State of Oregon
Department of Environmental Quality Memorandum

Date: 8/18/2023

To: FILE

Through: Brad Shultz (Manager) and Bruce Scherzinger (Lead Worker)

From: Tina Elayer (Cleanup Project Manager)
Western Region

Subject: Jack M. Strickfaden Prop, LUST # 24-90-4246; Staff Memorandum in support of a No Further Action determination

This document presents the basis for the Oregon Department of Environmental Quality's (DEQ's) recommended No Further Action (NFA) determination for the Jack M. Strickfaden Prop (Property), in Salem. As discussed in this report, contaminant concentrations in soil and groundwater are below acceptable risk levels.

The proposed NFA determination meets the requirements of Oregon Administrative Rules Chapter 340, Division 122, Sections 0205 to 0360, and ORS 465.200 through 465.455.

The proposal is based on information documented in the administrative record for this site. A copy of the administrative record index is presented at the end of this report.

1. BACKGROUND

Site location.
The site's location can be described as follows:
- Address: 2860 Cherry Ave. NE, Salem, Marion Oregon.
- Latitude 44.9657º North, longitude -123.0194º West
- Tax lot 073W14AB0090, Township 7 South, Range 3 West, Section 14

Site setting.
Property size is 6.29 acres. Main structures on Property include a large warehouse with lumber storage and operations. Current lessee is Cascade Warehouse Company (Ventura Foods/Cascade Warehouse). There is also a smaller old maintenance shop/lumber office building located on Property. A 550-gallon gasoline underground storage tank (UST) was located on the southwestern side of the old maintenance shop/lumber office shop building.

Adjacent properties include the Bark Boys landscaping supply store and Salem Nut Growers, Inc. located south of Property, Portland & Western Railroad located east of Property, Petrocard Pacific Pride and parking lots located north of Property, Capitol Subaru and Oregon School for the Deaf located west of Property across Cherry Ave. NE.

Land use zoning – Land - 002 Market INDLG Industrial Large > 5 acres. Structure – Commercial – 561 storage warehouse – built 1965.

Physical setting.
Property is in a valley in an incorporated part of Salem. Elevation within city limits ranges from about 120 to 800 feet above mean sea level (amsl). Geology within this area of the central Willamette Basin consists of poorly consolidated Holocene-Pleistocene gravel, clay, and silty sand younger alluvium to a depth of 8 to10-feet, overlying and/or adjacent clayey silt, sand, and gravel older alluvium.

The water table is estimated to occur at a depth of approximately 20 to 30-feet below grade (USGS, 2005) within nearby portions of the Willamette Valley, and is coincident with seasonal Willamette River level trends. Shallow groundwater was first encountered during site investigation in sandy materials underlying clayey silt/silty clay at a depth of approximately 7 to 10-feet, which rose to static depths between 2 to 7-feet a few minutes after setting the temporary well casings/screens prior to sampling. Miocene-Pliocene units of the Troutdale Formation and Columbia River Basalt group underlie the alluvial deposits at depth, as well as deeper Paleogene marine sediment rocks. The inferred direction of groundwater flow in the vicinity is generally west to northwest given the proximity of the northerly flowing Willamette River located roughly 3/4-mile to the west.

Site history.
The property has been used for lumber storage and operations and was formerly named Capitol Lumber Co. as early as the 1970's. One 550-gallon gasoline UST was historically located beneath the southwest corner of the old maintenance shop/lumber office building. A singular dispenser was located over the UST. Overfill from dispenser was thought to have caused the gasoline leak. The UST and dispenser were removed in the 1990's.

2. BENEFICIAL LAND AND WATER USE DETERMINATIONS

Land use.
The Property is zoned for large industrial use with commercial structures. Cascade Warehouse Company is currently using the Property in an industrial application as a storage and handling facility for non-hazardous wood and steel products. Scott Cantonwine from Cascade Warehouse Company sent a memo (MEMO to file July 2023) to Strickfaden (OR), LLC confirming current statement of use. The southwestern portion of the old maintenance shop/lumber office building is included in the Locality of Facility (LOF) which extends under Cherry Ave NE to the western side of the road.

Groundwater use.
Soil and groundwater impacts identified near the west property line area and/or adjacent right-of-way along the east side of Cherry Avenue NE do not appear to extend to the west side of Cherry Avenue on to other properties. The inferred groundwater flow direction is to the west to northwest.

The conceptual site model (CSM) indicates the soil leaching to groundwater pathway and groundwater ingestion and inhalation pathway are complete. However, the Property and surrounding area within the LOF is provided drinking water by the city of Salem.

Nearby supply wells were further evaluated. Salem Nut Growers, Inc. and Oregon School for the Deaf water supply wells are located cross-gradient approximately 780-feet to the south and 1,750-feet to the southwest of the site, respectively. These wells are completed with openings in the deeper older alluvium, terrace, and flood deposits, as evidenced by depth drilled of 92-feet to 153-feet deep in well logs. The Property is also situated within the potential 20–30-year time of travel zones associated with the City of Keizer municipal well field located over 1.5 miles to the northwest, according to a recent search on the DEQ-OHA Drinking Water Protection (https://hdcgcx2.deq.state.or.us/Html5Viewer211/?viewer=drinkingwater) interactive map viewer. However, there appears to be at least 20-feet of vertical separation between Property impacts and groundwater resources with the identified water uses in the Property vicinity given reported water levels.

The dataset collected to date and understanding of the hydrogeology and anticipated future beneficial uses within the Property locality are such that potential drinking water resources have not been affected. The lateral extent of soil and groundwater impacts is adequately delineated for risk management decisions, consistent with the beneficial land and water uses anticipated in the future within an occupational exposure setting. The shallow soil and groundwater impacts do not appear to have affected deeper groundwater resources used for drinking water.

Surface water use.
The northerly flowing Willamette River is located roughly 3/4-mile to the west. Stormwater flows westerly from the Property into catch basins on east and west side of Cherry Ave NE where the water is discharged into a 12” storm water line which then runs into a stormwater detention basin.

3. INVESTIGATION AND CLEANUP WORK

On September 13th, 1990, the DEQ Willamette Regional Office received a report of a petroleum product release to the soil at 4381 Shoreline Drive in Salem, Oregon. This was a typographical error, and the Shoreline Drive address was Jack M. Strickfaden’s home address. Once this was cleared up Mr. Strickfaden submitted a letter to DEQ stating he will dig out the underground storage tank (UST) as opposed to filling it in place, his original plan due to a portion of the UST located under the old maintenance shop/lumber office building. UST removal was conducted over a weekend and the excavation was backfilled with the soil on-site for fear of building collapse. On April 20, 1990, Mr. Strickfaden submitted a site diagram that indicated the location of the tank and two soil sample collection points. Attached to the diagram was an analytical report, dated April 14, 1990, with results of 570 and 310 ppm total petroleum hydrocarbons (TPH) using EPA Method 418.1. In response to the 1990 confirmed fuel release a Phase II Environmental Site Assessment (ESA) soil and groundwater sampling event was conducted on March 3, 2022, by EnviroLogic Resources, Inc.

The purpose of the Phase II soil and groundwater investigation was to identify and replicate the 1990 decommissioning area sampling, and to potentially determine the present nature and distribution of the subsurface soil and groundwater impacts.

Five (5) soil borings were advanced and five (5) temporary monitoring well points were completed on the Property. Soil and groundwater samples were collected in the vicinity of the former 550-gallon UST (SB1/TW1 and SB5/TW5) and elsewhere on-site (SB4/TW4). The area was impacted with petroleum and was indicative of a weathered gasoline and, potentially, diesel fuel release. Petroleum "free product" was not observed in any of the temporary wells; however, a slight faded sheen was observed in the cuttings and temporary well samples/purge water associated with the SB1/TW1 and SB5/TW5 locations. Detectable concentrations of gasoline- and diesel/oil-type total petroleum hydrocarbons (TPH), were identified by the laboratory on collected samples. Follow-up analyses for select volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), and lead (Pb)/dissolved Pb were also requested to further assess the nature and magnitude of hydrocarbon impacts to the subsurface. After consulting with DEQ staff with the results, additional soil and groundwater investigations were recommended.

In January 2023 an additional investigation was conducted. Six (6) soil borings, SB6, SB7, SB8, SB9, SB10, and SB11 were advanced (three on-site and three off-site) by Xavier Environmental, of Sherwood, Oregon, via direct-push methods, from which a total of six (6) soil samples were collected at select depths and submitted to the laboratory for analyses. Sample depths ranged from 7-feet and 12-feet, with the soil-water interface targeted for evaluation in the absence of obvious shallower soil impacts. Groundwater quality was also assessed to characterize the relevant petroleum constituents-of-interest (COI) in groundwater. Six (6) temporary wells, TW6 through TW11 were completed by Xavier Environmental within the SB6 through SB11 (three on-site and three off-site) borings via direct-push methods, from which one (1) groundwater sample was collected from each temporary well point and submitted to the laboratory for analyses. The groundwater sample depth ranged from 4.3 feet to 7.0 feet below grade for the temporary well points on January 31, 2023.

Nature and extent of contamination.
Laboratory analytical results show that DEQ generic RBCs are exceeded for certain occupational soil and groundwater exposure pathways that have the potential to be complete at the site. Soil and groundwater remain impacted at the Property with gasoline/diesel/oil range hydrocarbons, ethylbenzene, 1,2-Dibomoethane, naphthalene, and dissolved lead constituents of concern (COCs). Soil samples were collected from 7-10' below ground surface (bgs). Depth to water in temporary wells ranged from 2.5 – 7 feet bgs. Soil contamination was encountered deeper than 3 feet bgs and residual subsurface impacts appear to extend to the west, northwest, and north from the former tank area. Impacts associated with the former leaking underground storage tank (LUST) system have not been identified further to the west on other properties.

Beneath portions of Cherry Avenue NE right-of-way there are 16-inch diameter water main (constructed in 1951), 12-inch diameter reinforced concrete storm sewer (uncertain age), and natural gas pipeline (uncertain age) utility corridors. At least one of these utility corridors is older

than the date of tank decommissioning, where it is uncertain if pockets of contamination may remain that possibly may be encountered by others in the future during utility repairs or replacement work in the vicinity of the former LUST system release. EnviroLogics Resources, Inc. is preparing a contaminated media management plan (CMMP) to address if pockets of contamination may exist at higher concentrations than identified to date.

4. RISK EVALUATION

Conceptual site model.
To evaluate human exposure to residual chemical contamination requires an assessment of the type and extent of that exposure. This is based on current and reasonably likely future site use. DEQ publishes risk-based concentrations (RBCs) for contaminants commonly encountered, for different types of exposure scenarios. These RBCs are conservative estimates of protective levels of contaminants in soil, groundwater, and air. Table 1 shows potential exposure pathways and receptors for this site. Based on this, applicable RBCs are identified and used for risk screening.

Table 1. Identification of applicable RBCs, based on pertinent pathways and receptors.

	Pathway	Receptor	Is Pathway Complete?	Is RBC Exceeded?	Comments
Soil	Ingestion, Dermal Contact and Inhalation	Residential	No	No	Impacted soil located > 3 feet bgs. Cherry Ave NE is capped with asphalt.
		Urban Residential	No	No	
		Occupational	Yes	No	
		Construction Work	Yes	No	
		Excavation Worker	Yes	No	
	Volatilization to Outdoor Air	Residential	No	No	N/A
		Urban Residential	No	No	
		Occupational	Yes	No	
	Vapor Intrusion Into Buildings	Residential	No	Yes	Impacted soil > 3 feet. Impacted soil is located in SW corner of former shop/maintenance building and the building is slated to be demolished in the future.
		Urban Residential	No	Yes	
		Occupational	Yes	No	
	Leaching to Groundwater	Residential	No	Yes	CMMP being developed for construction workers who might encounter impacted soil and groundwater.
		Urban Residential	No	Yes	
		Occupational	Yes	Yes	
Groundwater	Ingestion & Inhalation From Tap Water	Residential	No	Yes	Property and surrounding area supplied with municipal water. Nearby supply wells have at least 20-feet vertical separation between Property impacts and groundwater resources.
		Urban Residential	No	Yes	
		Occupational	Yes	Yes	
	Volatilization to Outdoor Air	Residential	No	No	N/A
		Urban Residential	No	No	
		Occupational	Yes	No	
	Vapor Intrusion Into Buildings	Residential	No	No	Groundwater samples compared to newly updated VISLs and all results were below the most conservative residential receptor.
		Urban Residential	No	No	
		Occupational	Yes	No	
	Groundwater in Excavation	Occupational	Yes	No	CMMP being developed.
Soil Gas to VI		Residential	No	No	N/A
		Urban Residential	No	No	
		Occupational	Yes	No	
Air		Residential	No	No	N/A
		Urban Residential	No	No	
		Occupational	Yes	No	
Ecological		Terrestrial & Surface Water	No		N/A

Notes:
bgs - Below Ground Surface
CMMP - Contaminated Media Management Plan
VISLs - Vapor Intrusion Screening Levels

Contaminant concentrations.
Concentrations of gasoline range organics (GRO) identified in soil sample SB1-12' (965 mg/kg), SB5-8' (3,220 mg/kg), SB5-12' (853 mg/kg), and SB9-7' (37.7 mg/kg) exceed $RBC_{sw\text{-}occupational}$ at 130 mg/kg. Soil diesel range organics (DRO) and oil range organics (ORO) impacts did not exceed relevant RBCs for occupational uses.

Concentrations of ethylbenzene identified in soil sample SB5-8' (3.12 mg/kg) and SB5-12' (2.48 mg/kg) exceed the occupational RBCs ($RBC_{sw\text{-}occupational}$ at 0.90 mg/kg). Concentrations of naphthalene identified in soil sample SB5-12' (2.13 mg/kg) exceeded the occupational RBCs ($RBC_{sw\text{-}occupational}$ at 0.34 mg/kg). Both samples were collected from greater than 3 feet below ground surface.

Concentrations of GRO identified in groundwater samples TW1 (3,830 µg/L) and TW5 (2,840 µg/L) exceed the occupational RBCs ($RBC_{tw\text{-}occupational}$ at 450 µg/L). Concentrations of DRO identified in groundwater samples TW1 (983 µg/L) and TW2 (446 µg/L) exceed the occupational RBCs ($RBC_{tw\text{-}occupational}$ at 430 µg/L). Concentrations of ORO identified in groundwater samples TW1 (548 µg/L) exceeded these occupational RBCs.

Concentrations of benzene, toluene, and xylene(s) at the site did not exceed the occupational RBCs. Concentrations of ethylbenzene identified in groundwater sample TW1 (2.32 µg/L) and TW5 (52.1 µg/L) exceed the occupational RBCs for groundwater ingestion and inhalation TW5 ($RBC_{tw\text{-}occupational}$ at 0.72 µg/L). Concentrations of naphthalene identified in groundwater samples TW5 ($RBC_{tw\text{-}occupational}$ at 0.72 µg/L) also exceed the occupational RBCs for tap water exposures. Similarly, concentrations of dissolved lead identified in sample TW1 (33.4 µg/L) also exceed the occupational RBCs ($RBC_{tw\text{-}occupational}$ at 15 µg/L). However, when the groundwater results were compared to the updated vapor intrusion screening level (VISL) guidance there were no exceedances for outdoor air, indoor air, or groundwater in excavation.

Human health risk.
The biggest risk at the Property is exposure to contaminated soil greater than 7 feet bgs. EnviroLogic Resources, Inc. is developing a CMMP for construction workers who might encounter impacted soil to address this risk.

Ecological risk.
The Property is in an industrial area and no ecological receptors were observed. Nearest surface water is the Willamette River which is over 3/4- mile to the west. Stormwater runs from the Property into catch basins where it is then transported to a stormwater treatment system.

5. RECOMMENDATION

Following decommissioning and removal of the UST and based on sample results for soil and groundwater, acceptable risk levels are not exceeded, a No Further Action determination is recommended for this site. In addition, a 30-day public comment period will be provided to the city of Salem and Salem Public Works department.

The No Further Action determination should be recorded in DEQ's underground storage tank database LUST No. 24-90-4246.

6. ADMINISTRATIVE RECORD

EnviroLogic Resources, Inc., (2022), March 2022 Work Summary - 2860 Cherry Avenue NE, Salem, Oregon 97301, LUST #24-90-4246. Consultant document dated September 12, 2022.

EnviroLogic Resources, Inc., (2022), Additional Investigations Work Plan - 2860 Cherry Avenue NE, Salem, Oregon 97301, LUST #24-90-4246. Consultant document dated November 21, 2022.

EnviroLogic Resources, Inc., (2023), Additional Soil & Groundwater Investigations - 2860 Cherry Avenue NE, Salem, Oregon 97301, LUST #24-90-4246. Consultant document dated May 30, 2023.

EnviroLogic Resources, Inc., (2023), Locality of Facility Update- 2860 Cherry Avenue NE, Salem, Oregon 97301, LUST #24-90-4246. Consultant document dated June 29, 2023.

EnviroLogic Resources, Inc., (2023), Land Use and Locality of Facility Update- 2860 Cherry Avenue NE, Salem, Oregon 97301, LUST #24-90-4246. Consultant document dated July 26, 2023.

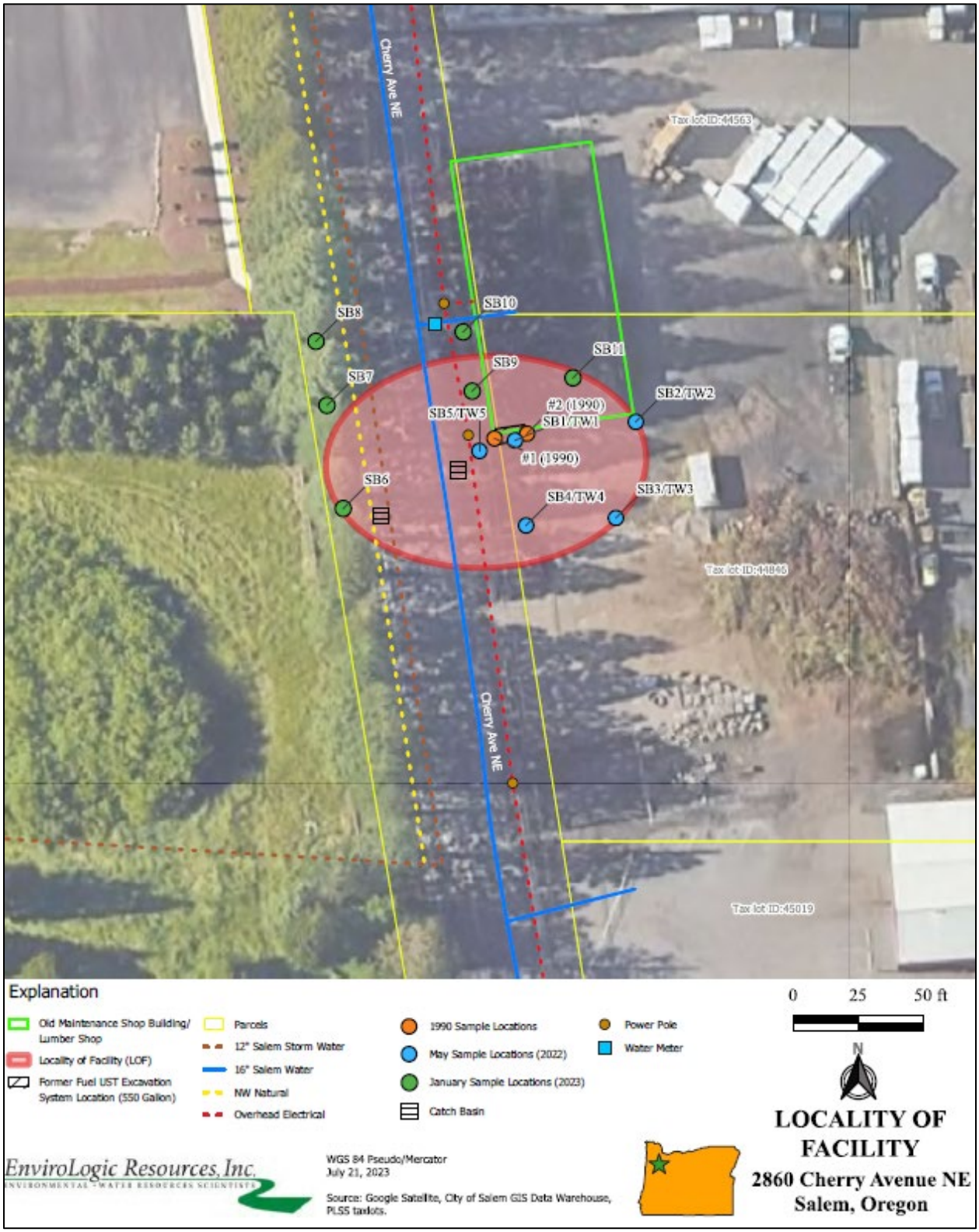
Oregon Water Resources Department, (2022). OWRD: Oregon Well Report Query. Governmental Website, https://apps.wrd.state.or.us/apps/gw/well_log/, (last site visit, October 27, 2022).

USGS, Conlon et al (2005), Ground-Water Hydrology of the Willamette Basin, Oregon. Groundwater Flow Study Willamette Valley. Professional paper: Scientific Investigations Report 2005-5168.

7. ATTACHMENTS

1. Vicinity map
2. Site map

Vicinity Map retrieved from EnviroLogic Resources, Inc. Additional Soil & Groundwater Investigations Report, May 30, 2023.



Site Map retrieved from EnviroLogic Resources, Inc. Additional Soil & Groundwater Investigations Report, May 30, 2023.