

Technical Memorandum



To: Frank Winslow, LHG

From: Scott Miller, P.E.

Company: WA Dept of Ecology

SLR International Corporation

cc: Tom Graham, JELD-WEN, Inc.

Date: July 17, 2025

Project No. 108.020778.00001

**RE: Updated Conceptual Site Model – Upland Soils/Site Definition
Jeld Wen Site, Everett, WA (CSID:4402), Facility Site ID: 2757**

This memorandum has been prepared to present an updated conceptual site model (CSM) for upland soils for the Jeld Wen Site located in Everett, Washington. This updated CSM is designed to supplement and clarify the CSM presented in the August 2023 Cleanup Action Plan (CAP) and was developed based upon the findings of the Pre-Remedial Design Investigation (PRDI) and associated data gap evaluations.

Project Background

Upon completion of the PRDI activities, Ecology requested additional sampling at the northeast and southwest shorelines of the peninsula to further characterize polychlorinated dibenzo-p-dioxins and dibenzofurans (hereafter referred to as 'dioxins') in shallow soil which had the potential to erode and affect the integrity of the sediment remedy via recontamination¹. In April of 2025, shallow soil sampling performed on the northeast and southwest shorelines revealed dioxins concentrations in some locations surpassing site cleanup levels, which are based on natural background concentrations².

Site Background and Site Development

For this paragraph the term "site" refers to the peninsula of constructed land located west of Marine View Drive with tidal mudflats north and south of the peninsula and the confluence of the Snohomish River and Port Gardner Bay to the west.

The upland area is built upon fill material placed in various stages beginning in the late 1800s (see Figure 1). Areas on the eastern, northern, and southern sides of the site were filled in various stages beginning in the late 1800s or early 1900s when the adjacent BNSF's predecessor, formerly Great Northern Railroad, was laying tracks along Port Gardner Bay.

Historical activities have included casket manufacturing, pole treating, wood door and sash manufacturing, and fish net storage. The area known as the Knoll Fill Area was initially filled in the early to mid-1960s.

As presented in the CAP, prior to JELD-WEN's ownership, the Site had been in use as a stile and rail door plant since the mid-1940s by Nord Door. Prior to the 1940s, National Pole Company operated a pole treating plant on the eastern portion of the Site. Sound Casket Manufacturing operated a wood casket factory on the southern portion of the Site from at least 1936 until sometime prior to 1947, at which time the casket facility was operated by Northwestern Lumber & Manufacturing Co., Inc.

¹ Washington Department of Ecology (Ecology) letter to JELD-WEN, Inc. Re: Request for Soil Sampling. March 11, 2025

² Ecology. Technical Memorandum #8: Natural Background for Dioxins/Furans in WA Soils. August 9, 2010.

By 1976 some of the structures associated with the former wood casket plant had been incorporated into the Nord Door facility. A rectangular fish net storage building and several smaller structures were present on the far southern portion of the Site (current Knoll Area), south of the casket facility, from at least 1947 through 1955. The structures were no longer present in 1967, by which time the area had been further filled creating the “knoll” feature.

JELD-WEN acquired certain assets, including the real property of the Nord Door plant, in May 1986 through the E.A. Nord bankruptcy proceeding. Continued operations associated with the Nord Door plant by JELD-WEN included buying rough green wood, sorting, stacking, drying, planing, and cutting the lumber. The finished wooden doors, rails, posts, columns, and spindles were assembled on-site. JELD-WEN ceased operations at the Nord Door plant in 2005, excepted for the asphalt batch plant discussed below, and the property remained unused from mill closure at the end of 2005 until property sale to Ronald Woolworth/W&W Everett Investments in 2012. The main manufacturing building has remained primarily unused since the end of 2005 and portions of the building have deteriorated notably.

Various asphalt companies (Heidelberg Materials [current], Cadman, CEMEX, Rinkers Materials and Sterling Asphalt) have leased and operated the northwest portion of the upland property as an asphalt batch plant since the mid-1990s.

Two upland areas are discussed in the CAP for active cleanup measures: the Creosote/Fuel Oil Area and the Woodlife Area.

The Creosote/Fuel Oil Area is the location where National Pole Company operated a pole treating plant adjacent to the current location of West Marine View Drive former oil ASTs used for oil-fired boilers (fuel oil). Activities included two circular creosote ASTs of unknown capacity, three long rectangular ASTs possibly containing creosote, a rack for drying and storing treated poles, an oil house, and a rectangular building used as a combination lunchroom, engine room and machine shop. The creosote ASTs, drying racks, and oil house were removed between 1943 and 1948. Pole treating operations are not observed in aerial photographs or site maps after 1948. Mudflats east adjacent to the pole treating operations and underneath the suspected elevated roadway appear to have been filled between 1938 and 1947. Based on a review of aerial photographs and historical documents of the area, it is likely that West Marine View Drive was elevated on pilings during the National Pole operations. The former boiler fuel oil ASTs were located along West Marine View Drive, beneath what is now the southern portion of the main manufacturing building. These ASTs were removed in the mid-to late-1950s.

The Woodlife Area is the location where the former E.A. Nord facility (aka Nord Door) used Woodlife that contained pentachlorophenol (PCP). Dioxin contamination is found in PCP mixtures. Woodlife Area impacts are attributed to an approximately 10,000-gallon AST storage tank containing Woodlife wood treatment solution (which contained PCP) that was formerly located northeast of the main manufacturing building, the dip tank inside the main manufacturing building, and underground piping connecting the dip tank to the storage tank. The use of the Woodlife AST was discontinued prior to JELD-WEN's purchase of the Site in 1986, and the AST was removed in 1991.

Definition of Site

In June 2025, Ecology sent a letter³ to JELD-WEN regarding the definition of the Site, in accordance with Model Toxics Control Act (MTCA), that stated “Ecology must conclude that the

³ Ecology letter to JELD-WEN, Re. Definition of the Jeld Wen Site and Site Boundaries. June 12, 2025.



Jeld Wen Site boundary includes the entire peninsula.” The letter also stated that “a disproportionate cost analysis (DCA) may be needed prior to selecting the appropriate alternative for the [dioxins] in shallow soils.”

In response to the letter from Ecology, this memo presents an updated CSM incorporating these new developments, an understanding of the setting and cleanup project objectives, and presents the case that a supplemental DCA is not warranted as existing controls presented in the CAP are appropriately protective with the clarification regarding the definition/extent of the Site.

Conceptual Site Model

Physical Setting

As described in the sections above, the Site is built upon fill material placed in various stages beginning in the late 1800s. Areas on the eastern, northern, and southern sides of the Site were filled in various stages beginning in the late 1800s or early 1900s when the adjacent BNSF railroad, formerly Great Northern Railroad, was laying tracks along Port Gardner Bay. Fill has been used to grade and expand the former mill site since its inception in 1938. Mudflats east adjacent to pole-treating operations and underneath the roadway appear to have been filled between 1938 and 1947. The fill material placed between 1955 and 1967 appears to be dredged sediments from the surrounding bay; however, there is no official record of the source material. Significant expansions occurred in 1974 and 1978 until the peninsula was built to its current configuration by 1984 (see Figure 1).

Nature and Extent of Contamination

While Remedial Investigation (RI) work was focused around the two primary contaminant source areas, the Woodlife Area and the Creosote/Fuel Oil Area, soil samples were collected at discrete locations throughout the peninsula. As presented in the RI/FS Report⁴, other isolated areas of impact above initial Preliminary Cleanup Levels (PCLs) were identified in upland soil and groundwater but were not subsequently carried through to the Feasibility Study (FS) due to the findings of additional assessment activities. This included analysis for dioxins, which were detected at relatively low concentrations in comparison to the Woodlife Area, and not at any type of scale at which remedial action would be warranted (see Figure 2).

Results of the shoreline sampling revealed exceedances of the cleanup level (CUL), based on natural background concentration, in five of the nine locations (see Figure 3). Samples were taken at various depth intervals from surface to 5 feet below ground surface (bgs). Analytical results do not suggest a distinct spatial or temporal trend and support the heterogeneous nature of the upland filled soils. Concentrations of dioxins were measured up to 177 picograms per gram (pg/g) in the shoreline sampling event, which is greater than what was detected in the isolated RI locations, but below hot spot concentrations observed in the Woodlife Area.

Contaminant Fate & Transport

As stated above, Ecology’s initial concern regarding shoreline soils was to protect the marine remedy in the case of recontamination due to future shoreline erosion. Additional complete exposure pathways include direct contact with future construction/excavation workers.

⁴ SLR International Corp. (SLR) and Anchor QEA, LLC (Anchor). Final Remedial Investigation/Feasibility Study, Jeld Wen / Former Nord Door Facility. December 2021.



Ecology presented the following applicable criteria for general upland soils⁵ (i.e., outside of the known dioxins-impacted Woodlife Area):

- Method B – Direct Contact (Cancer) – 13.0 ng/kg (pg/g)
- Method C – Direct Contact (Cancer) – 1,700 ng/kg (pg/g)
- Method B – Soil-protective-of-groundwater-protective-of-surface-water (marine) – 0.025 ng/kg (pg/g). The PQL (5 ng/kg) would supersede.
- Sediment CUL – (soil-to-sediment pathway) – 5 ng/kg (based on PQL), human health.

Ecology has suggested that a sediment remedy should include a cleanup level of 5.2 ng/kg, equivalent to the natural background, as discussed in the CAP.

Capping of dioxins-contaminated soils above Method B criteria is a measure that has been employed at other Ecology cleanup sites adjacent to surface waters.⁶

Conclusion

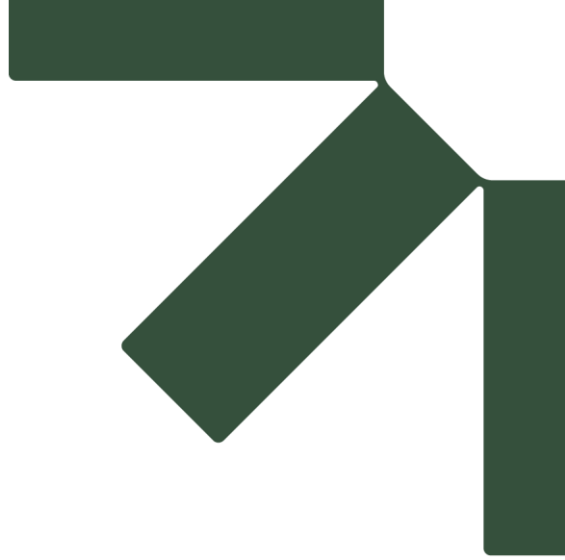
The selected upland remedies in the CAP include soil removal and disposal for the Woodlife Area, and hot spot soil removal and bioremediation for the Creosote/Fuel Oil Area, and engineering controls and institutional controls that were developed with the intent that the entirety of the peninsula would come under the effect of such controls. These institutional controls and engineering controls are needed for the identified isolated areas with the presence of dioxins measured in the upland filled soils. Controls would include an environmental covenant placing restrictions on soil disturbance without appropriate notifications to Ecology, and implementation of institutional controls (i.e., soil management plan), as well as engineering controls including an appropriate barrier to prevent direct contact such as paving, and protection of the sediment remedy via shoreline armoring. The recent declaration by Ecology amending the “Site” definition to include the entirety of the peninsula further supports the concept that all upland soils shall be enlisted in the controls identified in the CAP for the remedies; however, the intent of the design of the remedies in the CAP were already appropriately protective of direct exposure throughout the property boundary.

This updated CSM supplements the CSM presented in the CAP and considered findings of the PRDI and recent sampling, clarifies the extent of the proposed engineering controls and institutional controls to cover the Site (aka entire land peninsula), and demonstrates that the proposed actions are protective under MTCA.

⁵ Email from Frank Winslow, Ecology, Subject: Cleanup Levels for 2,3,7,8-TCDD from CLARC. June 5, 2025.

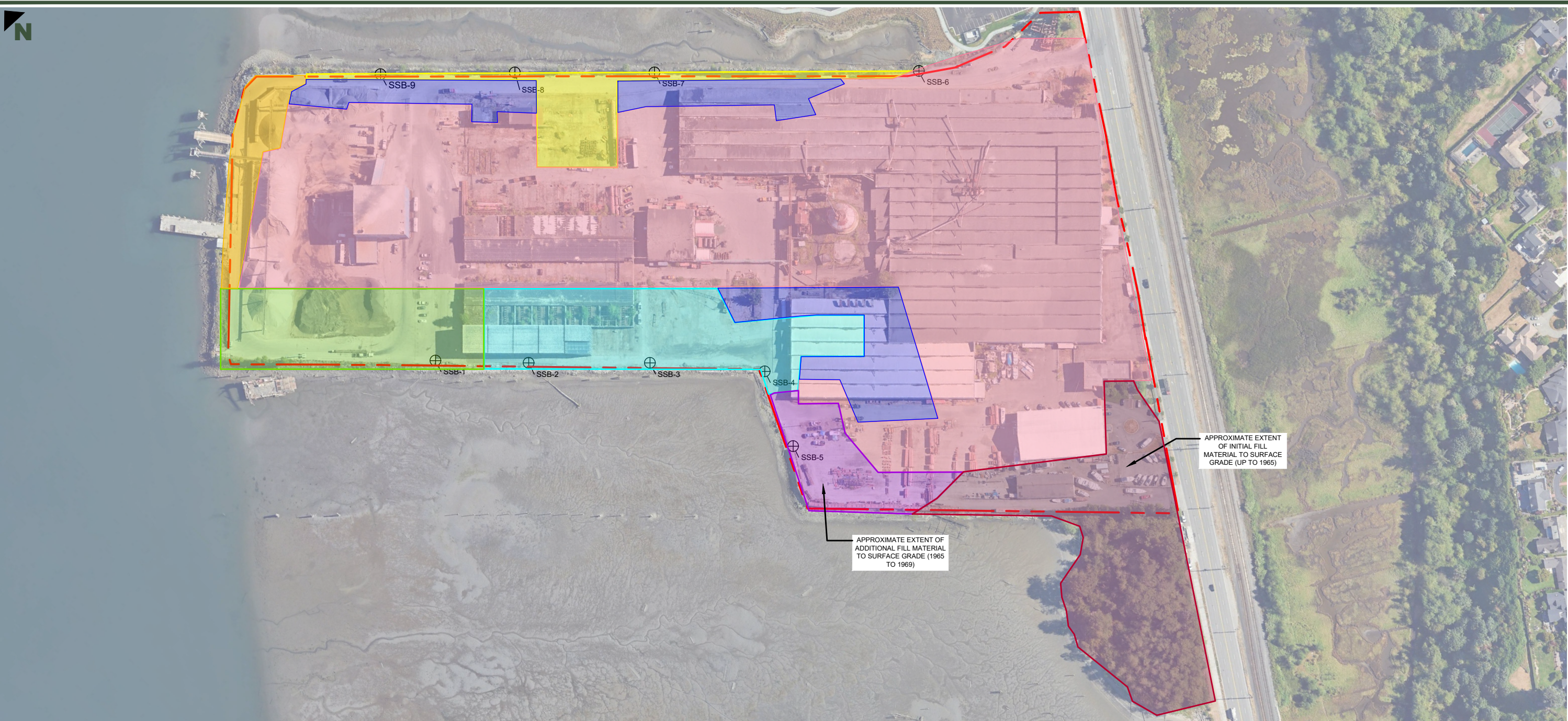
⁶ Port Angeles Rayonier Mill Site. Cleanup Site ID: 2270.





Figures

Drawing path: N:\Portland\Projects\JELD-WEN\JELD-WEN NORD DOOR\108_V20689.00001_2024 PRD\Activities\Figures\New CADD\2024_Nord.dwg



LEGEND	
	APPROXIMATE PROPERTY BOUNDARY
	2025 UPLAND SHORELINE GEOPROBE BORINGS
	FILLED BY 1938
	FILLED BY 1947
	FILLED BY 1955
	FILLED BY 1965
	FILLED BY 1974
	FILLED BY 1978
	ADDITIONAL FILL MATERIAL TO SURFACE GRADE 1965 TO 1969
	KNOLL FILL AREA

NOTES
AERIAL IMAGERY FROM GOOGLE EARTH JULY 2024

JELD-WEN SITE
300 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON

Report
REVISED CONCEPTUAL SITE MODEL - UPLAND
SOILS

Figure
HISTORICAL FILL SUMMARY

Date	July 2, 2025	Scale	AS SHOWN	Figure No.
File Name	2024_Nord	Project No.	108.020778.00001	1



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LEGEND

GP	GEOPROBE	SOIL DIOXINS (TEQ)
MW-1	MONITORING WELL	
		<5.2 PG/G (LESS THAN PCL)
		>5.2 PG/G (GREATER THAN PCL)
		>52.2 PG/G (10X PCL)
		>522 PG/G (100X PCL)
		>5,220 PG/G (1,000X PCL)

NOTES

THE BUILDINGS, SURFACE UTILITIES, EDGE OF PAVEMENT, AND APPROXIMATE SHORELINE SHOWN ON THIS MAP ARE BASED ON A 2006 SURVEY PERFORMED BY WH PACIFIC.

FIGURE FROM AUGUST 2023 CAP

AERIAL PHOTO FROM GOOGLE EARTH PRO, JULY 2019

JELD-WEN SITE
300 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON

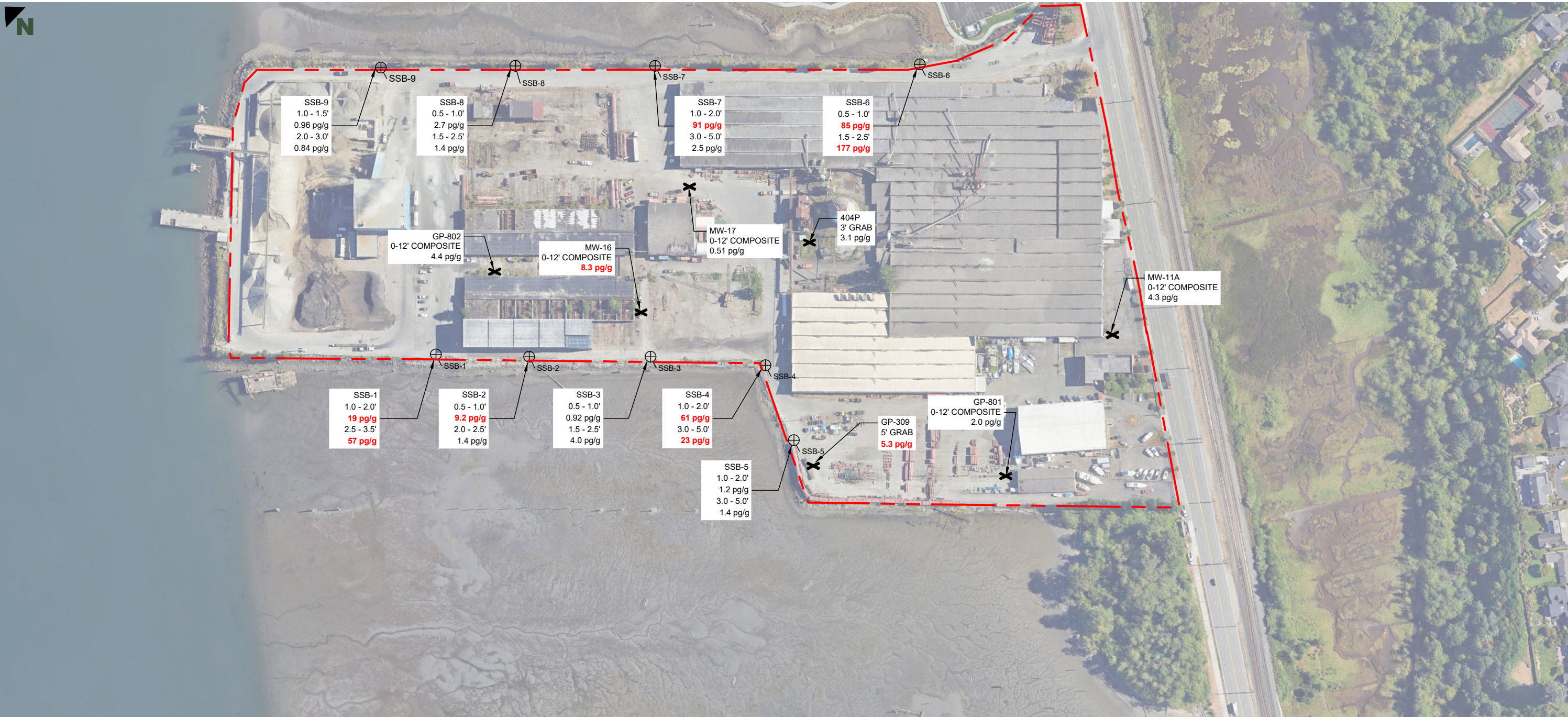
Report
REVISED CONCEPTUAL SITE MODEL - UPLAND SOILS

Figure
INDICATOR HAZARDOUS SUBSTANCE PCL EXCEEDANCES -
DIOXINS (TEQ) IN SOIL

Date	MARCH 2021	Scale	AS SHOWN	Figure No.
File Name	NOVEMBER 2021 V2	Project No.	108.020778.00001	2



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LEGEND

APPROXIMATE PROPERTY BOUNDARY

⊕

2025 UPLAND SHORELINE GEOPROBE BORINGS

✕

HISTORICAL SAMPLES

NOTES

ALL VALUES EXPRESSED IN PICOGRAMS PER GRAM (PG/G).

DIOXINS VALUES OF THE 2025 UPLAND SHORELINE SAMPLES EXPRESSED AS TEQ USING U=1/2 RL.

DIOXINS VALUES OF THE HISTORICAL SAMPLES EXPRESSED AS TEQ USING U=0.

VALUES OVER THE CUL OF 5.2 pg/g SHOWN IN **RED**.

JELD-WEN SITE
300 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON

Report
REVISED CONCEPTUAL SITE MODEL - UPLAND
SOILS

Figure
SHORELINE SUMMARY RESULTS

Date	July 2, 2025	Scale	AS SHOWN	Figure No.
File Name	2024_Nord	Project No.	108.020778.00001	3

