas. Non-contaminated contact water from the 4100 and 4200 Areas was directed to the West Sedimentation Pond during the monitoring period (September 29 – October 5).

Figure 4: Aerial view of the East Sedimentation Pond showing the placement of two sediment curtains (October 2, 2024). The East WWTP is located on the left side of the pond.

Figure 5: Aerial view of the West Sedimentation Pond showing the placement of two sediment curtains (October 2, 2024). The West WWTP is located on the right side of the pond.

Appendix B: East Sedimentation Pond Results

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

Parameter	Unit	Lowest Applicable Guideline [1]		PE-111578 Discharge Limit	East Sedimentation Pond			
					In-Pond at Effluent Location	In-Pond at Effluent Location	In-Pond at Effluent Location	Effluent
					SP-E-NE	SP-E-NE	SP-E-NE	SP-E-OUT
					VA24C5904-006	VA24C5907-003	VA24C5952-003	VA24C6068-004
		Long Term	Short Term		2024-09-28 10:50	2024-09-29 10:40	2024-09-30 15:33	2024-10-01 11:46
General Parameters								
pH - Field	pH units	- [2]	-	5.5 - 9.0	6.9	7.1	6.5	7.4
Conductivity - Field	µS/cm	-	-	-	926	873	967	1021
Temperature - Field	°C	-	-	-	15.7	15.1	14.8	14
Salinity - Field	ppt	-	-	-	0.56	0.54	0.6	0.65
Turbidity - Field	NTU	-	-	-	1.51	55.4	2.9	1.44
TSS	mg/L	-	-	25	<3.0	<3.0	<3.0	<3.0
Dissolved Oxygen - Field	mg/L	>=8	-	-	***6.54***	8.86	8.13	8.71
Anions and Nutrients								
Sulphate	mg/L	-	-	-	47.2	55	59.9	64.4
Chloride	mg/L	-	-	-	33.2	27.3	25.6	25.5
Fluoride	mg/L	-	1.5	-	0.127	0.119	0.107	0.136
Ammonia ($N\text{-}NH_3$)	mg/L	Variable [3]	Variable [3]	-	0.0068	0.0719	0.143	0.126
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	0.0218	0.306	0.585	0.714
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	0.329	2.52	***4.71***	***5.47***
Total Metals								
Aluminum, total (T-Al)	mg/L	-	-	-	0.0761	0.125	0.319	0.197
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.0039	0.00418	0.00473	0.00454
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00355	0.00352	0.00377	0.00351
Barium, total (T-Ba)	mg/L	-	-	-	0.00323	0.00258	0.00368	0.00307
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000100	<0.000100	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	-	-	0.022	0.033	0.04	0.034
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000150	<0.0000150	<0.0000150	<0.0000150
Chromium, total (T-Cr)	mg/L	-	-	-	0.00105	0.00235	0.00294	0.00273
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00010	0.00036	0.00064	0.0007
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00101	0.0017	0.00208	0.00162
Iron, total (T-Fe)	mg/L	-	-	-	0.013	0.028	0.133	0.046
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.000057	0.000111	0.000418	0.000308
Manganese, total (T-Mn)	mg/L	-	-	-	0.00125	0.00147	0.00389	0.00147
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0515	0.0662	0.069	0.07
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00050	<0.00050	<0.00050	<0.00100
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000365	0.000517	0.000608	0.00063
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010	<0.000010	<0.000010	<0.000020
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000020
Uranium, total (T-U)	mg/L	-	-	-	0.0246	0.0219	0.0226	0.0204
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.005	0.00866	0.00939	0.00882
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	<0.0030	<0.0030	<0.0030	<0.0060
Hexavalent Chromium, total	mg/L	0.0015	-	-	0.0008	***0.00221***	***0.00226***	***0.00248***
Dissolved Metals								
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000100	<0.0000150	<0.0000150	<0.0000150
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00094	0.00139	0.00168	0.00141
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.010	0.011	0.018	0.02
Lead, dissolved (D-Pb)	mg/L	-	-	-	<0.000050	<0.000050	0.000054	0.000187
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.00121	0.00121	0.00166	0.00137
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050	<0.00050	0.00067	<0.00100
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0473	0.036	0.0374	0.0389
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00499	0.0083	0.00931	0.00867
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0018	0.0011	0.0022	0.0021
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene	mg/L	0.006	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Acridine	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Anthracene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Fluorene	mg/L	0.012	-	-	<0.000010	<0.000010	<0.000010	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010	<0.000010	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Naphthalene	mg/L	0.001	-	-	<0.000050	<0.000050	<0.000050	<0.000050
Phenanthrene	mg/L	-	-	-	<0.000020	<0.000020	<0.000020	<0.000020
Pyrene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Quinoline	mg/L	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050
Volatile Organic Compounds (VOCs)								
Benzene	mg/L	0.11	-	-	-	-	-	<0.00050
Ethylbenzene	mg/L	0.25	-	-	-	-	-	<0.00050
Methyl-tert-butyl-ether	mg/L	5	0.44	-	-	-	-	<0.00050
Styrene	mg/L	-	-	-	-	-	-	<0.00050
Toluene	mg/L	0.215	-	-	-	-	-	<0.00040
Total Xylenes	mg/L	-	-	-	-	-	-	<0.00050
Chlorobenzene	mg/L	0.025	-	-	-	-	-	<0.00050
1,2-Dichlorobenzene	mg/L	0.042	-	-	-	-	-	<0.00050

Notes: Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of marine water aquatic life.
Shaded results exceed the applicable short-term water quality guideline for the protection of marine water aquatic life.
Results in orange text exceeded the PE-11578 East Sedimentation Pond Discharge Limit.
The East Sedimentation Pond discharged during the monitoring period (September 15 – 21) on September 17.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document.
[4] The working BC WQG for trivalent antimony [SB(III)] is 0.27 mg/L and is applied to total antimony results.
[5] When MeHg ≤0.5% of total Hg, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.

Table B-2: Summary of East Sedimentation Pond Water Quality Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1]		PE-111578 Discharge Limit	East Sedimentation Pond			
					In-Pond at Effluent Location	In-Pond at Effluent Location	In-Pond at Effluent Location	In-Pond at Effluent Location
					SP-E-NE	SP-E-NE	SP-E-NE	SP-E-NE
					VA24C6068-005	VA24C6388-003	VA24C6514-003	VA24C6578-001
		Long Term	Short Term		2024-10-01 15:30	2024-10-03 12:10	2024-10-04 17:28	2024-10-05 12:12
General Parameters								
pH - Field	pH units	- [2]	-	5.5 - 9.0	7.7	7.7	6.5	6.3
Conductivity - Field	µS/cm	-	-	-	1042	1312	1487	1424
Temperature - Field	°C	-	-	-	14.4	14.5	10.6	18.6
Salinity - Field	ppt	-	-	-	0.66	0.83	1	0.93
Turbidity - Field	NTU	-	-	-	2.97	1.65	2.68	4.56
TSS	mg/L	-	-	25	4.4	<3.0	<3.0	4.5
Dissolved Oxygen - Field	mg/L	>=8	-	-	9.35	10.93	9.19	9.47
Anions and Nutrients								
Sulphate	mg/L	-	-	-	61.5	82.1	611	660
Chloride	mg/L	-	-	-	29.3	26	23	24.7
Fluoride	mg/L	-	1.5	-	0.146	<0.200	<0.200	<0.200
Ammonia ($N\text{-}NH_3$)	mg/L	Variable [3]	Variable [3]	-	0.0957	0.0468	0.0793	0.161
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	0.556	0.522	0.51	0.765
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	***4.46***	***5.74***	***4.63***	***5.34***
Total Metals								
Aluminum, total (T-Al)	mg/L	-	-	-	0.596	0.105	0.618	0.828
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00434	0.00426	0.003	0.00302
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00356	0.00259	0.00208	0.0018
Barium, total (T-Ba)	mg/L	-	-	-	0.00506	0.00456	0.011	0.0138
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000100	<0.000100	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	-	-	0.035	0.032	0.038	0.056
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000300	<0.0000175	<0.0000150	<0.0000400
Chromium, total (T-Cr)	mg/L	-	-	-	0.00267	0.00175	0.00121	0.00156
Cobalt, total (T-Co)	mg/L	-	-	-	0.0006	0.00064	0.00075	0.00107
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00282	0.0014	0.0019	0.00352
Iron, total (T-Fe)	mg/L	-	-	-	0.225	0.129	0.204	0.339
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.000649	<0.000100	0.0007	0.00197
Manganese, total (T-Mn)	mg/L	-	-	-	0.00868	0.00198	0.0224	0.0511
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	<0.0000050	<0.0000050	0.0000059	0.0000082
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0676	0.0753	0.0526	0.0595
Nickel, total (T-Ni)	mg/L	0.0083	-	-	0.00053	<0.00100	<0.00100	0.00108
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000567	0.000532	0.000543	0.000428
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	0.000012	<0.000020	<0.000020	<0.000020
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000010	<0.000020	<0.000020	<0.000020
Uranium, total (T-U)	mg/L	-	-	-	0.0242	0.0218	0.0106	0.00995
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.00891	0.00712	0.00528	0.00668
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	0.0112	<0.0060	0.0144	0.0191
Hexavalent Chromium, total	mg/L	0.0015	-	-	***0.0019***	0.00148	<0.00050	0.00063
Dissolved Metals								
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000150	<0.0000175	<0.0000150	<0.0000350
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00138	0.00137	0.00158	0.00263
Iron, dissolved (D-Fe)	mg/L	-	-	-	0.016	0.038	0.024	0.025
Lead, dissolved (D-Pb)	mg/L	-	-	-	<0.000050	<0.000100	<0.000100	0.000153
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.00279	0.00179	0.0229	0.045
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050	<0.00100	<0.00100	<0.00100
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0449	0.0662	0.178	0.14
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00825	0.00684	0.00464	0.00547
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0039	0.0025	0.0091	0.0138
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene	mg/L	0.006	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Acridine	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Anthracene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Fluorene	mg/L	0.012	-	-	<0.000010	<0.000010	<0.000010	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010	<0.000010	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Naphthalene	mg/L	0.001	-	-	<0.000050	<0.000050	<0.000050	<0.000050
Phenanthrene	mg/L	-	-	-	<0.000020	<0.000020	<0.000020	<0.000020
Pyrene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Quinoline	mg/L	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050
Volatile Organic Compounds (VOCs)								
Benzene	mg/L	0.11	-	-	-	-	-	-
Ethylbenzene	mg/L	0.25	-	-	-	-	-	-
Methyl-tert-butyl-ether	mg/L	5	0.44	-	-	-	-	-
Styrene	mg/L	-	-	-	-	-	-	-
Toluene	mg/L	0.215	-	-	-	-	-	-
Total Xylenes	mg/L	-	-	-	-	-	-	-
Chlorobenzene	mg/L	0.025	-	-	-	-	-	-
1,2-Dichlorobenzene	mg/L	0.042	-	-	-	-	-	-

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-11578 East Sedimentation Pond Discharge Limit.
The East Sedimentation Pond discharged during the monitoring period (September 15 – 21) on September 17.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document.
[4] The working BC WQG for trivalent antimony [SB(III)] is 0.27 mg/L and is applied to total antimony results.
[5] When MeHg ≤0.5% of total Hg, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.

Table B-3: Summary of East Sedimentation Pond Water Quality Results for Methylmercury Received at the Time of Reporting.

Parameter	Unit	East Sedimentation Pond
		Effluent
		SP-E-OUT
		VA24C6068-004
		2024-10-01
Methylmercury	**µg/L**	0.000044

Table B-4: Summary of East Sedimentation Pond Water Quality Results for Dioxins and Furans Received at the Time of Reporting.

Parameter	Unit	East Sedimentation Pond			
		In-Pond at Effluent Location	In-Pond at Influent Location	Effluent	Effluent
		SP-E-NE	SP-E-NW	SP-E-OUT	SP-E-OUT
		L2757171-3	L2757171-4	L2757367-6	L2757448-1
		2024-08-26	2024-08-26	2024-09-08	2024-09-17
Lower Bound PCDD/F TEQ	**pg/L**	0.0833	0.124	1.14	0.0256
Upper Bound PCDD/F TEQ	**pg/L**	1.54	1.26	2.11	0.812

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: Summary of East Sedimentation Pond Daily Field Parameters September 29 – October 5.

Parameter		**Temperature**	**Dissolved Oxygen (DO)**	**Salinity**	**Turbidity**	**pH**	**Conductivity**	**Visibility of Sheen**	**Total Daily Discharge from the East Sedimentation Pond to Howe Sound**
Unit		**°C**	**mg/L**	**ppt**	**NTU**	**s.u.**	**µS/cm**		**m^3**
PE-111578 Discharge Limit		-	-	-	-	5.5 - 9.0	-	-	-[3]
Lowest Applicable Guideline [1]		-	>=8	-	-	-[2]	-	-	-
Station ID [4]	**Date**								
SP-E-NE	2024-09-28 10:50	15.7	***6.54***	0.56	1.51	6.9	926	No	0
SP-E-NE	2024-09-29 10:40	15.1	8.86	0.54	55.4	7.1	873	No	0
SP-E-NE	2024-09-30 15:33	14.8	8.13	0.6	2.9	6.5	967	No	0
SP-E-OUT	2024-10-01 11:46	14.0	8.71	0.65	1.44	7.4	1021	No	209
SP-E-NE	2024-10-01 15:30	14.4	9.35	0.66	3.0	7.7	1042	No	
SP-E-NE	2024-10-02 16:13	15.2	9.92	0.69	-[5]	7.3	1108	No	0
SP-E-NE	2024-10-03 12:10	14.5	10.93	0.83	1.65	7.7	1312	No	0
SP-E-NE	2024-10-04 17:28	10.6	9.19	1.00	2.68	6.5	1487	No	0
SP-E-NE	2024-10-05 12:12	18.6	9.47	0.93	4.56	6.3	1424	No	0

Notes:
Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of marine water aquatic life.
Shaded results exceed the applicable short-term water quality guideline for the protection of marine water aquatic life.
Results in orange text exceeded the PE-11578 East Sedimentation Pond Discharge Limit.
All SP-E-OUT samples collected from May 27 to the time of writing were taken from the sample port which is located near the inlet end of the temporary discharge hose.
The East Sedimentation Pond discharged during the monitoring period (September 29 – October 5) on October 1.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The annual average authorized discharge rate from the East Sedimentation Pond is 650 m^3/day. As noted in PE-111578 Condition 2.1.4, the actual discharge rate may deviate from the annual average rate due to annual variations in precipitation amounts within the catchment area. Therefore, the annual average authorized discharge rate is not evaluated as a discharge limit.
[4] The sedimentation pond did not receive non-contaminated contact water influent September 29 – October 5, therefore daily measurements for station SP-E-IN-2 were not collected. The East Sedimentation Pond discharged on October 1 and daily field measurements and an analytical sample were collected. The East Sedimentation Pond did not discharge September 29 – 30 and October 2 – 5, therefore daily measurements for station SP-E-OUT were not collected. In-Pond stations SP-E-NW and SP-E-NE may be monitored in place of stations SP-E-IN-2 and SP-E-OUT, respectively when there is no influent to, or discharge from the East Sedimentation Pond at the time of monitoring.
[5] Field measurement for turbidity at the in-pond station SP-E-NE on October 2 was not recorded.

Appendix C: East Wastewater Treatment Plant Results

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

Parameter	Unit	Operational Minimum Discharge Objective [1]	East WWTP					
			Influent	Effluent	Influent	Effluent	Influent	Effluent
			WWTP-E-IN	WWTP-E-OUT	WWTP-E-IN	WWTP-E-OUT	WWTP-E-IN	WWTP-E-OUT
			VA24C5904-004	VA24C5904-005	VA24C5907-001	VA24C5907-002	VA24C5952-001	VA24C5952-002
			2024-09-28 11:10	2024-09-28 10:30	2024-09-29 10:30	2024-09-29 11:06	2024-09-30 15:51	2024-09-30 16:10
General Parameters								
pH - Field	pH units	5.5 – 9.0	6.9	6.2	7.1	***9.8***	6.7	6.3
Conductivity - Field	µS/cm	-	1125	914	877	940	963	1143
Temperature - Field	℃	-	16	15.9	15.6	15.2	14.9	14.7
Salinity - Field	ppt	-	0.58	0.65	0.53	0.58	0.6	0.72
Turbidity - Field	NTU	-	1.99	0.55	6.27	1.44	2.97	1.24
TSS	mg/L	-	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Dissolved Oxygen - Field	mg/L	-	6.1	4.5	8.34	8.81	7.73	5.68
Anions and Nutrients								
Sulphate	mg/L	-	48.0	50.5	54.4	56.5	60.4	60.2
Chloride	mg/L	-	33.2	31.7	28	25.5	25.9	24.6
Fluoride	mg/L	-	0.12	0.122	0.118	0.117	0.124	0.108
Ammonia (N-NH_3)	mg/L	-	0.0067	0.0094	0.0635	0.108	0.148	0.147
Nitrite (N-NO_2)	mg/L	-	0.0253	0.0506	0.27	0.389	0.625	0.717
Nitrate (N-NO_3)	mg/L	-	0.346	0.474	2.23	3.29	4.86	6.27
Total Metals								
Aluminum, total (T-Al)	mg/L	-	0.0847	0.0906	0.104	0.124	0.281	0.174
Antimony, total (T-Sb)	mg/L	-	0.00376	0.00380	0.00408	0.00432	0.00454	0.00468
Arsenic, total (T-As)	mg/L	0.0125	0.00366	0.00404	0.00351	0.00361	0.00386	0.00373
Barium, total (T-Ba)	mg/L	-	0.00316	0.00301	0.00285	0.00222	0.00351	0.00292
Beryllium, total (T-Be)	mg/L	0.1	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	0.024	0.02	0.03	0.042	0.038	0.037
Cadmium, total (T-Cd)	mg/L	0.00012	<0.0000100	<0.0000150	<0.0000250	<0.0000100	<0.0000150	<0.0000150
Chromium, total (T-Cr)	mg/L	-	0.00107	0.00145	0.0022	0.00283	0.00299	0.00298
Cobalt, total (T-Co)	mg/L	-	<0.00010	<0.00010	0.00034	0.00043	0.00063	0.0007
Copper, total (T-Cu)	mg/L	0.0043	0.00178	0.00158	***0.0189***	0.00386	0.00224	0.00219
Iron, total (T-Fe)	mg/L	-	0.015	<0.010	0.017	0.015	0.105	0.038
Lead, total (T-Pb)	mg/L	0.0035	0.000223	0.000103	***0.00495***	0.000137	0.000477	0.000206
Manganese, total (T-Mn)	mg/L	-	0.00123	0.00031	0.00134	0.00046	0.00317	0.00071
Mercury, total (T-Hg)	mg/L	0.000016	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	0.0535	0.0589	0.0585	0.0706	0.0676	0.0691
Nickel, total (T-Ni)	mg/L	0.0083	<0.00050	<0.00050	0.00157	<0.00050	<0.00050	<0.00100
Selenium, total (T-Se)	mg/L		0.000393	0.000333	0.000489	0.000526	0.0006	0.000619
Silver, total (T-Ag)	mg/L	0.0015	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020
Thallium, total (T-Tl)	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020
Uranium, total (T-U)	mg/L	-	0.0247	0.0229	0.0225	0.021	0.0231	0.0218
Vanadium, total (T-V)	mg/L	0.0081	0.00512	0.0062	0.0080	***0.0103***	***0.0095***	***0.00988***
Zinc, total (T-Zn)	mg/L	0.0133	0.0079	0.0063	***0.208***	<0.0030	0.0045	***0.0231***
Hexavalent Chromium, total	mg/L	0.0015	0.00088	0.0013	***0.00202***	***0.00281***	***0.00249***	***0.00310***
Dissolved Metals								
Cadmium, dissolved (D-Cd)	mg/L	0.00012	<0.0000100	<0.0000100	<0.0000100	<0.0000100	<0.0000150	<0.0000150
Copper, dissolved (D-Cu)	mg/L	-	0.00212	0.00204	0.00173	0.00261	0.00259	0.00197
Iron, dissolved (D-Fe)	mg/L	-	<0.010	<0.010	0.011	0.016	0.017	0.022
Lead, dissolved (D-Pb)	mg/L	-	0.000272	0.000184	0.000136	0.00012	0.00024	0.000174
Manganese, dissolved (D-Mn)	mg/L	-	0.00113	0.00042	0.00118	0.00065	0.00149	0.00043
Nickel, dissolved (D-Ni)	mg/L	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00100
Strontium, dissolved (D-Sr)	mg/L	-	0.0475	0.0437	0.0367	0.0346	0.0375	0.043
Vanadium, dissolved (D-V)	mg/L	-	0.00528	0.00677	0.00820	0.00986	0.00927	0.00956
Zinc, dissolved (D-Zn)	mg/L	-	0.0104	0.0476	0.0024	0.0480	0.0066	0.0394
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene	mg/L	-	<0.000010	<0.000010	<0.000022	<0.000010	<0.000010	<0.000010
Acridine	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Anthracene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Fluoranthene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Fluorene	mg/L	0.012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
1-methylnaphthalene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	0.000016	<0.000010
2-methylnaphthalene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	0.000032	<0.000010
Naphthalene	mg/L	0.001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Phenanthrene	mg/L	-	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Pyrene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000012
Quinoline	mg/L	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Volatile Organic Compounds (VOCs)								
Benzene	mg/L	0.11	-	-	-	-	-	-
Ethylbenzene	mg/L	0.25	-	-	-	-	-	-
Methyl-tert-butyl-ether	mg/L	0.44	-	-	-	-	-	-
Styrene	mg/L	-	-	-	-	-	-	-
Toluene	mg/L	0.215	-	-	-	-	-	-
Total Xylenes	mg/L	-	-	-	-	-	-	-
Chlorobenzene	mg/L	-	-	-	-	-	-	-
1,2-Dichlorobenzene	mg/L	-	-	-	-	-	-	-

Notes:
[1] Operational minimum discharge objectives (MDOs) for WWTP effluent that are listed in Appendix B of the Construction Wastewater Treatment Plant Operations Environmental Protection Plan dated February 7, 2024.
Results ***underlined in bold italics*** exceed the applicable minimum discharge objective.

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

Parameter	Unit	Operational Minimum Discharge Objective [1]	East WWTP					
			Influent	Effluent	Influent	Effluent	Influent	Effluent
			WWTP-E-IN	WWTP-E-OUT	WWTP-E-IN	WWTP-E-OUT	WWTP-E-IN	WWTP-E-OUT
			VA24C6068-001	VA24C6068-003	VA24C6388-001	VA24C6388-002	VA24C6514-001	VA24C6514-002
			2024-10-01 12:15	2024-10-01 11:13	2024-10-03 11:45	2024-10-03 11:30	2024-10-04 17:26	2024-10-04 17:22
General Parameters								
pH - Field	pH units	5.5 – 9.0	7.4	6.6	7.7	7.2	6.5	5.7
Conductivity - Field	µS/cm	-	1020	1143	1350	1328	1567	1679
Temperature - Field	℃	-	13.9	14.2	15.3	14.5	13.2	12.9
Salinity - Field	ppt	-	0.65	0.73	0.84	0.84	1.04	1.13
Turbidity - Field	NTU	-	0.75	0.38	2.03	2.17	2.2	5.63
TSS	mg/L	-	10	<3.0	<3.0	<3.0	<3.0	<3.0
Dissolved Oxygen - Field	mg/L	-	7.51	7.00	9.22	7.76	8.29	7.42
Anions and Nutrients								
Sulphate	mg/L	-	62.7	65.8	81.5	126	660	852
Chloride	mg/L	-	27.9	25.0	26.3	25.6	24.3	23.3
Fluoride	mg/L	-	0.158	0.173	<0.200	0.172	<0.200	<0.200
Ammonia ($N\text{-}NH_3$)	mg/L	-	0.122	0.144	0.0453	0.0316	0.0822	0.158
Nitrite ($N\text{-}NO_2$)	mg/L	-	0.597	0.835	0.52	0.486	0.542	0.66
Nitrate ($N\text{-}NO_3$)	mg/L	-	4.62	6.49	5.79	5.46	4.85	4.44
Total Metals								
Aluminum, total (T-Al)	mg/L	-	0.598	0.262	0.103	0.0365	0.740	2.78
Antimony, total (T-Sb)	mg/L	-	0.00426	0.00465	0.00423	0.00408	0.00311	0.00265
Arsenic, total (T-As)	mg/L	0.0125	0.00369	0.00342	0.00271	0.00173	0.00200	0.00409
Barium, total (T-Ba)	mg/L	-	0.00636	0.00323	0.00463	0.00371	0.0124	0.0269
Beryllium, total (T-Be)	mg/L	0.1	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	0.034	0.038	0.031	0.038	0.041	0.042
Cadmium, total (T-Cd)	mg/L	0.00012	<0.0000250	<0.0000100	<0.0000175	<0.0000200	<0.0000175	0.0000435
Chromium, total (T-Cr)	mg/L	-	0.00272	0.00266	0.00173	0.00107	0.00126	0.00393
Cobalt, total (T-Co)	mg/L	-	0.0007	0.00075	0.00063	0.00059	0.00081	0.00105
Copper, total (T-Cu)	mg/L	0.0043	0.00324	***0.00645***	0.00231	0.00221	0.00306	***0.0137***
Iron, total (T-Fe)	mg/L	-	0.397	0.037	0.126	0.225	0.251	1.2
Lead, total (T-Pb)	mg/L	0.0035	0.00153	0.000353	0.000335	0.000208	0.00115	***0.00541***
Manganese, total (T-Mn)	mg/L	-	0.011	0.00066	0.00188	0.00204	0.0273	0.0938
Mercury, total (T-Hg)	mg/L	0.000016	0.0000051	<0.0000050	<0.0000050	<0.0000050	0.0000070	***0.0000195***
Molybdenum, total (T-Mo)	mg/L	-	0.067	0.0719	0.0744	0.0836	0.0553	0.0308
Nickel, total (T-Ni)	mg/L	0.0083	0.00064	<0.00100	<0.00100	<0.00100	<0.00100	0.00184
Selenium, total (T-Se)	mg/L		0.000533	0.000593	0.000555	0.000548	0.000671	0.000574
Silver, total (T-Ag)	mg/L	0.0015	<0.000010	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Thallium, total (T-Tl)	mg/L	-	<0.000010	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Uranium, total (T-U)	mg/L	-	0.0243	0.021	0.0215	0.0208	0.0112	0.0126
Vanadium, total (T-V)	mg/L	0.0081	***0.00894***	***0.0104***	0.00718	0.00468	0.00538	0.00576
Zinc, total (T-Zn)	mg/L	0.0133	0.0124	***0.115***	<0.0060	0.0085	***0.0206***	***0.247***
Hexavalent Chromium, total	mg/L	0.0015	***0.00233***	***0.00272***	0.00137	<0.00050	<0.00050	<0.00050
Dissolved Metals								
Cadmium, dissolved (D-Cd)	mg/L	0.00012	<0.0000150	<0.0000100	<0.0000175	<0.0000200	<0.0000150	0.0000257
Copper, dissolved (D-Cu)	mg/L	-	0.002	0.00261	0.00226	0.00193	0.0021	0.00447
Iron, dissolved (D-Fe)	mg/L	-	0.016	0.022	0.044	0.072	0.026	0.037
Lead, dissolved (D-Pb)	mg/L	-	0.000123	0.000158	0.000148	<0.000100	0.000152	0.000521
Manganese, dissolved (D-Mn)	mg/L	-	0.00254	0.00058	0.00176	0.00151	0.0283	0.097
Nickel, dissolved (D-Ni)	mg/L	-	<0.00050	<0.00100	<0.00100	<0.00100	<0.00100	0.00125
Strontium, dissolved (D-Sr)	mg/L	-	0.0424	0.0448	0.0663	0.0483	0.203	0.37
Vanadium, dissolved (D-V)	mg/L	-	0.00808	0.0102	0.00669	0.00411	0.00456	0.00269
Zinc, dissolved (D-Zn)	mg/L	-	0.0045	0.0368	0.0047	0.0193	0.0139	0.153
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Acridine	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Anthracene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Fluoranthene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Fluorene	mg/L	0.012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
1-methylnaphthalene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
2-methylnaphthalene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Naphthalene	mg/L	0.001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Phenanthrene	mg/L	-	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Pyrene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Quinoline	mg/L	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Volatile Organic Compounds (VOCs)								
Benzene	mg/L	0.11	<0.00050	<0.00050	-	-	-	-
Ethylbenzene	mg/L	0.25	<0.00050	<0.00050	-	-	-	-
Methyl-tert-butyl-ether	mg/L	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	-	<0.00050	<0.00050	-	-	-	-
1,2-Dichlorobenzene	mg/L	-	<0.00050	<0.00050	-	-	-	-

Notes:
[1] Operational minimum discharge objectives (MDOs) for WWTP effluent that are listed in Appendix B of the Construction Wastewater Treatment Plant Operations Environmental Protection Plan dated February 7, 2024.
Results ***underlined in bold italics*** exceed the applicable minimum discharge objective.

Table C-3: Summary of East Wastewater Treatment Plant Water Quality Results Received at the Time of Reporting.

Parameter	Unit	Operational Minimum Discharge Objective [1]	East WWTP	
			Influent	Effluent
			WWTP-E-IN	WWTP-E-OUT
			VA24C6578-002	VA24C6578-003
			2024-10-05 12:22	2024-10-05 12:42
General Parameters				
pH - Field	pH units	5.5 – 9.0	6.4	6.2
Conductivity - Field	µS/cm	-	1436	1418
Temperature - Field	℃	-	18.9	18.5
Salinity - Field	ppt	-	0.93	0.93
Turbidity - Field	NTU	-	5.75	8.62
TSS	mg/L	-	<3.0	<3.0
Dissolved Oxygen - Field	mg/L	-	9.46	9.26
Anions and Nutrients				
Sulphate	mg/L	-	649	579
Chloride	mg/L	-	24.5	23.4
Fluoride	mg/L	-	<0.200	<0.200
Ammonia ($N\text{-}NH_3$)	mg/L	-	0.163	0.194
Nitrite ($N\text{-}NO_2$)	mg/L	-	0.777	0.896
Nitrate ($N\text{-}NO_3$)	mg/L	-	5.34	5.70
Total Metals				
Aluminum, total (T-Al)	mg/L	-	0.737	0.209
Antimony, total (T-Sb)	mg/L	-	0.00298	0.00307
Arsenic, total (T-As)	mg/L	0.0125	0.00173	0.00139
Barium, total (T-Ba)	mg/L	-	0.0132	0.00876
Beryllium, total (T-Be)	mg/L	0.1	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	0.056	0.064
Cadmium, total (T-Cd)	mg/L	0.00012	<0.0000400	<0.0000150
Chromium, total (T-Cr)	mg/L	-	0.00145	<0.00100
Cobalt, total (T-Co)	mg/L	-	0.00103	0.00098
Copper, total (T-Cu)	mg/L	0.0043	0.00368	0.00225
Iron, total (T-Fe)	mg/L	-	0.276	0.053
Lead, total (T-Pb)	mg/L	0.0035	0.00157	0.000271
Manganese, total (T-Mn)	mg/L	-	0.0468	0.0236
Mercury, total (T-Hg)	mg/L	0.000016	0.0000072	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	0.0618	0.072
Nickel, total (T-Ni)	mg/L	0.0083	0.00109	<0.00100
Selenium, total (T-Se)	mg/L		0.000455	0.00054
Silver, total (T-Ag)	mg/L	0.0015	<0.000020	<0.000020
Thallium, total (T-Tl)	mg/L	-	<0.000020	<0.000020
Uranium, total (T-U)	mg/L	-	0.0103	0.0111
Vanadium, total (T-V)	mg/L	0.0081	0.00673	0.00704
Zinc, total (T-Zn)	mg/L	0.0133	***0.0214***	0.0115
Hexavalent Chromium, total	mg/L	0.0015	0.00062	0.00087
Dissolved Metals				
Cadmium, dissolved (D-Cd)	mg/L	0.00012	<0.0000300	<0.0000250
Copper, dissolved (D-Cu)	mg/L	-	0.00291	0.00273
Iron, dissolved (D-Fe)	mg/L	-	0.022	0.024
Lead, dissolved (D-Pb)	mg/L	-	0.000158	0.000133
Manganese, dissolved (D-Mn)	mg/L	-	0.0424	0.02
Nickel, dissolved (D-Ni)	mg/L	-	<0.00100	<0.00100
Strontium, dissolved (D-Sr)	mg/L	-	0.147	0.0908
Vanadium, dissolved (D-V)	mg/L	-	0.00546	0.00648
Zinc, dissolved (D-Zn)	mg/L	-	0.0177	0.0188
Polycyclic Aromatic Hydrocarbons (PAHs)				
Acenaphthene	mg/L	-	<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	-	<0.000010	<0.000010
2-methylnaphthalene	mg/L	-	<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
Volatile Organic Compounds (VOCs)				
Benzene	mg/L	0.11	-	-
Ethylbenzene	mg/L	0.25	-	-
Methyl-tert-butyl-ether	mg/L	0.44	-	-
Styrene	mg/L	-	-	-
Toluene	mg/L	0.215	-	-
Total Xylenes	mg/L	-	-	-
Chlorobenzene	mg/L	-	-	-
1,2-Dichlorobenzene	mg/L	-	-	-

Notes:

[1] Operational minimum discharge objectives (MDOs) for WWTP effluent that are listed in Appendix B of the Construction Wastewater Treatment Plant Operations Environmental Protection Plan dated February 7, 2024.

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

Table C-4: Summary of East Wastewater Treatment Plant Water Quality Results for Methylmercury Received at the Time of Reporting.

Parameter	Unit	East WWTP	
		Influent	Effluent
		WWTP-E-IN	WWTP-E-OUT
		VA24C6068-001	VA24C6068-003
		2024-10-01	2024-10-01
Methylmercury	**µg/L**	0.000050	0.000045

Table C-5: Summary of East Wastewater Treatment Plant Water Quality Results for Dioxins and Furans Received at the Time of Reporting.

Parameter	Unit	East WWTP			
		Influent	Effluent	Influent	Effluent
		WWTP-E-IN	WWTP-E-OUT	WWTP-E-IN	WWTP-E-OUT
		L2757171-1	L2757171-2	L2757231-2	L2757231-1
		2024-08-26	2024-08-26	2024-08-29	2024-08-29
Lower Bound PCDD/F TEQ	**pg/L**	0.0984	0.0644	0.00192	0.0452
Upper Bound PCDD/F TEQ	**pg/L**	1.41	1.23	1.14	1.05

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-6: Summary of East Wastewater Treatment Plant Water Quality Results for Dioxins and Furans Received at the Time of Reporting.

Parameter	Unit	East WWTP			
		Influent	Effluent	Influent	Effluent
		WWTP-E-IN	WWTP-E-OUT	WWTP-E-IN	WWTP-E-OUT
		L2757367-1	L2757367-2	L2757375-7	L2757375-6
		2024-09-08	2024-09-08	2024-09-11	2024-09-11
Lower Bound PCDD/F TEQ	**pg/L**	0.00318	0.00160	0.0167	0.0274
Upper Bound PCDD/F TEQ	**pg/L**	1.05	1.14	1.45	1.03

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-7: Summary of East Wastewater Treatment Plant Daily Field Parameters September 29 – October 5.

Parameter		**Temperature**	**Dissolved Oxygen (DO)**	**Salinity**	**Turbidity**	**pH**	**Conductivity**	**Visibility of Sheen**	**Total Daily Discharge from the East WWTP**
Unit		**°C**	**mg/L**	**ppt**	**NTU**	**s.u.**	**µS/cm**		**m^3**
PE-111578 Discharge Limit [1]		-	-	-	-	-	-	-	1,100
Minimum Discharge Objective [2]		-	-	-	-	5.5 – 9.0	-	-	-
Station ID	**Date**								
WWTP-E-IN	2024-09-29 10:30	15.6	8.34	0.53	6.27	7.1	877	No	-
WWTP-E-OUT	2024-09-29 11:06	15.2	8.81	0.58	1.44	***9.8***	940	No	558
WWTP-E-IN	2024-09-30 15:51	14.9	7.73	0.6	2.97	6.7	963	No	-
WWTP-E-OUT	2024-09-30 16:10	14.7	5.68	0.72	1.24	6.3	1143	No	490
WWTP-E-IN	2024-10-01 12:15	13.9	7.51	0.65	0.75	7.4	1020	No	-
WWTP-E-OUT	2024-10-01 11:13	14.2	7.00	0.73	0.38	6.6	1143	No	419
WWTP-E-IN	2024-10-02 16:28	15.3	10.05	0.69	-[3]	7.2	1117	No	-
WWTP-E-OUT	2024-10-02 16:28	14.6	9.09	0.71	-[3]	-[4]	1126	No	448
WWTP-E-IN	2024-10-03 11:45	15.3	9.22	0.84	2.03	7.7	1350	No	-
WWTP-E-OUT	2024-10-03 11:30	14.5	7.76	0.84	2.17	7.2	1328	No	344
WWTP-E-IN	2024-10-04 17:26	13.2	8.29	1.04	2.2	6.5	1567	No	-
WWTP-E-OUT	2024-10-04 17:22	12.9	7.42	1.13	5.63	5.7	1679	No	487
WWTP-E-IN	2024-10-05 12:22	18.9	9.46	0.93	5.75	6.4	1436	No	-
WWTP-E-OUT	2024-10-05 12:42	18.5	9.26	0.93	8.62	6.2	1418	No	394

Notes:
[1] PE-111578 East WWTP Discharge Limit is applied to effluent compliance station WWTP-E-OUT.
[2] Operational minimum discharge objectives (MDOs) for WWTP effluent that are listed in Appendix B of the Construction Wastewater Treatment Plant Operations Environmental Protection Plan dated February 7, 2024.
Results ***underlined in bold italics*** do not meet the applicable minimum discharge objective (except DO).
[3] Field measurements for turbidity at the influent and effluent stations on October 2 were not recorded.
[4] A suspected erroneous field pH measurement for WWTP-E-OUT on October 2 (pH 14.6) was removed from the table.

Appendix D: West Sedimentation Pond Results

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

Parameter	Unit	Lowest Applicable Guideline [1]		PE-111578 Discharge Limit	West Sedimentation Pond		
					In-Pond at Effluent Location	In-Pond at Effluent Location	In-Pond at Effluent Location
					SP-W-E	SP-W-E	SP-W-E
					VA24C5867-003	VA24C5904-003	VA24C6516-003
		Long Term	Short Term		2024-09-27 10:15	2024-9-28 12:00	2024-10-04 12:19
General Parameters							
pH - Field	pH units	- [2]	-	5.5 - 9.0	9.3	8.9	8.6
Conductivity - Field	µS/cm	-	-	-	1380	1354	1077
Temperature - Field	°C	-	-	-	15.6	15.3	13.1
Salinity - Field	ppt	-	-	-	0.85	0.84	0.70
Turbidity - Field	NTU	-	-	-	11.8	8.13	4.86
TSS	mg/L	-	-	25	<3.0	5.5	3.5
Dissolved Oxygen - Field	mg/L	>=8	-	-	***6.57***	***7.77***	10.67
Anions and Nutrients							
Sulphate	mg/L	-	-	-	38.6	38.5	31
Chloride	mg/L	-	-	-	120	117	91.3
Fluoride	mg/L	-	1.5	-	<0.200	<0.200	<0.100
Ammonia ($N\text{-}NH_3$)	mg/L	Variable [3]	Variable [3]	-	<0.0050	<0.0050	0.0056
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	<0.0100	<0.0100	<0.0050
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	<0.0500	<0.0500	<0.0250
Total Metals							
Aluminum, total (T-Al)	mg/L	-	-	-	0.322	0.467	0.349
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00176	0.00184	0.00137
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.0013	0.00154	0.0014
Barium, total (T-Ba)	mg/L	-	-	-	0.00736	0.00825	0.0056
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000100	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	-	-	0.012	<0.020	<0.020
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	0.0000259	0.0000425	0.0000263
Chromium, total (T-Cr)	mg/L	-	-	-	<0.00050	<0.00100	<0.00100
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00010	<0.00020	<0.00020
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00138	0.0019	0.00161
Iron, total (T-Fe)	mg/L	-	-	-	0.13	0.184	0.12
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.000484	0.000781	0.000493
Manganese, total (T-Mn)	mg/L	-	-	-	0.00479	0.00693	0.00383
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	<0.0000050	0.0000076	0.000006
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0192	0.0198	0.0147
Nickel, total (T-Ni)	mg/L	0.0083	-	-	0.00123	0.0015	<0.00100
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000126	<0.000100	0.000102
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010	<0.000020	<0.000020
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000010	<0.000020	<0.000020
Uranium, total (T-U)	mg/L	-	-	-	0.00858	0.00911	0.00740
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.00227	0.00257	0.00218
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	0.0070	0.0094	<0.0060
Hexavalent Chromium, total	mg/L	0.0015	-	-	<0.00050	<0.00126	<0.00050
Dissolved Metals							
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000150	0.0000127	<0.0000100
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00054	0.00072	0.00099
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.020	<0.020	<0.020
Lead, dissolved (D-Pb)	mg/L	-	-	-	<0.000100	<0.000100	<0.000100
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.00061	0.00052	0.00054
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00100	<0.00100	<0.00100
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0157	0.0152	0.0142
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00176	0.00202	0.00203
Zinc, dissolved (D-Zn)	mg/L	-	-	-	<0.0020	<0.0020	<0.0020
Polycyclic Aromatic Hydrocarbons (PAHs)							
Acenaphthene	mg/L	0.006	-	-	0.000029	0.000018	0.000017
Acridine	mg/L	-	-	-	<0.000010	<0.000010	<0.000010
Anthracene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.0000050	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	-	-	<0.000010	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	-	0.00001	<0.000010	<0.000010
Fluorene	mg/L	0.012	-	-	0.000032	0.000022	0.000021
1-methylnaphthalene	mg/L	0.001	-	-	0.000014	0.000011	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	0.000021	0.000016	0.000014
Naphthalene	mg/L	0.001	-	-	0.000065	<0.000050	<0.000050
Phenanthrene	mg/L	-	-	-	0.000041	0.000021	0.000025
Pyrene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010
Quinoline	mg/L	-	-	-	<0.000050	<0.000050	<0.000050
Volatile Organic Compounds (VOCs)							
Benzene	mg/L	0.11	-	-	-	-	-
Ethylbenzene	mg/L	0.25	-	-	-	-	-
Methyl-tert-butyl-ether	mg/L	5	0.44	-	-	-	-
Styrene	mg/L	-	-	-	-	-	-
Toluene	mg/L	0.215	-	-	-	-	-
Total Xylenes	mg/L	-	-	-	-	-	-
Chlorobenzene	mg/L	0.025	-	-	-	-	-
1,2-Dichlorobenzene	mg/L	0.042	-	-	-	-	-

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-11578 West Sedimentation Pond Discharge Limit.
The West Sedimentation Pond did not discharge during the monitoring period (September 29 – October 5).
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document.
[4] The working BC WQG for trivalent antimony [SB(III)] is 0.27 mg/L and is applied to total antimony results.
[5] When MeHg ≤0.5% of total Hg, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.

Table D-2: Summary of West Sedimentation Pond Water Quality Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1, 2]		PE-111578 Discharge Limit *	West Sedimentation Pond			
					Influent	Influent	Influent	Influent
					ESC-W-IN	ESC-W-IN	ESC-W-IN	ESC-W-IN
					VA24C5718-001	VA24C5867-001	VA24C5904-001	VA24C6516-001
		Long Term	Short Term		2024/09/26 12:45	2024/09/27 9:40	2024/09/28 12:15	2024/10/04 12:15
General Parameters								
pH - Field [6]	pH units	-	-	5.5 - 9.0	8.3	8.6	8.9	7.1
Conductivity - Field	µS/cm	-	-	-	1774	742	551	335
Temperature - Field	℃	-	-	-	16.1	15.1	14.8	13.1
Salinity - Field	ppt	-	-	-	1.1	0.45	0.34	0.23
Turbidity - Field	NTU	-	-	-	4.06	3.12	22.4	0.34
TSS	mg/L	-	-	25	8.6	<3.0	<3.0	<3.0
Dissolved Oxygen - Field	mg/L	>=8	-	-	***7.08***	***7.54***	***7.83***	10.81
Anions and Nutrients								
Sulphate	mg/L	-	-	-	57.9	29.1	25.2	23
Chloride	mg/L	-	-	-	160	65.3	46.8	29.7
Fluoride	mg/L	-	1.5	-	<0.200	<0.100	<0.100	0.098
Ammonia ($N\text{-}NH_3$) [3]	mg/L	Variable	Variable	-	<0.0050	<0.0050	<0.0050	0.0071
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	<0.0100	<0.0050	<0.0050	0.0103
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	<0.0500	<0.0250	<0.0250	0.0051
Total Metals								
Aluminum, total (T-Al)	mg/L	-	-	-	0.373	0.166	0.765	0.0974
Antimony, total (T-Sb) [4]	mg/L	-	0.27	-	0.00235	0.00271	0.00288	0.00311
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00178	0.00209	0.00233	0.00158
Barium, total (T-Ba)	mg/L	-	-	-	0.0148	0.0106	0.0149	0.00994
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000100	<0.000100	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	-	-	<0.020	<0.010	<0.010	<0.010
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	0.0000233	0.0000074	0.0000208	<0.0000100
Chromium, total (T-Cr)	mg/L	-	-	-	<0.00100	<0.00050	0.00083	<0.00050
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00020	<0.00010	0.00022	<0.00010
Copper, total (T-Cu) [6]	mg/L	-	-	0.0043	0.00805	0.00470	0.00471	0.00127
Iron, total (T-Fe)	mg/L	-	-	-	0.243	0.037	0.345	0.017
Lead, total (T-Pb) [6]	mg/L	-	-	0.0035	0.0037	0.000495	0.0021	0.000289
Manganese, total (T-Mn)	mg/L	-	-	-	0.00445	0.00151	0.0109	0.00063
Mercury, total (T-Hg) [5]	mg/L	0.000016	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0448	0.024	0.0214	0.0178
Nickel, total (T-Ni)	mg/L	0.0083	-	-	***0.0154***	0.00234	0.00234	0.00156
Selenium, total (T-Se)	mg/L	0.002	-	-	<0.000100	0.000146	0.000142	0.000151
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000020	<0.000010	<0.000010	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000020	<0.000010	<0.000010	<0.000010
Uranium, total (T-U)	mg/L	-	-	-	0.0227	0.013	0.0128	0.00903
Vanadium, total (T-V) [6]	mg/L	-	-	0.0081	0.00162	0.0009	0.00152	<0.00050
Zinc, total (T-Zn) [6]	mg/L	-	-	0.0133	0.0116	0.0041	0.0065	<0.0030
Hexavalent Chromium, total	mg/L	0.0015	-	-	<0.00050	0.00053	<0.00050	<0.00050
Dissolved Metals								
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	0.0000166	<0.0000100	0.0000068	<0.0000050
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00065	0.00087	0.00111	0.00061
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.020	<0.010	0.033	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	-	0.000248	0.000073	0.000199	0.000074
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.00079	0.0004	0.00171	0.00034
Nickel, dissolved (D-Ni)	mg/L	-	-	-	0.00221	0.0019	0.00167	0.00155
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0262	0.0594	0.0591	0.0761
Vanadium, dissolved (D-V)	mg/L	-	-	-	<0.00100	0.00065	0.00064	<0.00050
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0046	0.0015	0.0015	0.001
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene	mg/L	0.006	-	-	<0.000010	0.000025	<0.000010	<0.000010
Acridine	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Anthracene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	-	<0.000010	<0.000010	0.000012	<0.000010
Fluorene	mg/L	0.012	-	-	<0.000010	0.000011	<0.000010	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010	0.000037	<0.000010	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	0.000011	0.000063	<0.000010	<0.000010
Naphthalene	mg/L	0.001	-	-	<0.000050	0.000212	<0.000050	<0.000050
Phenanthrene	mg/L	-	-	-	<0.000020	<0.000020	<0.000020	<0.000020
Pyrene	mg/L	-	-	-	<0.000010	<0.000010	0.000012	<0.000010
Quinoline	mg/L	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050
Volatile Organic Compounds (VOCs)								
Benzene	mg/L	0.11	-	-				
Ethylbenzene	mg/L	0.25	-	-				
Methyl-tert-butyl-ether	mg/L	5	0.44	-				
Styrene	mg/L	-	-	-				
Toluene	mg/L	0.215	-	-				
Total Xylenes	mg/L	-	-	-				
Chlorobenzene	mg/L	0.025	-	-				
1,2-Dichlorobenzene	mg/L	0.042	-	-				

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-11578 West Sedimentation Pond Discharge Limit.
The West Sedimentation Pond did not discharge during the monitoring period (September 29 – October 5).
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document.
[4] The working BC WQG for trivalent antimony [SB(III)] is 0.27 mg/L and is applied to total antimony results.
[5] When MeHg ≤0.5% of total Hg, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.

Table D-3: Summary of West Sedimentation Pond Daily Field Parameters September 29 – October 5.

Parameter		Temperature	Dissolved Oxygen (DO)	Salinity	Turbidity	pH	Conductivity	Visibility of Sheen	Total Daily Discharge from the West Sedimentation Pond to Howe Sound
Unit		**°C**	**mg/L**	**ppt**	**NTU**	**s.u.**	**µS/cm**		**m^3**
PE-111578 Discharge Limit		-	-	-	-	5.5 - 9.0	-	-	-[3]
Lowest Applicable Guideline [1]		-	>=8	-	-	-[2]	-	-	-
Station ID [4]	**Date**								
-[5]	2024-09-29	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	0
-[5]	2024-09-30	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	0
-[5]	2024-10-01	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	0
-[5]	2024-10-02	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	0
-[5]	2024-10-03	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	0
ESC-W-IN	2024-10-04 12:15	13.1	10.81	0.23	0.34	7.1	335	No	0
SP-W-E	2024-10-04 12:19	13.1	10.67	0.70	4.86	8.6	1077	No	
ESC-W-IN	2024-10-05 13:51	12.9	10.09	0.11	3.65	7.7	182	No	0

Notes:
Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of marine water aquatic life.
Shaded results exceed the applicable short-term water quality guideline for the protection of marine water aquatic life.
Results in orange text exceeded the PE-11578 West Sedimentation Pond Discharge Limit.
The West Sedimentation Pond did not discharge during the monitoring period (September 29 – October 5).
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The annual average authorized discharge rate from the West Sedimentation Pond is 310 m^3/day. As noted in PE-111578 Condition 2.1.4, the actual discharge rate may deviate from the annual average rate due to annual variations in precipitation amounts within the catchment area. Therefore, the annual average authorized discharge rate is not evaluated as a discharge limit.
[4] In-pond monitoring stations have been established for the West Sedimentation Pond at locations SP-W-W and SP-W-E and are used for pond water quality monitoring. ESC-W-IN is the influent station located at the TSS settling system used for the pond.
[5] The pond was not commissioned for discharge during the reporting period, therefore daily monitoring of field parameters was not conducted

Appendix E: West Wastewater Treatment Plant Results

Table E-1: Summary of West Wastewater Treatment Plant Water Quality Results for Dioxins and Furans Received at the Time of Reporting.

Parameter	Unit	West WWTP					
		Influent	Effluent	Influent	Effluent	Influent	Effluent
		WWTP-W-IN	WWTP-W-OUT	WWTP-W-IN	WWTP-W-OUT	WWTP-W-IN	WWTP-W-OUT
		L2757230-2	L2757230-1	L2757228-2	L2757228-1	L2757254-2	L2757254-1
		2024-08-28	2024-08-28	2024-08-29	2024-08-29	2024-09-02	2024-09-02
Lower Bound PCDD/F TEQ	**pg/L**	0.491	0.00221	0.062	0.0536	0.0791	0.0120
Upper Bound PCDD/F TEQ	**pg/L**	1.17	1.08	1.40	1.07	1.23	0.884

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 E-2: Summary of West Wastewater Treatment Plant Water Quality Results for Dioxins and Furans Received at the Time of Reporting.

Parameter	Unit	West WWTP					
		Influent	Effluent	Influent	Effluent	Influent	Effluent
		WWTP-W-IN	WWTP-W-OUT	WWTP-W-IN	WWTP-W-OUT	WWTP-W-IN	WWTP-W-OUT
		L2757265-1	L2757265-2	L2757375-2	L2757375-1	L2757413-1	L2757413-2
		2024-09-04	2024-09-04	2024-09-11	2024-09-11	2024-09-13	2024-09-13
Lower Bound PCDD/F TEQ	**pg/L**	0.00303	0	0.111	0.00113	0.437	0.00417
Upper Bound PCDD/F TEQ	**pg/L**	0.949	1.19	1.44	0.746	1.61	1.11

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 Methylmercury Received at the Time of Reporting.

Parameter	Unit	Station SW-03
		Mill Creek Estuary
		SW-03
		VA24C2397-001
		2024-08-28
Methylmercury	**µg/L**	0.000030

Appendix G: Freshwater Receiving Environment Results

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

Parameter	Unit	Station SW-01	Station SW-02	Station SW-07	Station SW-04
		Lower Reach of Woodfibre Creek (near the mouth)	Upper Reach of Mill Creek (upstream of the third bridge)	Upstream Mill Creek (at the diversion inlet)	Lower Reach of East Creek (near the outlet to the outfall culvert)
		SW-01	SW-02	SW-07	SW-04
		L2757209-1	L2757209-2	L2757209-4	L2757209-3
		2024-08-27	2024-08-27	2024-08-27	2024-08-27
Lower Bound PCDD/F TEQ	**pg/L**	0.00924	0.00239	0.00253	0.00435
Upper Bound PCDD/F TEQ	**pg/L**	1.38	1.16	1.32	1.22

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 H: Marine Water Receiving Environment Results

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

Parameter	Unit	Lowest Applicable Guideline [1]		Station IDZ-E1			Station IDZ-E2		
				0.5 m Below Surface	2 m Below Surface	2 m Above Seafloor	0.5 m Below Surface	2 m Below Surface	2 m Above Seafloor
				IDZ-E1-0.5	IDZ-E1-2m	IDZ-E1-SF	IDZ-E2-0.5	IDZ-E2-2m	IDZ-E2-SF
				VA24C5429-001	VA24C5429-002	VA24C5429-003	VA24C5429-004	VA24C5429-005	VA24C5429-006
		Long Term	Short Term	2024-09-24 9:52	2024-09-24 9:54	2024-09-24 9:57	2024-09-24 9:40	2024-09-24 9:45	2024-09-24 9:47
General Parameters									
pH - Field	pH units	7.0 - 8.7	-	7.9	7.8	7.5	7.9	7.8	7.5
Specific Conductivity - Field	µS/cm	-	-	15576	32078	32232	26524	32453	32244
Temperature - Field	℃	-	-	13.5	13.3	10.9	13.7	13.1	10.9
Salinity - Field	ppt	Narrative[2]	-	11.96	26.49	28.36	21.23	26.94	28.35
Turbidity - Field	NTU	Narrative[2]	Narrative[2]	5.27	1.88	1.88	3.91	1.43	1.92
TSS	mg/L	Narrative[2]	Narrative[2]	10.3	6.3	<3.0	8.9	5.1	7.9
Dissolved Oxygen - Field	mg/L	>=8	-	10.12	8.42	***5.63***	9.44	8.36	***5.62***

Notes:
Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of marine water aquatic life.
Shaded results exceed the applicable short-term water quality guideline for the protection of marine water aquatic life.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] Narrative guideline for the evaluation of change from background conditions arising from discharges to the aquatic environment. The water quality data presented in the table were collected when the site was not discharging, therefore the guidelines were not evaluated.

Table H-2: Summary of Marine Water Quality Results for Methylmercury Received at the Time of Reporting.

Parameter	Unit	Station IDZ-E1			Station IDZ-E2		
		0.5 m Below Surface	2 m Below Surface	2 m Above Seafloor	0.5 m Below Surface	2 m Below Surface	2 m Above Seafloor
		IDZ-E1-0.5	IDZ-E1-2m	IDZ-E1-SF	IDZ-E2-0.5	IDZ-E2-2m	IDZ-E2-SF
		VA24C1684-001	VA24C1684-002	VA24C1684-003	VA24C1684-004	VA24C1684-005	VA24C1684-006
		2024-08-23	2024-08-23	2024-08-23	2024-08-23	2024-08-23	2024-08-23
Methylmercury	**µg/L**	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020