PBS | Engineering + Environmental

Site Characterization Report

Yakima Bulk Plant
1 East I Street
Yakima, Washington

Prepared for:
Wondrack Distributing
529 E Kennewick Avenue
Kennewick, Washington 99336

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Project No. 64116.000

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1.0 EXECUTIVE SUMMARY

PBS Engineering and Environmental Inc. (PBS) has prepared this report to present the site characterization findings at the bulk plant located at 1 East I Street in Yakima, Washington (site). The site characterization of the bulk plant focused on assessing the potential presence of petroleum contamination at the site. A combination of hand sampling and the use of a truck-mounted drill rig was used to collect soil samples. PBS attempted to collect a groundwater sample using the drill rig, but was unsuccessful.

The site is currently in use as a bulk plant supplying gasoline, motor oil, diesel, hydraulic oil, and automatic transmission fluid. The storage of these products takes place in aboveground storage tanks (ASTs) in the tank farm and oil shed.

Petroleum-contaminated soil consisting of diesel and motor oil compounds above the State of Washington Model Toxics Control Act (MTCA) Method A cleanup levels (cleanup level) was found in multiple areas of the site: inside the tank farm, the out-of-use tank and drum storage area within the tank farm, and the loading rack. Soil near a waste oil tank inside the tank farm was found to exceed the cleanup levels for the metals cadmium and lead. This soil also exceeded the cleanup level for polyaromatic hydrocarbons (PAHs), which are a group of semi-volatile compounds with many classified as known or probable human carcinogens. Gasoline-range soil contamination was detected during the site characterization, but did not exceed state cleanup levels.

Based on the findings of this investigation, PBS provides the following recommendations:

- Under the MTCA cleanup regulations, the soil contamination that has been detected at the site would likely be considered a release. A release is deemed reportable if it may be a threat to human health or the environment, and it must be reported to Ecology within 90 days of discovery by the owner or operator of a facility. The cleanup regulation lists some examples of situations that should be reported, one of which is at sites where hazardous substances have been leaked or dumped to the ground. It appears that the leakage of petroleum products, primarily oil and diesel, has occurred at this site. However, the interpretation of “threat to human health or the environment” can vary, and the lack of groundwater data is considered a data gap for determining a possible threat.
- Focused soil investigation should be undertaken to delineate the horizontal and vertical extent of contamination. Deeper sampling in the tank farm would allow a more accurate determination of any soil contamination in the vicinity of the ASTs and suspect UST. This would also provide information toward a determination whether monitoring wells are needed. This could include collection of additional data to aid in design of remediation options, if warranted.
- Enrollment into the Voluntary Cleanup Program (VCP) is recommended. An important feature of the program is that it allows owners, through a technical consultation process with Ecology, to apply for and receive a No Further Action (NFA) letter once Ecology has reviewed the assessment and any cleanup documentation and is satisfied that no unacceptable risk remains.
- PBS recommends decommissioning the suspect waste oil tank at the site. Based on the dimensions as estimated during the utility locate, the tank has an approximate capacity of 128 gallons. This exceeds the UST exemption capacity of 110 gallons and indicates the UST is a regulated tank.

- PBS recommends soil sampling under the concrete floor of the oil shed, due to the large amount of petroleum staining observed on the floor.
- PBS recommends that the metal grate noted south of the tank farm be cleaned out to determine if this is a drywell.
- PBS recommends that any suspect asbestos-containing material be tested for asbestos prior to maintenance activities.

2.0 BACKGROUND AND CURRENT USE

The site is located in a commercial area of Yakima, Washington, and has a long history of use as a petroleum bulk plant. The following sections provide a brief description of past and current site usage.

2.1 Site Background

From a review of historical maps, PBS understands that the site was in use as a bulk plant by Standard Oil of California in 1920. The 1920 map showed eight aboveground storage tanks (ASTs) on concrete piers along the north property boundary. This map showed an oil storage area in the southeast corner of the property and several buildings including an office and warehouse. The tanks are shown in the location of the current tank farm. A railroad siding is shown on the west side of the site.

A historical map dated 1952 shows the tanks on concrete piers have been removed and replaced by vertically standing ASTs. These tanks correspond to the present tanks in the tank farm.

2.2 Current Use

PBS understands that in 1976 Wondrack Distributing purchased the site, which continued to be operated as a bulk plant. There are currently 14 ASTs present at the property.

3.0 SITE CHARACTERISTICS

3.1 Site Location and Topography

The site is located at 1 East I Street, Yakima, Washington, in the northeast quarter of Section 13, Township 13 North, Range 18 East of the Willamette Meridian (Figure 1) and is approximately one acre in size.

The site elevation is about 1,088 feet above mean sea level in the northwest corner, decreasing to about 1,086 feet near the loading rack in the south portion of the site.

Adjoining properties include a railroad line to the west. To the south is a commercial structure in use by RS Mechanical. To the north is a large facility occupied by Tri-Valley Construction. To the east is a fast food restaurant.

The Naches River is approximately one mile to the north and the Yakima River is just over one mile to the east. These rivers represent the most substantial surface water in the project vicinity. The Yakima River lies at approximately 1,060 feet above mean sea level and the regional topography generally slopes gently downward to the southeast.

3.2 Site Features

There are 14 ASTs located in the tank farm, which is on the north side of the site and surrounded by a 2-foot-high concrete wall that serves as a secondary containment structure. Inside the tank farm, the ground is covered by crushed gravel fill, an area of concrete and some asphalt. One AST is in use as gasoline storage, and four are in use for diesel storage. Motor oil and hydraulic oil are also stored in the ASTs, and several ASTs were out-of-use at the time of the site characterization. A waste oil tank with a capacity of about 1,000 gallons is located in the southwest corner of the tank farm.

Most of the tanks are numbered on the outside and PBS has referred to several of these tank numbers in Section 6.0. Valves and piping inside the tank farm consisted of uninsulated metal piping; however PBS observed a short section of pipe insulation material that may have contained asbestos near the base of AST #5. This tank was out-of-use at the time of the site characterization.

The northeast side of the gravel yard inside the tank farm is in use for the storage of out-of-use tanks and drums. Metal and poly drums were observed in this area, and some were stored upside down. A former vehicle hoist is located in this storage area; the hoist held empty drums on the exposed metal rack at the time of the site characterization. PBS was informed the hoist was previously in use when vehicle maintenance was performed in the nearby oil shed. The hoist has reportedly been used to help move empty drums and tanks over the secondary containment berm and into the storage area.

PBS observed a suspect underground storage tank (UST) fill pipe in the south-central area of the tank farm. PBS opened the cap and noted the pipe was plugged at a depth of 3 feet. Wondrack staff was unfamiliar with this pipe, and no further information was provided to PBS during the characterization.

At the south-central side of the tank farm is the loading header, an area containing valves and piping that are used to supply fuel into the tanks. These valves are located just outside of the tank farm secondary containment structure.

To the south of the tank farm is the loading rack, where fuel is dispensed to the delivery trucks. Subsurface lines lead to the loading rack from the tank farm. The loading rack is covered by a canopy. The center of the loading rack, where the fuel lines exit the subsurface, has red landscaping rock for surfacing; the east and west sides have concrete surfacing. The loading rack and concrete loading area are surrounded by paving.

On the east side of the site is a metal building called the oil shed. This building contains nine ASTs that hold hydraulic fluid and automatic transmission fluid as well as one AST that contains heating oil. These tanks are located on the concrete floor and oily staining was observed on the floor in numerous areas of the building.

Near the southwest end of the oil shed is a 3-foot by 3-foot concrete sump with a metal grate that collects stormwater from the site. A pipe leads from the sump to two oil-water separators at the south end of the oil shed. The oil-water separators have round concrete lids that are about 3.5 feet and 5 feet in diameter. The lids have metal rings for lifting to provide access to the oil-water separators.

PBS observed a metal grate, measuring about 1 square foot, south of the tank farm in the paved area that was filled with soil. This may be a drywell or other stormwater disposal system. PBS did not collect any additional information on this structure during the site characterization.

Directly to the west of the loading rack is a one-story building in use as a warehouse and office. Much of this building consists of a storage warehouse with a raised concrete dock that is used to load vehicles with petroleum products. Full totes and drums are located within this storage building. An out-of-use railroad spur runs along the west side of the site and ends alongside the warehouse/office. This spur line was likely used to supply petroleum products to the site during

past activities. PBS understands the railroad has never been used by Wondrack Distributing since acquiring the site in 1976.

3.3 Site Geology

The surface geology is mapped by the online Geologic map of Washington (https://fortress.wa.gov/dnr/geology/?Site=wigm) as alluvium deposits of the Quaternary Period. These deposits consist of sand, silt, and gravel and formed as streambed terraces.

The soil sampling conducted during this investigation found that below the fill or paved areas was brown silt up to 5 feet in thickness. This material was homogeneous, contained occasional gravel, and was generally in a moist state. Below the silt was a gray to brown gravel layer that was present across the site and extended to an unknown depth. This deposit consisted of fine to coarse gravel and contained some silt and sand.

3.4 Site Hydrogeology

There are no wells shown on the online Washington State Department of Ecology well log viewer (http://apps.ecy.wa.gov/welllog/textsearch.asp) for the property. There are monitoring wells located at the ARCO station about 200 feet to the southeast of the site and the static water table is noted in the logs at 18 to 20 feet below ground surface (BGS).

Based on overall areal topography, groundwater flow is anticipated to be to the southeast toward the Yakima River.

4.0 PBS SCOPE OF SERVICES

The following is a brief discussion of the scope of services provided by PBS:

1. Queried the Washington State Department of Ecology (Ecology) for any available environmental reports for the site. Ecology reported no reports in their files for the site.
2. Used hand sampling tools to collect shallow soil samples in areas of discolored soil observed at the site and in areas where field indications suggested that contamination might be present.
3. Contracted with a direct-push drilling subcontractor to conduct deeper soil and groundwater sampling.
4. Sent collected samples to an accredited laboratory for analysis.
5. Prepared a site characterization report for this scope of work.

5.0 BULK PLANT SOIL INVESTIGATION METHODS

PBS conducted the soil investigation by collecting samples using a combination of hand sampling and the use of a drill rig. Hand tools were used in areas that were not accessible to a drill rig. The drill rig was used to drill soil borings in accessible areas of the site and at depths below those practical for hand tool sampling. The drill rig was also intended to obtain a groundwater sample, but drilling conditions prevented a sample from being collected.

5.1 Hand Tool Soil Sampling/Field Screening

PBS conducted the hand tool sampling in areas where gravel and soil were exposed at the time of the fieldwork. These included the area inside of the secondary containment of the tank farm and the out-of-use drum storage area, and the former railroad area. All hand tool soil samples were collected within 3 feet or less in depth.

Individual grab samples from the surface were collected by hand using a stainless steel trowel. Sampling personnel wore a new pair of disposable latex-gloves for each sample. The hand tools were decontaminated after each sample was collected. The samples were placed into laboratory-provided glass sample jars and sealed with Teflon-lined lids. All samples were labeled and stored on ice for preservation and shipped to the Friedman and Bruya laboratory in Seattle, Washington, accompanied by chain-of-custody documentation.

Field screening consisted of visual and olfactory observations and soil screening for volatile organic compounds (VOCs) using a portable Mini-RAE 2000 photoionization detector (PID). After sampling, any remaining soil was placed back in the hole and tamped down.

5.2 Drill Rig Sampling

Each soil boring was completed by a truck-mounted direct-push sampling rig operated by ESN Northwest of Olympia, Washington. The rig uses a vibratory hammer to continuously drive a 5-foot PVC liner inside the sample barrel. Soil is recovered in 5-foot-long intervals for field screening and sampling. All recovered soils were field screened visually and for evidence of a fuel odor, and for volatile petroleum compounds using a portable PID. After screening, grab soil samples were collected and placed into laboratory-provided sample jars with Teflon lid liners, sealed, and labeled.

All samples were stored on ice for the duration of the fieldwork. All sampling equipment was decontaminated between borings and after each sample was collected.

After sampling, each boring was backfilled with granular bentonite and hydrated with tap water. The soil borings were in asphalt or concrete; therefore, borings were either topped off with an asphalt or a concrete patch.

5.3 Laboratory Analysis

All soil samples were analyzed for the following:

- All the soil samples were initially analyzed by the Northwest Total Petroleum Hydrocarbons-hydrocarbon identification (NWTPH-HCID) method. NWTPH-HCID laboratory results are reported as “detected” or “not detected.”
- When a hydrocarbon detection occurred above the laboratory reporting limits (RLs) in the diesel- or heavy oil-range, selected samples were quantified by Method Northwest Total Petroleum Hydrocarbons Diesel Extended (NWTPH-Dx). Selected samples were chosen to provide the most useful information of the extent and depth of contamination, and in the most cost effective manner.
- When a hydrocarbon detection occurred above the laboratory reporting limits (RLs) in the gasoline range, the sample was quantified by Method Northwest Total Petroleum Hydrocarbons Gasoline Extended (NWTPH-Gx). The sample was also quantified by analysis for common gasoline constituent’s benzene, toluene, ethylbenzene, and xylenes (BTEX) by Method 8021B.

Given the volume of samples, not every HCID detection was analyzed by Method NWTPH-Dx. The laboratory provided estimates for samples that were not quantified by the Dx method. Samples estimated under the HCID method are designated with an “*E*” in the diesel and motor oil columns. These estimated concentrations provide useful information in assessing the horizontal and vertical extent of soil contamination.

One sample was selected for additional analysis to assess if other contaminants of concern (listed below) were present:

- Five metals (arsenic, cadmium, chromium, lead, mercury) by EPA Method 200.8
- Polychlorinated biphenyls (PCBs) by EPA Method 8082A
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270D SIM
- VOCs by EPA Method 8260C

The results of the soil analyses were compared to the MTCA Method A soil cleanup levels for unrestricted land use. The MTCA Method A cleanup levels are presented in Washington Administrative Code (WAC) 173-340, which includes common contaminants of concern presented in a table of cleanup levels. The soil sample data and relevant MTCA Method A cleanup levels for the potential contaminants of concern are presented in the following tables.

6.0 BULK PLANT SOIL INVESTIGATION RESULTS

The following sections detail the sample locations and analytical results of the site characterization. The data are presented by current and/or former operational area. PBS generally was able to use hand tools to sample within 3 feet of the surface, and in areas not accessible to the drill rig. All laboratory data is included in Appendix A. Drill rig boring logs are presented in Appendix B. Figures 2 and 3 illustrate the sample locations provided in the tables below.

6.1 Tank Farm

Due to the secondary containment structure, getting inside the tank farm was not possible for the drill rig. PBS used hand tools to collect samples within this area. Sample locations, depths, and results are presented in Tables 1, 3, and 4.

Borings B2 and B7 were drilled directly south of the tank farm, and within 6 to 12 feet of the loading header system of valves and piping used for product loading. The boring locations along with the samples and results are presented in Table 2.

Table 1: Tank Farm and Drum Storage Area Surface Samples
Total Petroleum Hydrocarbon Soil Sample Results

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	PID	Hydrocarbon Identification			Diesel	Motor Oil
			Gasoline	Diesel	Heavy Oil		
S1	NE corner of oil shed, under three 3-inch aboveground pipes / 0'–0.5'	**0**	**<20**	**<50**	**D**	NA	**2,600 *E***
S2	NE corner of oil shed, under three 3-inch aboveground pipes / 0.5'–0.75'	0	<20	<50	D	NA	590 E
S3	At base of overturned drums in blackish stained soil / 0'–0.4'	12	<20	<50	D	2,100x	**11,000**

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	PID	Hydrocarbon Identification			Diesel	Motor Oil
			Gasoline	Diesel	Heavy Oil		
S4	At base of overturned drums in blackish stained soil / 0.4'–0.8'	22	<20	<50	D	270x	1,100
S5	In open area north of empty drums / 0'–0.5'	0	<20	<50	D	NA	600 *E*
S6	In open area north of empty drums / 0.5'–1.0'	0	<20	<50	<250	NA	NA
S7	Under green valve at AST #10 / 0'–0.5'	0	<20	D	D	390x *E*	470 *E*
S8	Under green valve at AST #10 / 0.5'–1.0'	0	<20	D	D	550x	1,100
S9	Directly under 3 flanged-off pipes in SW corner of tank farm / 0'–0.25'	0	<20	<50	D	NA	**6,700 *E***
S29	1' N of waste oil tank concrete containment in black stained soil / 0.5'–1.0'	1	ND	D	D	**7,300 *E***	**7,400 *E***
S30	1' N of waste oil tank concrete containment in black stained soil / 1.5'–2.0'	1.5	<20	D	D	**3,200**	**5,000**
S31	In broken asphalt just south of AST #5 valve /1.0'–1.5'	0	<20	D	D	**3,300 *E***	**2,100 *E***
S32	Under red valve AST #7 / 0.25'–0.5'	0	<20	D	D	**2,400 *E***	1,200 *E*
S33	Under green and white valve AST #2 / 0'–0.5'	0	<20	D	D	**2,100 *E***	510 *E*
S34	Under red valve AST #3 / 0'–0.5'	0	<20	D	ND	320 *E*	NA
S35	Under faded red valve AST #4 / 0'–0.5'	0	<20	D	ND	90 *E*	NA

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	PID	Hydrocarbon Identification			Diesel	Motor Oil
			Gasoline	Diesel	Heavy Oil		
S36	In NW corner of tank farm near out-of-use pipes and black stained soil / 0'–0.5'	1	<20	D	D	**52,000**	**5,300**
S37	In NW corner of tank farm near out-of-use pipes and black stained soil / 2.5'–2.75'	1	<20	D	<250	530	<250
MTCA Method A Cleanup Levels						2,000	2,000

Notes: All results, lab reporting limits and MTCA Cleanup Levels are in milligrams per kilogram (mg/kg)
bgs = below ground surface
D: Indicates a qualitative detection of a petroleum hydrocarbon
PID = Photoionization detector measurement in parts per million
Bold results exceed MTCA Method A Cleanup Levels
< = Below laboratory method reporting limits
NA = Not Analyzed due to no HCID detection
E =Estimated Concentration
x = laboratory data qualifier, the sample chromatograph pattern does not resemble the fuel standard used for quantitation

Table 2: Tank Farm Drilled Soil Borings
Total Petroleum Hydrocarbon Soil Sample Results

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	PID	Hydrocarbon Identification			Diesel	Motor Oil
			Gasoline	Diesel	Heavy Oil		
S14	B2, 12' S of tank farm and loading header / 4.5'–5'	2*	<20	<50	<250	NA	NA
S18	B7, 6.5' S of tank farm and loading header / 4'–4.5'	0	<20	<50	<250	NA	NA
MTCA Method A Cleanup Levels						2,000	2,000

Notes: All results, lab reporting limits and MTCA Cleanup Levels are in milligrams per kilogram (mg/kg)
bgs = below ground surface
PID = Photoionization detector measurement in parts per million
< = Below laboratory method reporting limits
* = Reading likely due to fuel being transferred by nearby tanker truck during drilling
NA = Not Analyzed due to no HCID detection

Table 3: Stained Soil at Waste Oil Tank - MTCA 5 Metals Results

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	Arsenic	Cadmium	Chromium	Lead	Mercury
S29	1' N of waste oil tank concrete containment in black stained soil / 0.5'–1.0'	8.00	**2.35**	5.91	**332**	<1
MTCA Method A Cleanup Levels		20	2	19/2,000*	250	2

Notes: All results, laboratory reporting limits and MTCA Cleanup Levels are in milligrams per kilogram (mg/kg)
bgs = below ground surface
< = below laboratory method reporting limit
* Chromium VI = 19 mg/kg Chromium III = 2,000 mg/kg
Bold results exceed MTCA Method A Cleanup Levels

Table 4: Stained Soil at Waste Oil Tank - Selected PAH Results

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	Benzo(a)pyrene			Benzo(b)fluoranthene			Naphthalene
		Soil Conc.	TEF	TEF Soil Conc.	Soil Conc.	TEF	TEF Soil Conc.	
S30	1' N of waste oil tank concrete containment in black stained soil / 1.5'–2.0'	0.10	1	0.10	0.11	0.1	0.01	0.12
Total PAH Concentration (Sum of TEF Soil Concentrations)		**0.11**						NA
MTCA Method A Cleanup Levels		0.1*						5**

Notes: All results and laboratory reporting limits are in milligrams per kilogram (mg/kg)
bgs = below ground surface
< = below laboratory method reporting limit
TEF = Toxicity Equivalency Factor (unitless)
NA = Not Applicable
* This cleanup level includes benzo(a)pyrene and the six carcinogenic PAHs listed in WAC 173-340-900
** Includes naphthalene and 1, and 2-methylnaphthalene
Bold results exceed MTCA Method A Cleanup Levels

Findings

Figure 2 shows the sample locations and the soil contamination detected by the sampling and borings done in this area. Multiple areas of dark discolored soil were observed in the tank farm. The deepest hand sampling that took place in the tank farm was 2.75 feet bgs, where increasing gravel made deeper sampling difficult.

Inside the tank farm, samples S1 and S2 were collected under three aboveground pipes near the northwest corner of the oil shed. Sample S1 had an estimated motor oil concentration that exceeded the cleanup level. Sample S2 was collected below S1 and had an estimated motor oil

concentration that did not exceed the cleanup level, indicating a decrease in soil contamination with depth.

Samples S3 through S6 were collected on the east end of the tank farm and near the out-of-use tanks and drums. Sample S3 and S4 were collected from dark-stained soil and S3 exceeded the cleanup level. Sample S4 was collected directly under S3 and did not exceed the cleanup level, indicating a decrease in soil contamination at depth.

PBS collected soil samples under five AST valves, designated S7 and S8 and S32–S35. All five samples had petroleum hydrocarbons above the HCID RLs, and samples S32 and S33 were found to exceed the cleanup levels.

Sample S9 was collected directly under three flanged-off valves in the southwest corner of the tank farm. These lines were out-of-use and may have been associated with fuel handling during past railroad activities. This sample had a motor oil concentration that exceeded the cleanup level.

Samples S36 and S37 were collected near out-of-use piping and in visibly black-stained soil in the northwest corner of the tank farm. Sample S36 exceeded the cleanup level, whereas the deeper sample S37 did not.

PBS collected two samples, S29 and S30, from a single location in dark-stained soil on the north side of the waste oil tank. Both samples contained diesel and motor oil compounds above the cleanup level. Soil contamination in the deeper sample, S30, was at a depth of 2 feet.

Sample S29 was also analyzed for the five metals regulated by the Method A cleanup levels: arsenic, cadmium, chromium, lead, and mercury. Sample results are presented in Table 3. This sample exceeded the cleanup level for cadmium and lead.

Sample S30 was analyzed for PCBs. PCBs can be present in waste oils and are reported as Aroclor compounds, with each specific compound containing a different percentage of chlorine by mass in the overall compound. One Aroclor was reported to have a concentration of 0.37 mg/kg. The other eight Aroclors were reported as below the RLs for this sample. The MTCA Method A cleanup level for all reported Aroclors is 1.0 mg/kg; therefore this sample does not exceed the cleanup level. Please see the laboratory report for the data.

Sample S30 was analyzed for polyaromatic hydrocarbons (PAHs), which are a group of semi-volatile compounds with many classified as known or probable human carcinogens. This sample was selected for PAH analysis due to the high diesel- and motor oil-range hydrocarbons detected. The only regulated PAH in the MTCA Method A Soil Cleanup level is benzo(a)pyrene; this and six other PAHs are identified as carcinogenic.

When establishing cleanup levels for PAHs under MTCA, the laboratory-reported total of the seven carcinogenic PAHs is calculated and compared to the Method A cleanup level for benzo(a)pyrene. A toxicity equivalency factor (TEF) is first applied to the PAHs; the TEF is an estimate of the relative toxicity of each of the six PAHs as compared to benzo(a)pyrene. After the TEF is calculated for each PAH, the concentrations are summed and compared to the MTCA Method A cleanup level of 0.1 mg/kg for benzo(a)pyrene.

As shown in Table 4, benzo(a)pyrene was detected at a concentration of 0.1 mg/kg, which equals the cleanup level. Benzo(a)fluoranthere is a carcinogenic PAH and was detected at a concentration of 0.11 mg/kg, and has a TEF of 0.1. When the concentration is multiplied by the TEF, this results in a concentration of 0.01 mg/kg. When added to the benzo(a)pyrene result of 0.1 mg/kg, this results in a total carcinogenic PAH concentration of 0.11 mg/kg, which does exceed the cleanup level.

6.2 Loading Rack and Subsurface Fuel Lines

The loading rack is located south of the tank farm and within a paved area. The loading area below the canopy is concrete. Borings B8–B11 were drilled around the loading rack and through the concrete. Three hand samples were collected in the subsurface soil in the area where the subsurface lines exit the ground.

Borings B3 and B4 were drilled north of the loading rack, and in the vicinity of the subsurface fuel lines from the tank farm. Both the soil boring samples and the samples collected with hand tools are presented in Table 5.

Table 5: Loading Rack and Subsurface Fuel Lines - Drilled Soil Borings and Surface Samples
Total Petroleum Hydrocarbon Soil Sample Results

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	PID	Hydrocarbon Identification			Diesel	Motor Oil
			Gasoline	Diesel	Heavy Oil		
S13	B3 North of loading rack / 1.5'–2'	0	<20	<50	<250	NA	NA
S14	B4 North of loading rack / 2'–2.5'	0	<20	<50	<250	NA	NA
S19	B8 SE side of loading rack / 1'–1.5'	0	<20	<50	<250	NA	NA
S20	B9 NE side of loading rack / 4'–4.5'	0	<20	<50	<250	NA	NA
S21	B9 NE side of loading rack / 9'–9.5'	0	<20	<50	<250	NA	NA
S22	B10 NW side of loading rack / 4'–4.5'	0	<20	<50	<250	NA	NA
S23	B11 SW side of loading rack / 1'–2'	0	<20	<50	<250	NA	NA

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	PID	Hydrocarbon Identification			Diesel	Motor Oil
			Gasoline	Diesel	Heavy Oil		
S26	NW side of loading rack / 0.5'–1.0'	1	<20	D	D	**15,000**	980
S27	NW side of loading rack / 1.5'–2'	0.1	<20	D	ND	160 *E*	NA
S28	Approximate center of loading rack / 0.3'-0.6'	1	<20	D	D	**10,000 *E***	1,500 *E*
MTCA Method A Cleanup Levels						2,000	2,000

Notes: All results and laboratory reporting limits are in milligrams per kilogram (mg/kg)
bgs = below ground surface
D: Indicates a qualitative detection of a petroleum hydrocarbon
PID = Photoionization detector measurement in parts per million
Bold results exceed MTCA Method A Cleanup Levels
< = Below laboratory method reporting limits
NA = Not Analyzed due to no HCID detection
E =Estimated Concentration

Findings
Two borings designated as B11 and B8 were drilled on the southwest and southeast sides of the loading rack, respectively, and borings B9 and B10 were drilled on the northeast and northwest sides of the loading rack, respectively. The deepest sample collected in this area was sample S21 from boring B9, which was collected at a depth of 9–9.5 feet. None of the samples from the borings exceeded the laboratory HCID RLs.

As part of the loading rack investigation, PBS collected a sample below the red landscaping rock in the center of the rack, in an area of stained soil where the subsurface pipes exit the ground. Sample S28 was collected with hand tools at a depth of 0.3–0.6 feet. This sample exceeded the cleanup level.

Samples S26 and S27 were collected from the northwest side of the loading rack, below the red landscape rock and in an area of stained soil. Sample S26 exceeded the cleanup level, whereas the deeper sample S27 did not. This indicates a decrease in soil contamination at depth.

6.3 Oil Shed
The east side of the oil shed is paved and no hand samples were collected in this area. Two soil borings were drilled along the east side of the oil shed. The boring information along with the samples and results are presented in Table 6.

Table 6: Oil Shed Drilled Soil Borings
Total Petroleum Hydrocarbon Soil Sample Results

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	PID	Hydrocarbon Identification			Diesel	Motor Oil
			Gasoline	Diesel	Heavy Oil		
S10	B1 3.5' west of three valves along west side and near center of oil shed / 4'–4.5'	0	<20	<50	<250	NA	NA
S15	B5 Near NW corner of oil shed / 3'–3.5'	0	<20	<50	<250	NA	NA
S16	B5 Near NW corner of oil shed / 6'–6.5'	0	<20	<50	<250	NA	NA
MTCA Method A Cleanup Levels						2,000	2,000

Notes: All results and laboratory reporting limits are in milligrams per kilogram (mg/kg)
bgs = below ground surface
PID = Photoionization detector measurement in parts per million
< = Below laboratory method reporting limits
NA = Not Analyzed due to no HCID detection

Findings
None of the soil samples exceeded the respective laboratory HCID RLs.

6.4 Former Railroad Area

Out-of-use valves and piping are visible along the west side of the warehouse, and appear to have been used for fuel unloading during past use of the railroad. PBS collected hand samples at two locations of out-of-use valves in this area; no soil borings were drilled. Sample locations, depths, and results are presented in the following tables.

Table 7: Former Railroad Area Surface Samples
Total Petroleum Hydrocarbon Soil Sample Results

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	PID	Hydrocarbon Identification			Gasoline	Diesel	Motor Oil
			Gasoline	Diesel	Heavy Oil			
S40	West side of warehouse near out-of-use valves / 0'–0.5'	0	D	<50	<250	<2	NA	NA
S41 (DUP)	West side of warehouse near out-of-use valves / 0'–0.5'	0	D	<50	<250	NA	NA	NA

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	PID	Hydrocarbon Identification			Gasoline	Diesel	Motor Oil
			Gasoline	Diesel	Heavy Oil			
S42	West side of warehouse near out-of-use valves / 0'–0.5'	0	<20	D	<250	NA	290 *E*	310
S43	West side of warehouse near out-of-use valves / 0.5'–1.0'	0	<20	D	<250	NA	99 *E*	NA
MTCA Method A Cleanup Levels						30/100*	2,000	2,000

Notes: All results and laboratory reporting limits are in milligrams per kilogram (mg/kg)
bgs = below ground surface
D: Indicates a qualitative detection of a petroleum hydrocarbon
PID = Photoionization detector measurement in parts per million
< = Below laboratory method reporting limits
NA = Not Analyzed due to no HCID detection
* = 100 milligrams per kilogram without benzene
E =Estimated Concentration

Table 8: Former Railroad Area Surface Samples
BTEX Soil Sample Results

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	PID	Benzene	Toluene	Ethylbenzene	Xylenes
S40	West side of warehouse near out-of-use valves / 0'–0.5'	0	<0.02	<0.02	<0.02	<0.06
MTCA Method A Cleanup Levels			0.03	7	6	9

Notes: All results and laboratory reporting limits are in milligrams per kilogram (mg/kg)
bgs = below ground surface
PID = Photoionization detector measurement in parts per million
< = Below laboratory method reporting limits

Findings
Sample S40 had a detection of gasoline-range compounds; this was the only sample at the site that had a gasoline detection. This sample was then analyzed by NWTPH-Gx and BTEX, and the concentrations did not exceed the gasoline-range or BTEX laboratory RLs.

Samples S42 and S43 had diesel-range compound detections. Follow-up analysis found that neither sample exceeded the cleanup level.

6.5 Suspect Out-Of-Use Waste Oil Tank

During the private utility locate, a suspect underground storage tank was located in the paved area west of the oil shed. The private locate noted a metal object at a depth of 2.8 feet, with a

length of 3.5 feet and diameter of 2.5 feet. A suspect metal fill pipe cover was observed in a concrete casing within the overall paving and is located at the surface above this suspect tank; however, no fill pipe was observed.

PBS was informed that vehicle maintenance had formerly taken place in the north portion of the building. The location of the suspect UST was west of the oil shed about 60 feet. This tank may have served as a waste oil tank during past operations.

PBS drilled one soil boring near this suspected tank, with sample information and results presented in Table 9.

Table 9: Suspect Waste Oil Tank Drilled Soil Boring
Total Petroleum Hydrocarbon Soil Sample Results

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	PID	Hydrocarbon Identification			Diesel	Motor Oil
			Gasoline	Diesel	Heavy Oil		
S25	B13 In asphalt 3' S of suspect underground tank / 5'–10'	0	<20	<50	<250	NA	NA
MTCA Method A Cleanup Levels						2,000	2,000

Notes: All results and laboratory reporting limits are in milligrams per kilogram (mg/kg)
bgs = below ground surface
D: Indicates a qualitative detection of a petroleum hydrocarbon
PID = Photoionization detector measurement in parts per million
< = Below laboratory method reporting limits
NA = Not Analyzed due to no HCID detection

Findings
This sample did not exceed the respective laboratory HCID RLs.

6.6 East Side of Warehouse Investigation

PBS collected a shallow surface sample at the base of the raised loading area between the concrete dock and asphalt on the east side of the warehouse. PBS then used the direct-push rig to drill at the base of the concrete dock to advance one soil boring about 25 feet south of the surface sample location as part of the overall site investigation.

PBS had sample S17 from the soil boring analyzed for lead and arsenic due to the widespread occurrence of these metals throughout Yakima County. The presence of these metals is generally due to former orchard operations that preceded most development in this area. This sample was also analyzed for VOCs as a screening sample if methanol or other solvents had spilled into the soil from the dock area.

Table 10: East Side of Warehouse Drilled and Surface Samples
Total Petroleum Hydrocarbon Soil Sample Results

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	PID	Hydrocarbon Identification			Diesel	Motor Oil
			Gasoline	Diesel	Heavy Oil		
S38	S side of loading dock / 0'–0.5'	0	<20	<50	D	NA	310 *E*
S17	B6 At base of warehouse loading area / 2'–2.5'	0	<20	<50	<250	NA	NA
MTCA Method A Cleanup Levels						2,000	2,000

Notes: All results and laboratory reporting limits are in milligrams per kilogram (mg/kg)
bgs = below ground surface
PID = Photoionization detector measurement in parts per million
< = Below laboratory method reporting limits
D: Indicates a qualitative detection of a petroleum hydrocarbon
E =Estimated Concentration

Table 11: Arsenic and Lead Metals Results

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	Arsenic	Lead
S17	B6 At base of warehouse loading area / 2'–2.5'	2.62	4.56
MTCA Method A Cleanup Levels		20	250

Notes: All results, laboratory reporting limits and MTCA Cleanup Levels are in milligrams per kilogram (mg/kg)
bgs = below ground surface

Findings
Sample S38 had a detection of heavy oil that did not exceed the cleanup level. Sample S17 did not exceed the HCID RLs and the concentrations of arsenic and lead did not exceed the respective cleanup levels. No VOCs were detected in this sample.

6.7 Former Oil Storage Area

The historical 1920 map showed an oil storage area in the southeast corner of the site. This area is currently an open area south of the oil shed where two oil-water separators are located, as discussed in the next section. This area is topographically low and PBS drilled one soil boring in this area. PBS also attempted to collect a groundwater sample from this boring, but was unsuccessful.

Table 12: Former Oil Storage Area Drilled Samples
Total Petroleum Hydrocarbon Soil Sample Results

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	PID	Hydrocarbon Identification			Diesel	Motor Oil
			Gasoline	Diesel	Heavy Oil		
S24	B12 In asphalt 9.5' S of oil shed / 5'–5.5'	0	<20	<50	<250	NA	NA
MTCA Method A Cleanup Levels						2,000	2,000

Notes: All results and laboratory reporting limits are in milligrams per kilogram (mg/kg)
bgs = below ground surface
PID = Photoionization detector measurement in parts per million
< = Below laboratory method reporting limits
NA = Not Analyzed due to no HCID detection

Findings
This sample did not exceed the respective laboratory HCID RLs.

6.8 Stormwater Drain System and Oil-Water Separators

The presence of a stormwater collection drain in the southeast portion of the site was mentioned in Section 3.0. Stormwater from the east side of the site enters the sump and is then gravity piped to two oil-water separators. PBS understands the concrete lids were lifted by a forklift four to five years ago and the oil-water separators cleaned out. Wondrack staff did not know if the oil-water separators tie into the City of Yakima sewage system.

PBS collected a sludge sample from the stormwater sump and submitted it for analysis.

Table 12: Stormwater Sump Sludge Sample
Total Petroleum Hydrocarbon Soil Sample Results

Sample ID	Location / Approximate Sample Depth (' = feet bgs)	Hydrocarbon Identification			Diesel	Motor Oil
		Gasoline	Diesel	Heavy Oil		
S39	Collected from sludge inside sump / 1'–3'	<20	D	D	**15,000**	**31,000**
MTCA Method A Cleanup Levels					2,000	2,000

Notes: All results and laboratory reporting limits are in milligrams per kilogram (mg/kg)
bgs = below ground surface
PID = Photoionization detector measurement in parts per million
< = Below laboratory method reporting limits
D: Indicates a qualitative detection of a petroleum hydrocarbon
Bold results exceed MTCA Method A Cleanup Levels

Findings
Sludge inside the stormwater sump was noted to exceed the cleanup levels; however, this material is contained within the concrete sump. The sump is concrete and had a solid bottom, and the presence of standing water indicates the bottom is intact. Discharge from the oil-water separators was not determined as part of this characterization.

7.0 CONCLUSIONS/RECOMMENDATIONS

The purpose of the site characterization was to investigate the contamination status of soil and groundwater at the site. Based on drill rig refusal, no groundwater sampling was conducted. PBS collected soil samples in areas of visibly stained soil or in areas of suspected petroleum contamination. The site characterization findings confirm that areas of petroleum contamination in soil exist that exceed cleanup levels. This assessment was intended as an initial characterization of the site and should not be considered as a comprehensive delineation of on-site contamination.

As noted previously, a groundwater sample could not be collected due to difficult drilling conditions. With regard to the site characterization of the site, PBS presents the following conclusions for unsaturated soil:

- Diesel- and/or motor oil-range compounds are present in soil at the tank farm, the out-of-use tank and drum storage area, and the loading rack at concentrations that exceed the MTCA Method A cleanup levels.
- Much but not all of the soil contamination is associated with dark-stained soil at the surface. However sampling by hand tools was limited to about the upper 3 feet from the surface, and deeper sampling within the tank farm was not possible due to drill rig access limitations.
- PBS has confirmed the presence of the metals cadmium and lead in soil near the waste oil tank that exceed the MTCA Method A cleanup level. PAHs were also found the exceed the cleanup level.

RECOMMENDATIONS

Based on the findings of this investigation, PBS provides the following recommendations:

- Under the MTCA cleanup regulations, the soil contamination that has been detected at the site would likely be considered a release. A release is deemed reportable if it may be a threat to human health or the environment, and it must be reported to Ecology within 90 days of discovery by the owner or operator of a facility. The cleanup regulation lists some examples of situations that should be reported, one of which is at sites where hazardous substances have been leaked or dumped to the ground. It appears that the leakage of petroleum products, primarily oil and diesel, has occurred at this site. However, the interpretation of “threat to human health or the environment” can vary, and the lack of groundwater data is considered a data gap for determining a possible threat.
- Focused soil investigation should be undertaken to delineate the horizontal and vertical extent of contamination. Deeper sampling in the tank farm would allow a more accurate determination of any soil contamination in the vicinity of the ASTs and suspect UST. This would also provide information in aiding a determination if monitoring wells are needed. This could include collection of additional data to aid in design of remediation options, if warranted.

- Enrollment into the Voluntary Cleanup Program (VCP) is recommended. An important feature of the program is that it allows owners, through a technical consultation process with Ecology, to apply for and receive a No Further Action (NFA) letter once Ecology has reviewed the assessment and any cleanup documentation and is satisfied that no unacceptable risk remains.
- PBS recommends decommissioning the suspect waste oil tank at the site. Based on the dimensions as estimated during the utility locate, the tank has an approximate capacity of 128 gallons. This exceeds the UST exemption capacity of 110 gallons and indicates the UST is a regulated tank.
- PBS recommends soil sampling under the concrete floor of the oil shed, due to the large amount of petroleum staining observed on the floor.
- PBS recommends that the metal grate noted south of the tank farm be cleaned out to determine if this is a drywell.
- PBS recommends that any suspect asbestos-containing material be tested for asbestos prior to maintenance activities

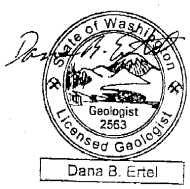
PBS recommends that Wondrack Distributing keep this report as a permanent record of the site characterization that took place at the site. It should be submitted to Ecology if the site is enrolled in the VCP.

8.0 LIMITATIONS

PBS has prepared this report for use by Wondrack Distributing and is not intended for use by others without the written consent of PBS. The site as a whole may have other contamination that was not characterized by this study. The findings and conclusions of this report are not scientific certainties, but rather probabilities based on professional judgment concerning the significance of the data gathered during the course of this investigation. PBS is not able to represent that the site or adjoining land contain no hazardous waste, oil or other latent conditions beyond that detected or observed by PBS.

9.0 SIGNATURES

PBS Engineering and Environmental Inc.



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