State of Oregon
Department of Environmental Quality Memorandum

Date: June 13, 2024

To: FILE

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From: Ellen Woods
Western Region

Subject: Garden Valley Chevron (former), LUST #10-11-1316; 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 former Garden Valley Chevron, in Roseburg. As discussed in this memo, reported contaminant concentrations in soil and groundwater in 2012 were below acceptable risk levels.

The proposed NFA determination meets the requirements of Oregon Administrative Rules Chapter 340, Division 122, Sections 0205 to 360.

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 (see Figure 1 for a vicinity map):

- Address: 770 NW Garden Valley Blvd, Roseburg, Douglas County, Oregon.
- Latitude 43.2279 North, longitude -123.3638 West.
- Douglas County map and tax lot 2706W13BB00300, Township 27 South, Range 6 West, Section 13.

Site setting.
This site spans approximately 0.77 acres and is located in a commercially developed area of Roseburg. The site is an operating Fred Meyer retail service station with a small food mart near the center of the site and a small restroom building on the northeast corner of the property. A canopy covers multiple pump islands in the center of the site. A Dutch Bros coffee stand operates on the southwestern corner of the property. The rest of the property is paved. Site features are depicted in Figure 2.

The adjacent properties include two bank buildings to the north, a hotel to the northeast, a multi-unit commercial building to the east, federal government administrative offices to the south, an active Sinclar retail fueling station to the west and a strip mall to the northwest. Northwest Garden Valley Blvd runs adjacent to the site along the south/southeastern property boundary.

Physical setting.
The site is at an elevation of 475 feet above mean sea level and is generally flat. Subsurface soils underneath the site primarily consist of dark brown clay with sand and/or gravel down to 5 feet to 6 feet below ground surface (bgs), underlain by weathered basalt down to 15 feet bgs. Shallow groundwater at the site has been encountered at depths ranging from 6.5 feet to 13 feet bgs. Groundwater flow direction is assumed to be towards the northwest, based on a historic monitoring well network at the site and regional topography. The nearest surface water is Park Lake, located approximately 0.33 miles to the west in Stewart Park Natural Area. The South Umpqua River is approximately 0.68 miles south of the site.

Site history.
The site has operated as a retail fueling station since at least 1974. The site underwent underground storage tank (UST) system upgrades in 2002. Before UST decommissioning work at the site in 2012, the station included three 10,000-gallon USTs that stored unleaded gasoline. The site currently has three active USTs: one 20,000-gallon gasoline tank, one 10,000-gallon diesel tank and one 8,000-gallon gasoline tank.

The properties immediately east and west adjacent of the site both have regulatory history with DEQ with respect to leaking USTs (LUSTs). The 764 NW Garden Valley Blvd property to the east has history as a retail fueling station with documented vapor complaints from 1985 and petroleum releases in 1991 (LUST #10-91-0040) and 1997 (LUST #10-97-0088). DEQ issued an NFA determination for both LUST files in October 2002. The current Sinclair service station located at 792 NW Garden Valley Blvd (west of the site) was formerly a Shell service station with a documented release in 1995 (LUST #10-95-0016). DEQ issued an NFA determination for this LUST file in January 2002.

2. BENEFICIAL LAND AND WATER USE DETERMINATIONS

Land use.
The site and surrounding properties north of NW Garden Valley Blvd are zoned as C-3 General Commercial. This zoning designation permits a variety of retail and commercial uses. A single-family dwelling provided in conjunction with a permitted use is allowed, as well as single-family dwellings above commercial structures. The properties south of the site and NW Garden Valley Blvd are zoned as PR-Public Reserve. This zoning designation is primarily intended for publicly owned lands and permits a variety of uses that support public service activities, such as public buildings, schools, hospitals and recreational facilities. A single-family dwelling provided in conjunction with a permitted use is allowed. No other residential uses are permitted.

The site is an active retail fueling station and has been a fueling station since at least 1974. The site and associated structures are currently owned by Fred Meyer Stores, Inc. and use of the site

is unlikely to change in the foreseeable future. The adjacent properties are also expected to remain in commercial use into the foreseeable future. While the zoning designations for the site and adjacent properties permit residential use as single-family dwellings in conjunction with permitted commercial uses, residential use of the site and surrounding properties in the foreseeable future is unlikely.

Groundwater use.
Groundwater is not currently used for a drinking water supply or other beneficial uses at the site, and future use of groundwater is unlikely due to the availability of city water. The City of Roseburg provides water service to the site and surrounding properties. The City gets its supply from an intake located on the North Umpqua River, located over 4 miles away from the site to the north. A door-to-door well search did not identify any water wells at the site or surrounding properties. One well possibly within 0.5 miles of the site was identified in the Oregon Water Resources Department database, but the actual location of the well could not be determined. This well was constructed in 1968 and was completed to a depth of 23 feet bgs. Current use of this well is unlikely due to the availability of city water. The contamination at the site has primarily been observed within property boundaries and is unlikely to have impacted the well if it is still in use.

Surface water use.
There are no surface water bodies at the site. The nearest surface water bodies, Park Lake and the South Umpqua River, are both located over 0.25 miles away from the site.

The site is entirely paved. Several stormwater drains are located on the site's driveways and nearby parking areas. Stormwater directed to the drains flows into the municipal stormwater system.

3. INVESTIGATION AND CLEANUP WORK

In 2002, five samples were collected underneath the dispensers at the site as a part of UST system upgrades. Relatively low levels of oil contamination (102 milligrams per kilogram [mg/Kg] and 90.3 mg/Kg) were detected in two of the five samples at approximately 18 inches bgs. The detections were attributed to surface spills from vehicles using the service station and not a failure of the UST system, and a petroleum release was not reported to DEQ at this time.

A Phase II Environmental Site Assessment (ESA) was conducted at the site in 2011 as a part of a property transaction. Sampling for the Phase II ESA occurred in September 2011. Seven borings were advanced throughout the site to assess soil and groundwater conditions (Figure 2). A total of seven soil samples were collected. A very low concentration of diesel (3.4 mg/Kg) was detected in one soil sample from 3 feet to 4 feet bgs in the historic UST excavation area, while neither gasoline nor oil were detected in any soil samples. Polynuclear aromatic hydrocarbons (diesel constituents referred to as PAHs) were not detected in this sample or another soil sample from the site's eastern property boundary at 10 feet to 11 feet bgs. Volatile organic compounds

(gasoline constituents known as VOCs) were not analyzed in any of the soil samples due to no detections of gasoline.

Groundwater samples were also collected from each boring. Concentrations of diesel were detected in five samples ranging from 59 micrograms per liter (µg/L) to 200 µg/L. Oil was also detected in one sample from the historic UST excavation area at a concentration of 170 µg/L. As with the soil samples, gasoline was not detected in any sample. Two groundwater samples were analyzed for VOCs and the only VOC detected was acetone at low concentrations (20 µg/L and 27 µg/L); acetone is not associated with petroleum releases. Various PAHs were detected in both groundwater samples at very low concentrations. A petroleum release was reported to DEQ due to the contaminant detections in soils and groundwater at the site, which opened LUST file #10-11-1316.

An additional Phase II ESA was conducted in February 2012 to assess the potential for a release from the existing UST system. During field activities, the existing UST system (tanks, dispensers and product lines) was decommissioned by removal and replaced with an upgraded system. Soil samples were collected from the UST excavation area and near the former piping and dispensers. An area of visibly contaminated soil in the southwest corner of the UST excavation was over-excavated to remove the soil and four soil samples were collected from this area following the cleanup. Sixteen soil samples were collected total. Gasoline was not detected in any samples. Diesel was detected in four samples at very low concentrations raining from 2.4 mg/Kg to 5 mg/Kg. Oil was detected in six samples at concentrations ranging from 4.3 mg/Kg to 51 mg/Kg. The detections were primarily in shallow soils near the former product lines and fuel dispensers that were being upgraded.

Groundwater was only encountered when it entered the UST excavation area at approximately 8 feet bgs; a sample of the pit water was collected. Gasoline was detected in the sample at a concentration of 4,100 µg/L and diesel was detected at 300 µg/L. Heavy-range hydrocarbons were not detected in the sample. Various VOCs were detected in the sample, including benzene (94 µg/L) and ethylbenzene (110 µg/L). Naphthalene was also detected at 22 µg/L and 13 µg/L, in addition to other PAHs that were detected at very low concentrations. Dissolved lead was also detected at 4 µg/L.

Approximately 371 tons of petroleum contaminated soils were excavated from the site and taken to Coffin Butte Landfill for disposal in 2012. Approximately 44,987 gallons of groundwater were pumped and treated onsite, followed by disposal into the sanitary sewer system. No additional environmental cleanup or investigation was conducted at the site after the UST system upgrades were completed.

Nature and extent of contamination.
Soil and groundwater at the site are impacted by contamination from a petroleum release from at least one former UST system at the site and/or one of the historic/current service stations adjacent to the property; the exact source is unknown. The primary contaminants of interest in soil are diesel-range total petroleum hydrocarbons (TPH) and oil-range TPH; gasoline TPH was not detected in any soil samples collected from the site. Diesel and oil were detected in shallow

soils at depths ranging from approximately 2.5 feet to 4 feet bgs, primarily near the former product lines and dispensers that were upgraded in 2012. Contamination was not observed in samples collected from deeper soils, ranging from approximately 8 feet bgs to 15 feet bgs. Soil contamination was observed to be limited to the site.

The primary contaminants of interest in groundwater are diesel-range TPH, oil-range TPH, gasoline-range TPH and gasoline related VOCs. Diesel and oil were detected in groundwater near the historic UST area near the center of the site and along the northeastern and eastern property lines (diesel only). Diesel, gasoline and VOCs were also detected in the pit water sample collected near the center of the site in the excavation area for the upgraded USTs. Based on the detections of diesel near the site's property lines, it is possible that groundwater contamination extends offsite to the north, although contaminant concentrations are likely to be low.

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.

DEQ's recommendation of an NFA determination for this site is based on the RBCs that were in effect prior to June 2023. A significant change to the RBCs in 2023 was the lowering of RBCs for vapor intrusion, such as the volatilization of contaminants from groundwater to indoor air in buildings. DEQ has elected to base this recommendation on RBCs that were in effect prior to June 2023 since the investigation work was completed in 2011 and 2012, and documented in a report submitted to DEQ in 2012. Also, the site has been in use as a gas station since 2012 (12 years). Petroleum products actively dispensed at a fueling station can be another source of indoor air contamination at the site. Oregon Health and Safety Administration (OSHA) standards such as permissible exposure limits are used to protect workers at this active service station. DEQ's Cleanup rules protect workers and other people and ecological receptors from unacceptable risks that result from the release of hazardous substances into the environment. It is likely when or if the service station closes that the tanks will be decommissioned, and the site will require re-assessment to determine if it meets DEQ's Cleanup standards in place at that time.

Pathways by which soil contamination at the site could reach human receptors include:

- Soil ingestion, dermal contact and inhalation for occupational receptors,
- Soil ingestion, dermal contact and inhalation for construction and excavation worker receptors,
- Volatilization to outdoor and indoor air for occupational receptors,

Pathways by which groundwater contamination at the site could reach human receptors include:

- Volatilization to outdoor and indoor air for occupational receptors,
- Groundwater in excavations for construction and excavation workers.

The soil leaching to groundwater and direct contact with groundwater via tap water exposure pathways are incomplete because the site and surrounding properties are served by the municipal water system. Domestic groundwater use is unlikely for the foreseeable future.

Contaminant concentrations.
Soil and groundwater samples were last collected at the site in 2012. Contaminant concentrations have likely decreased through natural attenuation. The highest concentrations of diesel and oil contamination remaining in soil at the site were 5 mg/Kg and 52 mg/Kg, respectively. Neither of these concentrations exceeded RBCs for the applicable occupational, construction worker or excavation worker soil exposure pathways (the most sensitive pathway is depicted below). Gasoline and PAHs were not observed in soil samples collected at the site. VOCs were not assessed due to no detections of gasoline in soils.

Contaminant	Highest Concentration Detected	RBCss Occupational	RBCss Construction Worker	RBCss Excavation Worker
Diesel	5 mg/Kg	14,000 mg/Kg	4,600 mg/Kg	>Max
Oil	52 mg/Kg	14,000 mg/Kg	4,600 mg/Kg	>Max

RBCss = Soil ingestion, dermal contact and inhalation
>Max = The RBC for this pathway is greater than 1,000,000 mg/Kg. Therefore, these substances are not expected to pose risks in this scenario.

The highest concentrations of contaminants in shallow groundwater were primarily observed in the pit water sample from the upgraded UST excavation area. Concentrations of gasoline, diesel, VOCs and PAHs did not exceed RBCs for the applicable occupational, construction worker or excavation worker groundwater exposure pathways (the most sensitive pathways are depicted below):

Contaminant	Highest Concentration Detected	RBCwi* Occupational	RBCwe* Construction/Excavation Worker
Gasoline	4,100 µg/L	>S	14,000 µg/L
Diesel	300 µg/L	>S	>S
Oil	170 µg/L	>S	>S
Benzene	94 µg/L	2,800 µg/L	1,800 µg/L
Ethylbenzene	110 µg/L	8,200 µg/L	4,500 µg/L
Naphthalene	22 µg/L	11,000 µg/L	500 µg/L
Other contaminants	Various	Various	Various

*RBCs are from DEQ's May 2018 RBC table.
RBCwi = Groundwater to vapor intrusion into buildings.
RBCwe = Ingestion, dermal contact and inhalation of groundwater in excavation.
>S = The RBC for the contaminant for this pathway is listed as >S, where S is the solubility limit. S for gasoline is 162,000 µg/L. S for diesel and oil is 6,800 µg/L.

Human health risk.
The highest concentrations of contaminants remaining onsite, as of 2012, do not exceed RBCs for any applicable exposure pathway for current or future occupational workers, construction workers or excavation workers. Vapor intrusion of volatiles from groundwater should not pose a risk to workers in the Dutch Bros building at the site because the building is not slab on grade, and business operations require the structure's windows to be opened regularly. Additionally, vapor intrusion into indoor air of adjacent buildings is likely to be attenuated due to clays in the subsurface geology that minimize the potential for vapor migration. The nearest structures adjacent to the site are also a sufficient distance away from the observed groundwater contamination (i.e., greater than 100 feet), such that vapor intrusion risk is unlikely.

The site remains an active retail fueling station. If site uses change, the USTs will need to be properly decommissioned in accordance with DEQ's UST rules and the site should be re-evaluated for potential releases.

Ecological risk.
The site is entirely paved and bordered by roads and other commercially developed properties. As such, no terrestrial or aquatic ecological receptors or habitat are present at the site or adjacent properties. Storm water at the site is managed via storm drains that feed to the city storm water system. Additionally, the nearest surface water body is Park Lake, located approximately 0.33 miles west of the site. Based on the lake's distance from the site, risk of aquatic ecological exposure to residual contamination from the site is not considered a concern as contaminants would not be expected to migrate this far. Thus, there is no current or future unacceptable ecological risk at the site.

5. RECOMMENDATION

Based on the removal of contamination and sample results for soil and groundwater, DEQ has determined that the contamination remaining at the site should not present an unacceptable risk to human health or the environment, and a No Further Action determination is recommended for

this site. The No Further Action determination should be recorded in DEQ's environmental data management system, Your DEQ Online (LUST #10-11-1316).

6. ADMINISTRATIVE RECORD

Petroleum Distribution System Upgrade Report, EVREN Northwest, June 24, 2002.

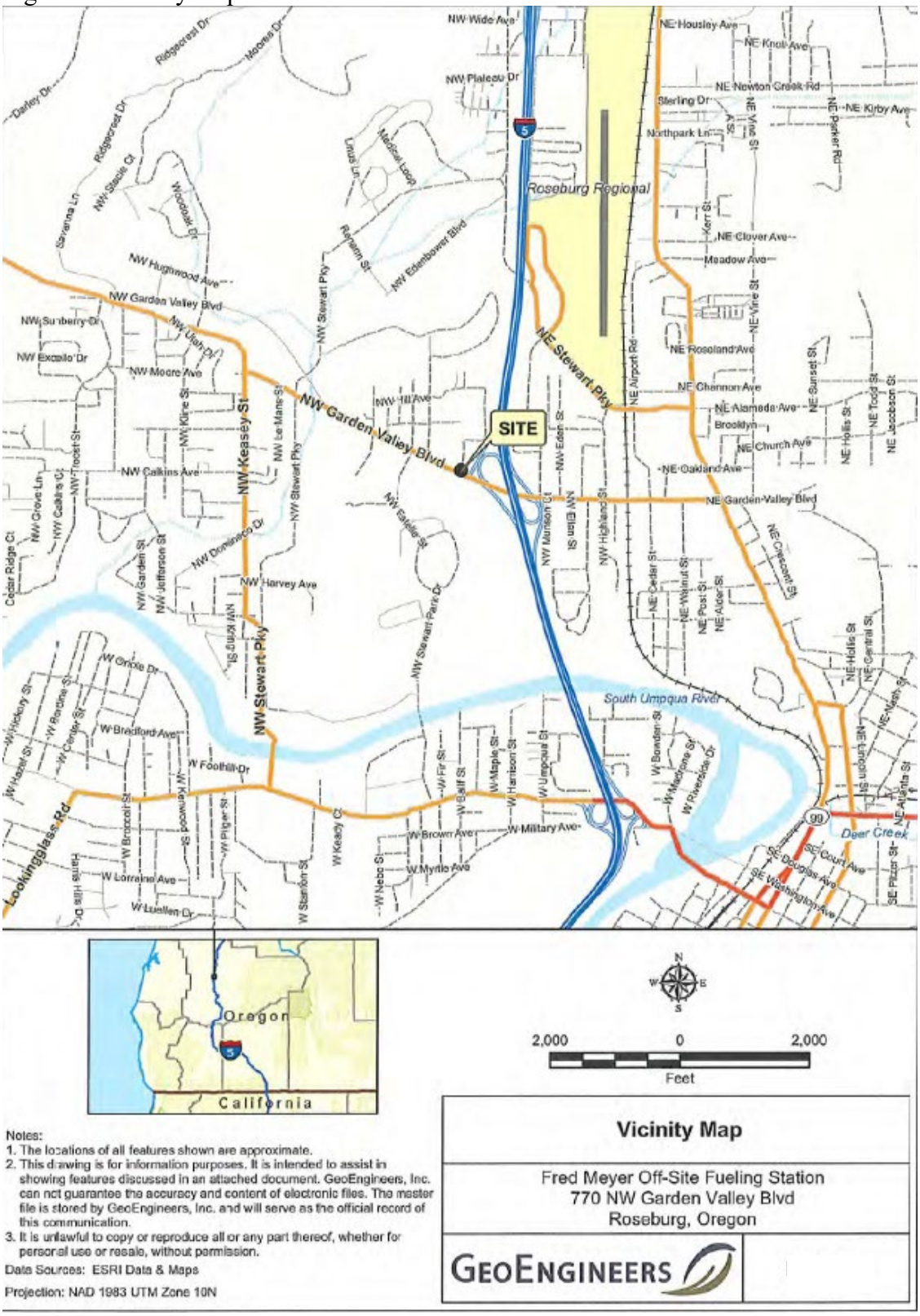
Phase II Environmental Site Assessment, GeoEngineers, Inc., October 17, 2011.

Additional Phase II Environmental Site Assessment Report, GeoEngineers, Inc., April 20, 2012.

7. ATTACHMENTS

1. Figure 1. Vicinity map
2. Figure 2. Site map with Phase II sampling locations
3. Figure 3. Additional Phase II ESA sampling locations
4. Table 1. Identification of applicable RBCs, based on pertinent pathways and receptors

Figure 1. Vicinity map

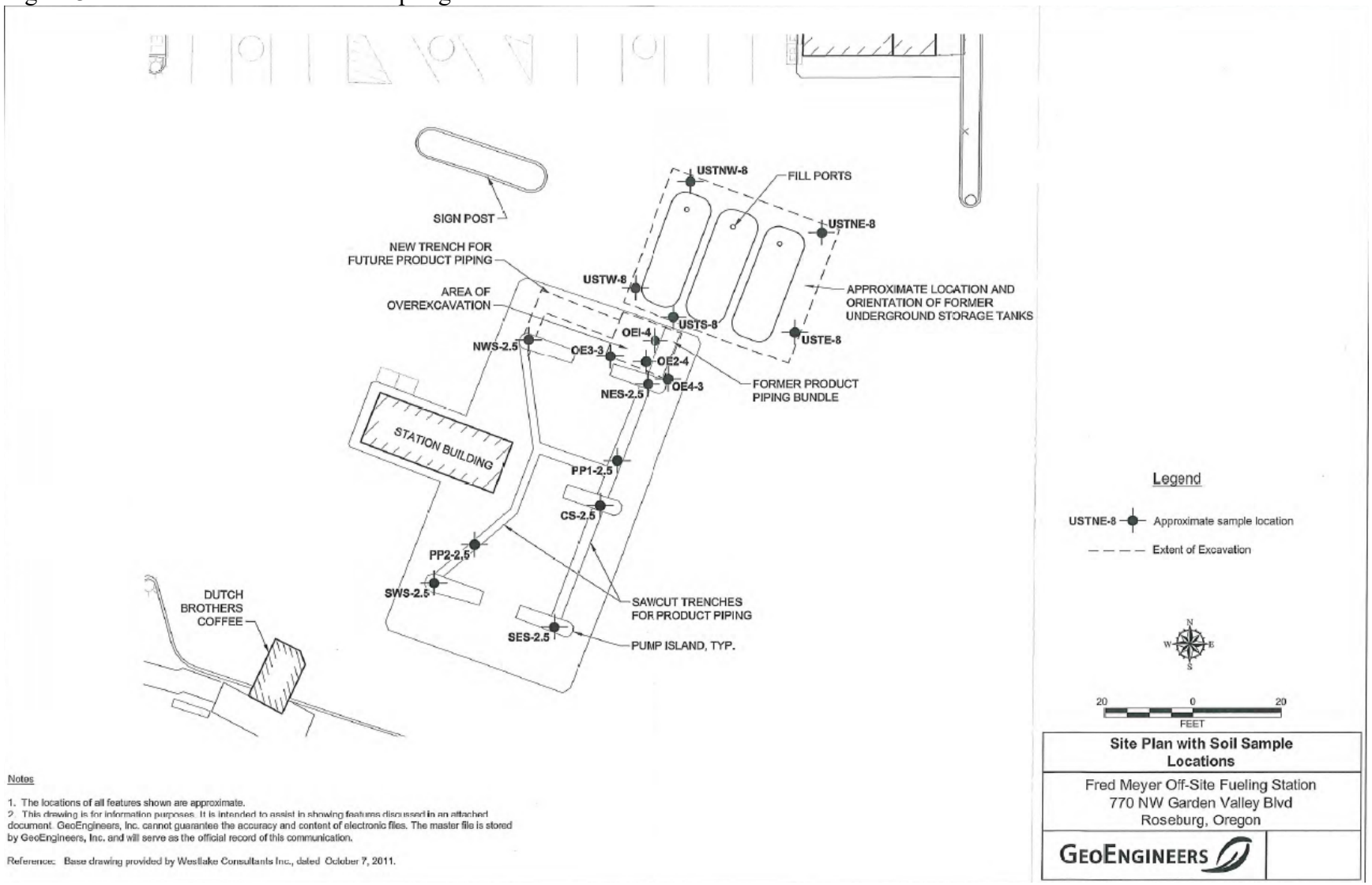


From *Additional Phase II Environmental Site Assessment Report*, GeoEngineers, Inc., April 20, 2012.

Figure 2. Site map with Phase II sampling locations

From *Phase II Environmental Site Assessment*, GeoEngineers, Inc., October 17, 2011.

Figure 3. Additional Phase II ESA sampling locations



From *Additional Phase II Environmental Site Assessment Report*, GeoEngineers, Inc., April 20, 2012.

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	See note 1.
		Urban Residential	No	No	
		Occupational	Yes	No	
		Construction Worker	Yes	No	
		Excavation Worker	Yes	No	
	Volatilization to Outdoor Air	Residential	No	No	
		Urban Residential	No	No	
		Occupational	Yes	No	
	Vapor Intrusion into Buildings	Residential	No	N/A	See note 2.
		Urban Residential	No	N/A	
		Occupational	Yes	N/A	
	Leaching to Groundwater	Residential	No	No	See note 3.
		Urban Residential	No	No	
		Occupational	No	No	
Groundwater	Ingestion & Inhalation from Tap Water	Residential	No	No	See note 4.
		Urban Residential	No	No	
		Occupational	No	No	
	Volatilization to Outdoor Air	Residential	No	No	
		Urban Residential	No	No	
		Occupational	Yes	No	
	Vapor Intrusion into Buildings	Residential	No	No	
		Urban Residential	No	No	
		Occupational	Yes	No	
	Groundwater in Excavation	Construction & Excavation Worker	Yes	No	
Ecological		Terrestrial & Surface Water	No	N/A	See note 5.

Notes:

1. Use of the site is currently occupational/commercial. While the zoning designation for the site and adjacent properties permit residential use as single-family dwellings in conjunction with permitted commercial uses, residential use of the site and surround properties in the foreseeable future is unlikely.
2. While a potential exposure pathway, DEQ no longer has RBCs to evaluate the soil to vapor intrusion to indoor air pathways.
3. Groundwater is not used for drinking. This pathway is therefore not considered, in accordance with Section B.3.2.4 of DEQ's Risk-Based Decision Making guidance.
4. While RBCs were exceeded, the residential and urban residential scenarios are incomplete. Moreover, city water is provided. Local groundwater is not currently used for drinking water and is not likely to be used for this purpose in the future.
5. The site is fully developed and lacks terrestrial or aquatic ecological habitat.