State of Oregon
Department of Environmental Quality Memorandum

Date: July 26, 2023

To: FILE

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

From: Tina Elayer (Project Manager)
Western Region

Subject: Dave's Shell LUST # 36-97-4028; 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 Dave's Shell in McMinnville. As discussed in this report, contaminant concentrations in soil and soil gas are below acceptable risk levels.

The proposed NFA determination meets the requirements of Oregon Administrative Rules Chapter 340, Division 122, Sections 0205 to 360; 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: 645 N. Adams Street, McMinnville, Yamhill, Oregon.
- Latitude 45.21262º North, longitude -123.19931º West
- Tax lot R4420AD 00600 (149761), Township 4 South, Range 4 West, Section 20

Site setting.
The property is located on 0.26 acres. West side of property is occupied by a building, eastern center by a former fuel canopy, southern corner by a shed and storage area. Remainder of the property is used for parking.

The surrounding area of the property can generally be described as commercial and residential. Current usage of the adjoining properties includes north – NW 7th Street with commercial development beyond; south – apartment building; east – N Adams Street with commercial development beyond; and west – apartment building.

The zoning is General Commercial by the City of McMinnville. Currently the property is occupied by Dave's Auto Service. The future use of the property is anticipated to remain commercial.

Physical setting.
The property is situated within the Willamette Valley, which is a portion of the Puget Trough physiographic sub province of the Pacific Mountain System geological province of the State of Oregon. This area consists of fluviolacustrine sedimentary deposits. Underlying the area is unconsolidated silt, sand, gravel, and clay. Generally, this specific area consists of fine-grained material, but gravel layers may also be found there to some extent. (Walker, et al., 1991).

According to the Oregon Water Resources Department (OWRD) online database and groundwater monitoring wells in the area, static groundwater appears to be located approximately 15 to 30 feet below surface grade (bsg). The flow of groundwater typically imitates the surface topography and ordinarily flows from higher to lower elevations.

The near surface flow may be influenced by stratigraphy, water bodies, rainfall, underground utilities, and other subsurface features. Based on the regional topography, groundwater is anticipated to flow to the southwest. The nearest major surface water in the vicinity of the Property is the North Branch Cozine Creek, located approximately 0.16 miles southwest of the property.

Site history.
October 7, 1997 – four underground storage tanks (USTs) were decommissioned and removed by PetroCon Services, Inc. (PCS). Two (2) 4,000-gallon USTs contained gas, and two (2) 3000-gallon USTs contained diesel and gas respectively. Following the decommissioning of the USTs, visual and olfactory observations identified evidence of petroleum contamination. Two discrete soil samples were collected from the material excavated from the tank nest. Sample #213-1 tested positive for gasoline by method TPH-HCID. Sample #213-1 and #213-2 were then tested using method TPH-G. Sample #213-2 tested positive at 94 ppm; sample #213-1 tested positive at 2,020 ppm.

June 6, 1997 – A total of 62.88 tons of petroleum contaminated soil (PCS) was excavated, transported, and delivered for treatment at Riverbend Landfill in McMinnville. Following removal of the PCS soil samples were collected from the walls and floor of the excavation. Sample #1-W tested positive at 27 ppm.; sample #2-M tested positive at 152 ppm.; sample #3-E tested positive 77 ppm. The rating for this site fell under Matrix Level II clean up requirements. Due to the elevated reading of sample #2-M and the inaccessibility to excavate the soils, Dave's Auto Service chose to close the remaining pocket of contamination in place.

July 18, 1997 - A hand auger was used to obtain three soil samples from areas surrounding the pocket of contamination. These samples all tested non-detect by method TPH-G. Based on these results, it was estimated that the pocket of contamination did not exceed two cubic yards.

October 1, 1999 - According to DEQ records, a 500-gallon waste oil tank was decommissioned by removal. Minor contamination was noted due to overfill and the material was temporarily stockpiled onsite. Samples were reportedly collected; however, the DEQ was not provided the results.

2. BENEFICIAL LAND AND WATER USE DETERMINATIONS

Land use.
The zoning is General Commercial by the City of McMinnville. Currently the property is occupied by Dave's Auto Service. The future use of the property is anticipated to remain commercial and not change in the foreseeable future.

Groundwater use.
Drinking water is provided by the City of McMinnville. There is no beneficial use for the shallow groundwater in the vicinity.

Surface water use.
North Branch Cozine Creek is located approximately 0.16 miles southwest of the property. Surface water has not been affected, nor is it likely to be affected in the future because of the release. Most of the developed areas of the property are covered with the building or impervious asphalt. Stormwater appears to sheet flow across the asphalt and collects in a catch basin directed to the municipal system or flows to the adjoining streets.

3. INVESTIGATION AND CLEANUP WORK

Alpha Environmental conducted a site investigation on May 2, 2023, to determine if impacts were present under the former waste oil tank and evaluate possible vapor intrusion concerns with the former fuel tanks.

Three shallow soil borings were advanced by Alpha using a hand driven GeoProbe sampler. Borings were advanced to approximately 8 feet below surface grade (bsg). Soil samples S1-S3 were collected with a duplicate soil sample. Soil samples were analyzed for NWTPH – Gx & Dx.

After collecting the soil samples Alpha completed vapor sampling in the former tank nest area with post run tubing method utilizing Geoprobe direct push rods to install the vapor points. The method to install vapor points involved advancing a 1.25-inch probe rod equipped with a Post Run Tubing (PRT) holder and expendable point to the target depth of approximately five feet. Once at the target depth, the expendable point on the bottom of the point holder was "popped" from the end of the rods, and the probe rods slowly removed from the boring until the bottom of the PRT holder was at a depth of approximately four feet above the base of the boring. Alpha used 1-liter Summa canisters to collect soil gas samples SG1-SG3. Analysis was conducted for VOCs & TPH.

Nature and extent of contamination.
Contaminants of interest include TPH and VOCs. Soil is the affected media. Contaminated soils are only present at a depth greater than three feet below ground surface.

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.

Potentially Exposed Population	Exposure Route, Medium and Exposure Point	Pathway Selected?	Potential Risk from This Pathway?	Reason for Selection or Exclusion
CURRENT AND FUTURE LAND USE: OCCUPATIONAL; IMPACTED MEDIUM: SOIL				
Adults (Occupational)	Soil Ingestion, Dermal Contact or Inhalation from on-site soils above 3 feet (RBC_{ss})	No	No	The pathway is incomplete because contaminated soils are not within 3 feet of the surface.
Adults (Construction & Excavation Workers)	Soil Ingestion, Dermal Contact or Inhalation from on-site soils below 3 feet (RBC_{ss}).	Yes	No	The pathway is complete; however, no petroleum was detected.
Adults (Occupational & Residential)	Volatilization to Outdoor Air (RBC_{so})	Yes	No	The pathway is complete; however, the detect vapor concentrations are below the RBCs.
Adults (Occupational & Residential)	Vapor Intrusion into Buildings (RBC_{si})	Yes	No	The pathway is complete; however, the detect vapor concentrations are below the RBCs.
Adults (Occupational)	Soil Leaching to Groundwater (RBC_{sw})	No	No	The pathway is not complete since drinking water is supplied by the municipal system.

Contaminant concentrations.
Analytical results from soil samples S1-S3 indicate that gasoline, diesel, and heavy oil were not detected in any of the samples from the former waste oil tank location, at or above the laboratory reporting limit.

For soil vapor samples the laboratory analytical results indicate that several VOCs and Total Petroleum Hydrocarbons (TPH) were detected in samples.

Table 2 shows the soil vapor sample analytical results.

	SG1	*SG2*	*SG3*	*RBC_{SV} (Occupational)*	*RBC_{SV} (Residential)*
Depth bsg (feet)	5	5	5	-	
	Result µg/m3	**Result µg/m3**	**Result µg/m3**	µg/m3	µg/m3
Benzene	**0.674**	**0.511**	**7.86**	52	12
Chloromethane	**1.77**	**1.56**	**1.63**	3,100	1,300
Ethylbenzene	**0.529**	**0.481**	**32.4**	160	37
Trichlorofluoromethane	**1.37**	**1.42**	*ND*	NITI	NITI
2-Propanol	**14.3**	**18.9**	**26.5**	Leak Detection Compound	Leak Detection Compound
Tetrachloroethylene (PCE)	**0.754**	*ND*	*ND*	1,600	360
Toluene	*ND*	**3.92**	**56.1**	730,000	170,000
Trichloroethylene (TCE)	**0.761**	**3.53**	*ND*	100	16
1,2,4-Trimethybenzene	**0.761**	**0.400**	**42.0**	8,800	2,100
1,3,5-Trimethybenzene	*ND*	*ND*	**16.3**	8,800	2,100
Xylenes	**2.55**	**2.34**	**185.7**	15,000	3,500
TPH	*ND*	*ND*	**2,420**	40,000	10,000

The most current RBCs were used for vapor intrusion. The detected concentrations were compared to the DEQ RBCs, and the concentrations are below the Vapor Intrusion into Buildings RBCs for an occupational and residential receptor.

Human health risk.
There is still petroleum contaminated soil below three feet. However, no petroleum was detected in soil samples collected below three feet. The pathway for vapor intrusion into buildings is complete, but the detected vapor concentrations are all below the newly published RBCs which are far more conservative than the previous RBCs. Based on the findings and conclusions discussed above, there is not a potential vapor intrusion risk from the remaining impacted soil that could pose an adverse risk to site occupants or neighboring residents.

Ecological risk.
There is no ecological risk because contaminated soils are only present at a depth greater than three feet, groundwater does not appear to be impacted, and surface water has not been affected.

5. RECOMMENDATION

Following removal of petroleum contaminated soil and based on sample results for soil and soil gas, acceptable risk levels are not exceeded, and a No Further Action determination is recommended for this site. There will be no public comment period because there are no exceedances, no off-site migration, and the responsible party is the owner on record. The No Further Action determination should be recorded in DEQ's underground storage tank database LUST No. 36-97-4028.

6. ADMINISTRATIVE RECORD

Site Assessment Report: LUST ID 36-97-4028, Dave's Shell, 645 N Adams Street, McMinnville Oregon 97128, prepared by Alpha Environmental, dated May 31, 2023 (Revised- 6/30/2023).

Oregon Department of Environmental Quality, File Review Documents, accessed via Public Records Request, 2023.

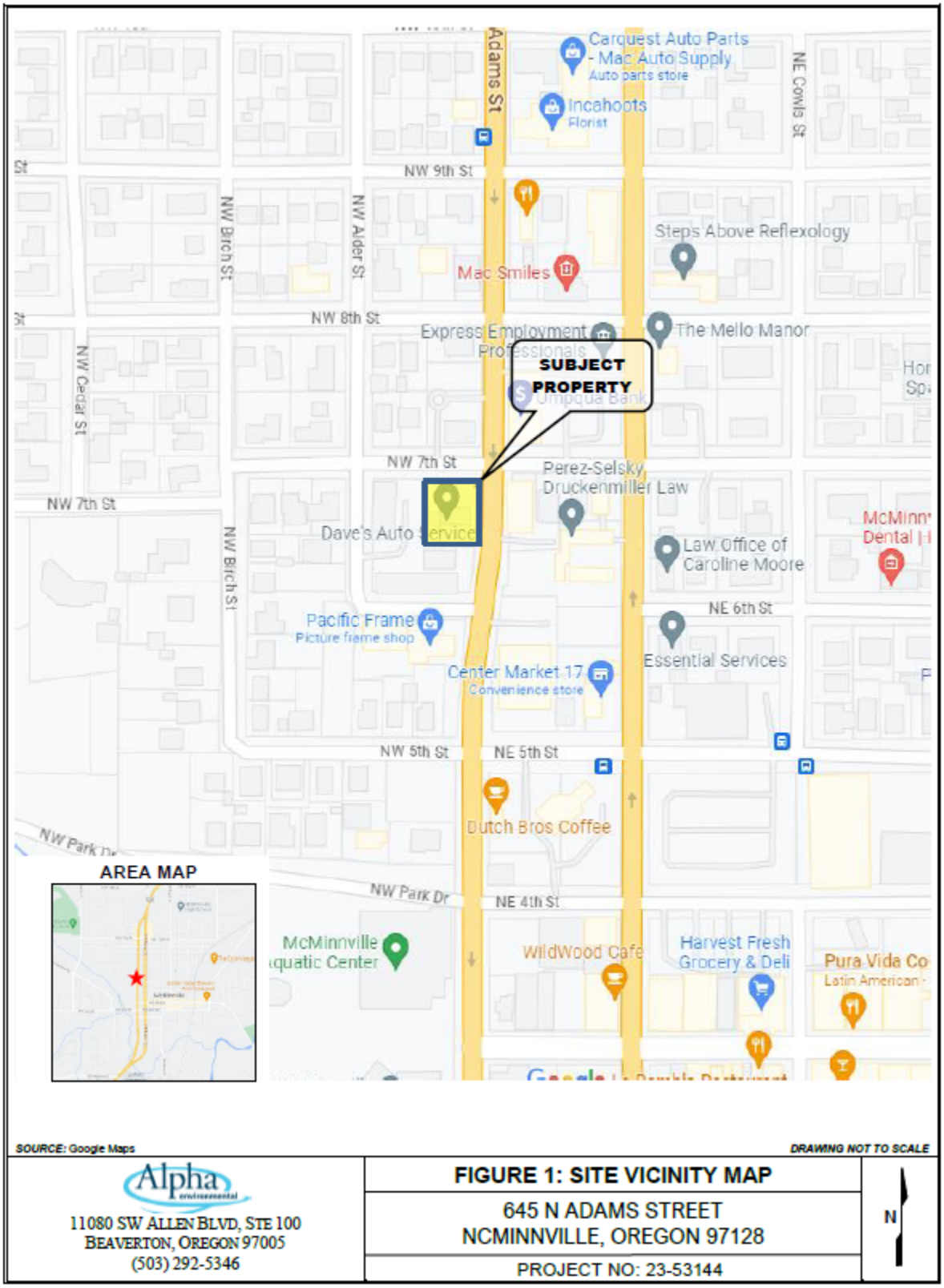
State of Oregon Water Resources Department, Agency Resources, Online Well Log Search and Groundwater Level Data, accessed via website.

United States Geological Survey, 7.5 Minute Topographic Quadrangle of McMinnville, OR, 1986.

Walker, 1991. Geological Map of Oregon, United States Geological Survey, Walker, G.W. and MacLeod, N.S., 1991.

7. ATTACHMENTS

1. Site Vicinity map
2. Site map



Site Vicinity Map. Retrieved from Alpha Environmental Site Assessment Report dated May 31, 2023.

Site Map. Retrieved from Alpha Environmental Site Assessment Report dated May 31, 2023.