TECHNICAL MEMORANDUM

To:	**Ashleigh Crompton, Mike Champion, Jackie Boruch, Ryan Schucroft (Woodfibre LNG)**	**Date:**	**22 March 2024**
From:	**Patrick Mueller and Holly Pelletier (Lorax)**	**Project #:**	**A633-7**
Subject:	**PE-111578 Weekly Discharge and Compliance Report #5, March 10 – 16**		

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 permit specifies monitoring and reporting requirements that are required to be met by Woodfibre LNG during construction of the LNG Export Facility. Reporting is required on a weekly basis.

This technical memorandum (Report #5) summarizes the results of PE-111578 discharge and compliance monitoring conducted March 10 – 16, and is intended to meet the reporting requirements specified in Condition 4.2 of WDA Effluent Permit PE-111578. This technical memorandum report has been prepared to meet the requirements specified in Condition 4.2 of PE-111578 which is reproduced below. Figures referenced in the discussion are included at the end of this report.

> "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."

1. Current Conditions

The Construction Phase of the Woodfibre LNG Export Facility commenced in October 2023. Early stage civil works have been commenced including site grading, levelling, and sedimentation pond berm construction. In December, in-marine works were initiated in the foreshore and shoreline areas of the Project and in early 2024 construction of water management infrastructure was initiated and continued through the March 10 – 16 monitoring period. The water management

facilities that were completed or under construction during the reporting period are shown in Figure 1.

During the reporting period (March 10 – 16) assembly of the East Wastewater Treatment Plant (EWWTP) continued and amphibian exclusion fencing was installed around the perimeter of the East Sedimentation Pond. Initial placement of the EWWTP components is shown in Figure 2. No discharges of contact water to the environment were reported in association with these activities. Commissioning of the EWWTP was scheduled to begin on March 21. Following commissioning, construction of the remaining East Catchment water management infrastructure will commence (*i.e.*, conveyance ditches, outfall structures).

Construction of the West Sedimentation Pond continued during the reporting period (March 10 – 16) with site leveling and subgrade preparation activities (Figure 3) and is scheduled to be completed early April. The construction of a non-contact water diversion ditch continued along the ditch lines shown in Figure 1. Water that accumulates in these ditches is contained and managed on-site as non-contaminated contact water. Site reports indicate there were no contact water discharges to the environment during the reporting period.

2. Monitoring Summary

The authorized works were under construction during the March 10 – 16 monitoring period. Compliance monitoring stations will be progressively established as water management infrastructure is completed. The receiving environment stations for creek water and Howe Sound reference locations have been established (Figure 1). Monthly monitoring of PE-111578 receiving environment stations will be conducted by Roe Environmental before the end of March.

3. Water Quality Results

Field measurements and analytical samples for the PE-111578 monitoring stations were not collected during the March 10 – 16 monitoring period. Dioxin and furan analytical results for receiving environment samples collected by Keystone Environmental from February 13 to 15 and described in Weekly Report #2 were available at the time of reporting. The Keystone program is for background stations of freshwater and marine water, and the samples that overlap with the PE-111578 monitoring requirements are listed below in Table 1. Laboratory testing was conducted by ALS Environmental.

Table 1: Summary of Analytical Results Included in Weekly Discharge and Compliance Report #5.

Sample	Description	Sampling Date	Parameters
SW-01	Woodfibre Creek	February 15, 2024	Dioxins and Furans
SW-02	Mill Creek Estuary		
SW-03	Mill Creek Upstream		
SW-07	Mill Creek Background		
SW-04	East Creek		
WQR1-1	Reference Station 1 – deep water (2m above seafloor)	February 13, 2024	
WQR1-2	Reference Station 1 – surface water (2m below surface)		
WQR1-3	Reference Station 1 – surface water (0.5m below surface)		
WQR2-1	Reference Station 2 – deep water (2m above seafloor)	February 14, 2024	
WQR2-2	Reference Station 2 – surface water (2m below surface)		
WQR2-3	Reference Station 2 – surface water (0.5m below surface)		

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

3.1 Freshwater and Estuarine Water Receiving Environment

The analytical results for total dioxins and furans for Woodfibre Creek (Station SW-01), Mill Creek (Stations SW-02, SW-03, and SW-07) and East Creek (Station SW-04) are summarized in Table 2.

The lower bound polychlorinated dibenzodioxins/dibenzofurans (PCDD/F; dioxins and furans) toxic equivalency (TEQ) ranged from 0.00170 to 0.0127 pg/L in freshwater samples from Woodfibre Creek (SW-01), Mill Creek (SW-02 and SW-07), and East Creek (SW-04). The lower bound PCDD/F TEQ in the lower reach of Mill Creek (SW-03) was 0.410 pg/L. The reported concentrations of dioxin and furan compounds are within the range observed in the pre-construction water quality monitoring program at the freshwater and estuarine water stations.

Table 2: Summary of Freshwater and Estuarine Water Quality Results for Dioxins and Furans

Parameter	Unit	SW-01	SW-02	SW-03	SW-07	SW-04
		Woodfibre Creek - Lower Reach	Mill Creek - Mid Reach	Mill Creek - Estuary	Mill Creek - Upstream at Diversion Inlet	East Creek - Lower Reach
Sampling Date		**2024-02-15**	**2024-02-15**	**2024-02-15**	**2024-02-15**	**2024-02-15**
Lower Bound PCDD/F TEQ	pg/L	0.00170	0.00817	0.410	0.0127	0.0119

Notes:
PCDD = polychlorinated dibenzodioxins (dioxins)
PCDF = polychlorinated dibenzofurans (furans)
TEQ = toxic equivalency
Lower bound PCDD/F TEQ is calculated by assigning any non-detectable compound a value of zero (0).

3.2 Marine Water Receiving Environment

The analytical results for dioxins and furans for two marine reference sites located approximately 500 m northeast (WQR1) and south (WQR2) of the Certified Project Area (CPA) are summarized in Table 3. Samples were collected at each station from the water column 0.5 and 2 m below the water surface and 2 m above the seafloor.

The lower bound PCDD/F TEQ ranged from 0.000435 to 0.0175 pg/L at reference station WQR1 and from 0.00484 to 0.177 pg/L at reference station WQR2. The reported concentrations of dioxin and furan compounds are within the range observed in the pre-construction water quality monitoring program at the marine water reference stations.

Table 3: Summary of Marine Water Quality Results for Dioxins and Furans

Parameter	Unit	WQR1			WQR2		
		2.0 m above seafloor	2.0 m below water surface	0.5 m below water surface	2.0 m above seafloor	2.0 m below water surface	0.5 m below water surface
Sampling Date		**2024-02-13**	**2024-02-13**	**2024-02-13**	**2024-02-14**	**2024-02-14**	**2024-02-14**
Lower Bound PCDD/F TEQ	pg/L	0.0175	0.000435	0.00556	0.177	0.00484	0.00980

Notes:
PCDD = polychlorinated dibenzodioxins (dioxins)
PCDF = polychlorinated dibenzofurans (furans)
TEQ = toxic equivalency
Lower bound PCDD/F TEQ is calculated by assigning any non-detectable compound a value of zero (0).

4. 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 project staff responsible for environmental management. The records reviewed and analyzed by Lorax include ALS Environmental laboratory test reports, and field reports from Roe Environmental, LB LNG and Keystone Environmental. Verbal or electronic communications between Lorax, Woodfibre LNG and other project staff are conducted as needed to confirm the information presented in this report.

Regards,

LORAX ENVIRONMENTAL SERVICES LTD.

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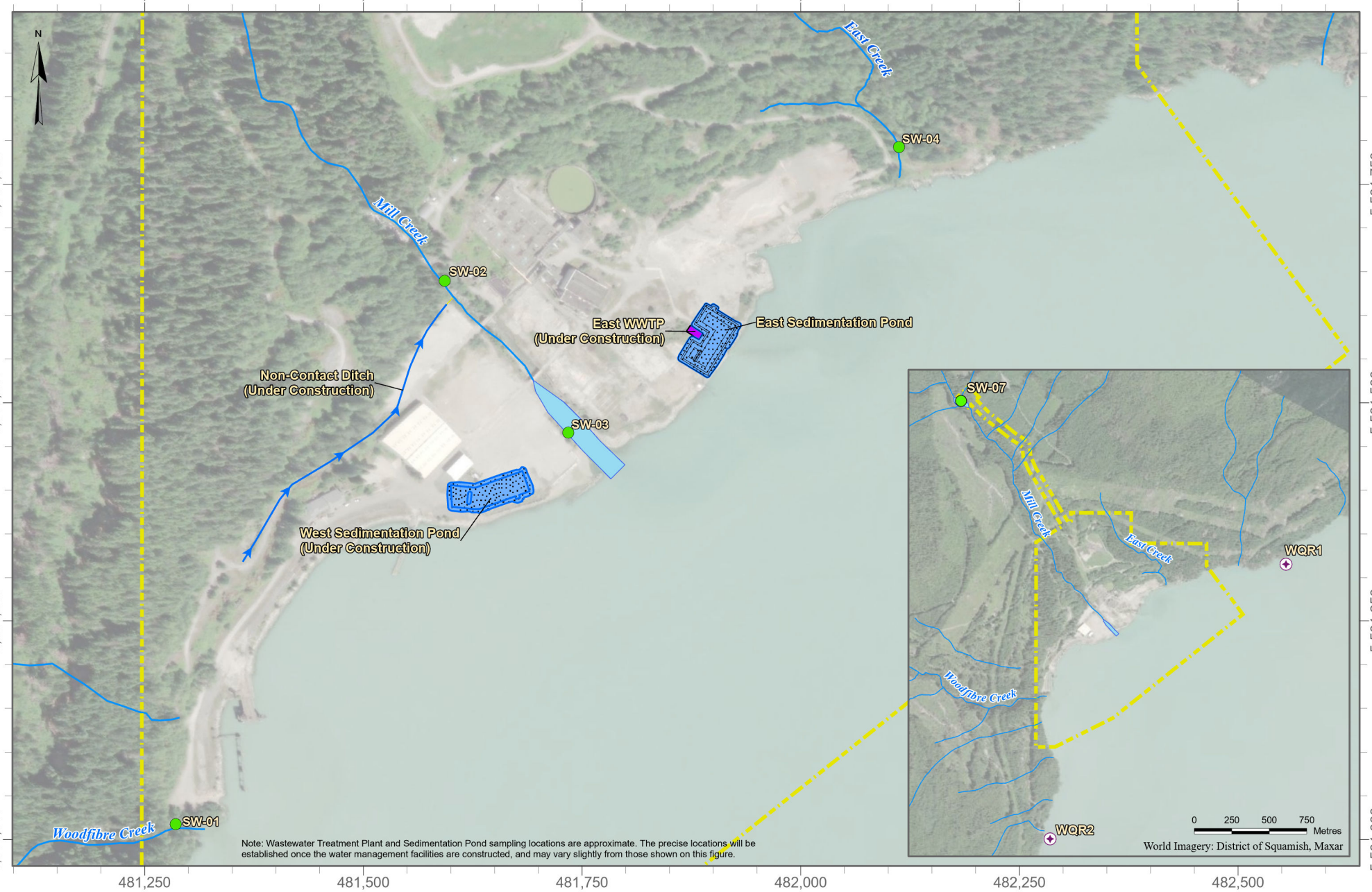

Note: Wastewater Treatment Plant and Sedimentation Pond sampling locations are approximate. The precise locations will be established once the water management facilities are constructed, and may vary slightly from those shown on this figure.

LEGEND

- Freshwater Monitoring Station
- Marine Water Monitoring Station
- Certified Project Area
- Waterbody
- Watercourse
- Diversion Ditch
- Sediment Pond
- WWTP

DATE SAVED:	Mar 22, 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 (March 16, 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

Figure 2. Viewing several tanks in the East Wastewater Treatment Plant (EWWTP) assembly staging area (12-Mar-2024).

Figure 3: West Sedimentation Pond site levelling and sub-grade preparation (14- Mar- 2024).