Remedial Investigation/Feasibility Study

Report Version: FINAL

Site Name:	Own A Car (former Hahn Motors Company)
Site Address:	1201 S. 1st Street Yakima, Washington 98901
Alternate Location Info:	Parcel Number: 191330-13032

Facility Site ID No. 502
Cleanup Site ID No. 4927
VCP Project No. CE0529

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Date: October 11, 2024

Brent N. Bergeron

Expires 1/3/25

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ACRONYMS AND ABBREVIATIONS

ACC	ACC Environmental Consultants
AEC	Anderson Environmental Contractors
ASI	Additional Subsurface Investigation
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
(cis) 1,2-DCE	(cis) 1,2-dichloroethene
CSM	Conceptual Site Model
COCs	contaminants of concern
CUL	cleanup level
Ecology	State of Washington Department of Ecology
EPA	Environmental Protection Agency
ESA	environmental site assessment
FS	Feasibility Study
mg/Kg	milligrams per Kilogram
µg/Kg	micrograms per Kilogram
µg/L	micrograms per Liter
mg/L	milligrams per Liter
LHG	licensed hydrogeologist (State of Washington)
MRL	minimum reporting limit
MTCA	Model Toxics Control Act
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PCS	petroleum-contaminated soil
POC	point of compliance
PPA	Preliminary Planning Assessment
PQLs	practical quantitation limits
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
SI	Subsurface Investigation
TPH	total petroleum hydrocarbons

TPH-D	total petroleum hydrocarbons – diesel range
TPH-O	total petroleum hydrocarbons -heavy oil range
TCE	trichloroethene
USTs	underground storage tanks
VC	vinyl chloride
VI	vapor intrusion
VIA	vapor intrusion assessment
VOCs	volatile organic compounds
WAC	Washington Administrative Code
YRRA	Yakima Railroad Area

1.0 EXECUTIVE SUMMARY

This Remedial Investigation/Feasibility Report (RI/FS) report for the Own A Car (Former Hahn Motors Company) located at 1201 South 1st Street in Yakima, Washington (Site), was prepared by Blue Mountain Environmental & Consulting Company, Inc. (BMEC) on behalf of the Mustang 64.5 LLC Estate and the State of Washington Department of Ecology (Ecology). The 1.5-acre Site is located in the City of Yakima, Washington within Section 30, Township: 13 North, Range: 19 East, Willamette Meridian.

The existing facility was built in 1946 by Hahn Motors Company. A 2,000-gallon heating oil underground storage tank (UST) for the oil-fired boiler was installed in the northwest side of the building's basement to provide heat for the facility. A second 2,000-gallon UST was installed at the facility in the mid-1970's and both USTs were used to store used oil after the boiler was converted to burn used motor oil, which was plentiful and available from the on-site conducted car services.

It was determined by Ecology on July 9, 2007, and documented via certified mail dated July 26, 2007, that Hahn Motors Company was in Non-Compliance with the Underground Storage Tank Regulations Chapter 173-360 for not properly registering and upgrading their 2,000-gallon USTs prior to storage of waste oil. Via directive from Ecology as defined in the July 26, 2007 certified mail, both USTs were decommissioned by removal and backfill in November 2007. Approximately 50 cubic yards of petroleum-contaminated soil (PCS) and asphalt were hauled off-site and disposed of at the Anderson Disposal Facility in Yakima, Washington.

During the November 9, 2007, UST decommissioning activities, three soil samples were collected from the west, north, and east side of the eastern UST, yielding one heavy oil detection of 396 milligrams per Kilogram (mg/Kg) in the west sample. Similarly, three soil samples were collected from the west, north, and east side of the eastern UST, yielding heavy oil detections ranging between 155 – 492 mg/Kg. The MTCA Method A Cleanup Level (CUL) for heavy oil is 2,000 mg/Kg. No gasoline range hydrocarbons were identified by laboratory analysis in any soil samples collected. Significant lead concentrations were detected in residual soil sampled and analyzed from beneath the tank bottom(s).

On February 23, 2016, Ecology issued a Further Action letter to Richard Hahn of the Hahn Motors Company stating that "further remedial action is necessary to clean up contamination at the Site." This further remedial action was to be performed in the assessment of potential contamination in soil and groundwater resulting from "Waste oil and associated chemicals released from Underground Storage Tanks (USTs) into soil and groundwater" to the north of the main building, as well as "petroleum products and other chemicals released from interior sumps to soil and groundwater". The USTs were property investigated by BMEC in February 2022 and the interior sump effluent concern was investigated in February 2022 by BMEC and remediated via excavation and confirmation soil sampling in July 2022 by BMEC and subcontractors.

In 2017, Ecology conducted semi-annual groundwater sampling of the Yakima Railroad Area (YRRA) groundwater monitoring network which is a six-square mile area located along the railroad corridor in the cities of Yakima and Union Gap, Washington. The YRRA was defined in 1991. The Site is located near the center of the YRRA which is impacted by chlorinated solvents, primarily tetrachloroethene (PCE). Circa 2017, 15 of the 39 groundwater samples collected from wells within the YRRA yielded concentrations ranging

from 5 to 9,110 micrograms per liter (µg/L). The MTCA Method A CUL for PCE in groundwater is 5 µg/L.

On February 1, 2022, BMEC supervised the advancement of six soil borings to depths varying between 15 feet and 25 feet below ground surface (bgs). TPH-D + TPH-O in soil and grab groundwater samples exceeded the MTCA Method A CULs of 2000 mg/Kg and 500 µg/L, respectively. VOCs were not detected in soil but were detected in grab groundwater samples (including PCE) at concentrations less than MTCA Method A CULs. Heavy metals (i.e., arsenic, cadmium, chromium, and lead) were detected in soil and grab groundwater samples at concentrations exceeding the MTCA Method A CULs. Polynuclear aromatic hydrocarbons (PAHs) did not exceed any MTCA Method A CULs in soil and grab groundwater samples. Polychlorinated biphenyls (PCBs) were not detected above the MTCA Method A CULs in soil or groundwater.

From July 12 – 14, 2022, BMEC supervised the removal of both dry wells south of the main onsite building and collected 10 confirmation soil samples in the process. Confirmation samples indicated no contaminants (i.e., benzene, toluene, ethylbenzene, and xylenes [BTEX]; TPH-D; TPH-O; TPH-G; arsenic; cadmium; chromium; and lead) above Ecology MTCA Method A CULs.

On September 27 and 28, 2022, BMEC supervised the advancement of six soil borings (MW1 through MW6) to depths of 25 feet bgs via terra sonic drilling. TPH-Dx was performed on 12 soil samples. TPH-D + TPH-O did not exceed the MTCA Method A CUL of 2000 mg/Kg in any of the 12 soil samples. TPH-G was not detected in any of the 12 soil samples. VOCs (i.e., BTEX plus naphthalene) were not detected in any of the 12 soil samples. Resource Conservation and Recovery Act (RCRA) metals (i.e., arsenic, cadmium, chromium, lead, and mercury) did not exceed their respective MTCA Method A CULs.

On October 3, 2022, BMEC returned to the Site to conduct a groundwater sampling event (GWSE) involving all six monitoring wells (MW1 through MW6). TPH-D and/or TPH-O were not detected above the laboratory practical quantitation limits (PQLs). Various VOCs including PCE were detected in groundwater samples collected from all six monitoring wells but not at concentrations exceeding the MTCA Method A CULs. Total RCRA metals were detected in groundwater samples collected from all six monitoring wells (MW1 through MW6) at concentrations exceeding the MTCA Method A CULs

On December 15, 2022, BMEC conducted a GWSE involving all six monitoring wells (MW1 through MW6). TPH-D + TPH-O were not detected above the laboratory PQLs in five of the six groundwater samples, yet were detected but did not exceed the MTCA Method A Cleanup Level of 500 mg/L in well MW2. TPH-G was not detected above the laboratory PQLs in the six groundwater samples. VOCs (including PCE) were detected in some of the six groundwater samples but at concentrations that did not exceed established MTCA Method A CULs. Arsenic (total) was detected in all six groundwater samples at concentrations exceeding the MTCA Method A CUL of 5 µg/L. Chromium (hexavalent + trivalent) was detected in all six groundwater samples at concentrations exceeding the MTCA Method A CUL of 50 µg/L. Lead concentrations exceeded the MTCA Method A CUL of 15 µg/L in several wells. Mercury was detected in three of the groundwater samples at concentrations ranging from 0.58 µg/L in well MW2 to 2.1 µg/L in well MW6. The MTCA Method A CUL for mercury is 2 µg/L.

On March 28, 2023, BMEC conducted a GWSE involving six monitoring wells (MW1 through MW6). TPH-D and/or TPH-O were not detected above the laboratory PQLs in five of the six groundwater samples collected from monitoring wells MW1 and MW3 through MW6. Lube oil (i.e., TPH-O) was detected in the groundwater sample collected from monitoring well MW2 at a concentration of 150 µg/L which does not exceed the MTCA Method A CUL of 500 µg/L. Chlorinated VOCs including PCE did not exceed the MTCA Method A CULs. RCRA (total and dissolved) metals exceeded the MTCA Method A CULs in the groundwater sample collected from well MW3. However, the heavy silt content and extremely low recharge of this well suggested that false positive detections of metals would likely continue to be detected in the groundwater collected from this well due to cohesive qualities of metals to fine soil particles and a new well installation (MW3A) was prudent.

BMEC supervised the advancement of four borings on May 19, 2023, and collected eight soil samples while completing the borings as monitoring wells MW3A, MW7, MW8, and MW9. The latter three wells were installed on the west side of the property (up-gradient). PCE was detected at extremely low concentrations in three of the eight soil samples collected at the soil-groundwater interface, yet did not exceed the MTCA Method A CUL. No RCRA metals concentrations exceeded the MTCA Method A CULs in soil.

BMEC mobilized to the Site on June 13, 2023, to develop four newly installed monitoring wells (MW3A, MW7, MW8, and MW9) and perform a GWSE on all nine monitoring wells. PCE was detected in all nine groundwater samples at concentrations ranging from 0.97 µg/L in the groundwater sample collected from well MW4 to 2.3 µg/L in the sample collected from well MW2. None of the nine groundwater sample results for PCE exceeded the MTCA Method A CUL of 5 µg/L. The MTCA Method A CULs for arsenic (5 µg/L) and total chromium (50 µg/L) in groundwater obtained from MW1 were exceeded. The MTCA Method A CUL for lead (15 µg/L) was not exceeded in any of the nine groundwater samples.

BMEC mobilized to the Site on September 26, 2023, to perform a GWSE. TPH-D + TPH-O did not exceed the MTCA Method A CUL of 500 µg/L. Two of the nine groundwater sample results for PCE exceeded the MTCA Method A CUL of 5 µg/L; the groundwater sample collected from well MW8 at 5.1 µg/L and the groundwater sample collected from well MW7 at 6.0 µg/L. None of the nine groundwater samples collected yielded total metal concentrations exceeding their respective MTCA Method A CULs.

BMEC mobilized to the Site on December 27, 2023, to perform a GWSE. TPH-D and/or TPH-O were not detected above the laboratory PQLs in any of the nine groundwater samples. PCE was detected in eight of nine groundwater samples at concentrations ranging from 1.4 µg/L in the groundwater sample collected from well MW8 to 3.1 µg/L in the sample collected from well MW1. None of the eight groundwater sample detections for PCE exceeded the MTCA Method A CUL of 5 µg/L. Metals (totals) were not detected above the MTCA Method A CULs in any of the nine groundwater samples.

BMEC mobilized to the Site on March 19, 2024, to perform a GWSE. PCE was detected in eight of nine groundwater samples at concentrations ranging from 0.9 µg/L in the groundwater sample collected from well MW8 to 2.7 µg/L in the sample collected from well MW2. None of the eight groundwater sample detections for PCE exceeded the MTCA Method A CUL of 5 µg/L. Metals (totals) were not detected above the laboratory PQLs in groundwater samples collected from all nine wells.

BMEC performed an eighth consecutive GWSE at the Site on June 5, 2024. Per Ecology, TPH-D and/or TPH-O were not analyzed. PCE was detected in eight of nine groundwater samples at concentrations ranging from 0.76 µg/L in the groundwater sample collected from well MW8 to 1.6 µg/L in the samples collected from wells MW1 and MW2. None of the eight groundwater sample detections for PCE exceeded the MTCA Method A CUL of 5 µg/L. Metals (total) were not detected in any of the nine groundwater samples at concentrations exceeding the MTCA Method A CULs.

On June 25, 2024, BMEC teamed with ACC Environmental Consultants (ACC) and conducted a Tier II Vapor Intrusion Assessment (VIA) at the Site by placing eight Summa canisters at various locations throughout the Site. ACC compared the outdoor air sample results for the five volatile organic compounds (VOCs) assessed [vinyl chloride, trichloroethene (TCE), tetrachloroethene (PCE), cis-1,2-dichlorethene, and trans-1,2-dichlorethene] to the indoor air sample results. The outdoor air samples had none of the PCE detections seen in many of the indoor air samples. Results of the indoor air sampling indicated that two vapor samples had concentrations of PCE above one of the respective CULs for indoor air (Method B carcinogenic). These samples included SUM-AA-02 collected in the showroom office which exceeded the Method B cancer CUL by 1.2-times and SUM-AA-06 collected in the maintenance shop which exceeded the Method B cancer CUL by 1.9-times. A minimum of one more Tier II VIA is recommended, as well as a remedial effort to increase proper air flow inside the main building via better ventilation (i.e., fans) and/or HVAC system implementation.

In conclusion, the following groundwater assessment and/or indoor breathing air assessment and/or remediation is recommended:
SOIL: No additional sampling or remediation necessary.
GROUNDWATER: One more GWSE to be conducted in September 2024; assuming no PCE exceeding MTCA Method A CULs in groundwater, no more sampling or remediation necessary.
AIR VAPOR: Remediation via more efficient air flow inside the building and a minimum of one more Tier II VIA.

The estimated cost of such efforts (GWSE and indoor air assessment and air flow enhancement) are as follows:

- Driller to decommission all nine monitoring wells = $20,000
- One more GWSE conducted in September 2024 = $20,000
- Indoor air assessment (Tier II VIA) and indoor air flow enhancement = $93,500

Thus, the total cost of the "FS" for remediation via monitoring well decommissioning is approximately $133,500.

2.0 INTRODUCTION

This Remedial Investigation/Feasibility Report (RI/FS) report for the Own A Car (former Hahn Motors Company) located at 1201 South 1st Street in Yakima, Washington (Site), was prepared by Blue Mountain Environmental & Consulting Company, Inc. (BMEC) on behalf of the Mustang 64.5 LLC Estate and the State of Washington Department of Ecology (Ecology). **Figure 1** is a Site Vicinity Map illustrating the property location. **Figure 2** is a Site Location Map of the 1.5-acre property.

This work was performed to complete Phase I of the Preliminary Planning Assessment (PPA). Below is a summary of the PPA objectives and an overview of the information

included in this environmental report:

- Characterize the nature and extent of contamination and define the extent and magnitude of the contamination at the Site as defined in the Washington State Model Toxics Control Act (MTCA) by performing a remedial investigation (RI) as described in Washington Administrative Code (WAC) 173-340-3502. MTCA defines a site by the nature and extent of contamination associated with one or more releases of hazardous substances prior to any cleanup, regardless of the property or parcel boundary. This RI fully defined the Site with respect to soil and groundwater media impact from petroleum hydrocarbons, as well as soil gas regarding vapor intrusion (VI) assessment.
- If applicable, select a preferred cleanup alternative to remediate the site. This objective is satisfied by the feasibility study (FS) included in this document.

Recommendations included in this document are strongly based on "Further Action At The Following Site" included in the February 23, 2016 and January 24, 2024, Opinion Letters written by Ecology. Copies of the respective Opinion Letters (February 23, 2016 and January 12, 2024) are available in **Appendix A** and **Appendix B,** respectively.

2.1 GENERAL SITE INFORMATION

The Hahn Motor Company site is located in the City of Yakima, Washington with the following physical features:

Latitude: N 46.10'.12.35°

Longitude: W 119.03'.00.34°

Section 30

Township: 13 North

Range: 19 East, Willamette Meridian

County: Yakima

Area: 1.5 acre

2.2 PROPERTY HISTORY

Contact information for the Site is as follows:

Project Consultant:	BMEC, Inc.
Property Owner:	United Properties LLC. P. O. Box 2566 Yakima, WA 98907
Facility Operator:	Nick Enterprises LLC. Dba - Own A Car, P. O. Box 2566 Yakima, WA 98907
Consultant Contact:	Mr. Ken Cole – President of BMEC
	P.O. Box 545 / 125 Main Street
	Waitsburg, WA 99361
	509-520-6519
Property Contact:	Debra Manjarrez

2.3 SITE HISTORY

For a summary of the site history, please see Section 3.0 (below).

2.4 SITE USE

For a summary of the site use, please see Sections 3.1 and 3.13 (below).

3.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

The existing facility was built in 1946 by Hahn Motors Company. A 2,000-gallon heating oil underground storage tank (UST) for the oil-fired boiler was installed in the northwest side of the building's basement to provide heat for the facility. A second 2,000-gallon UST was installed at the facility in the mid-1970's and both USTs were used to store used oil after the boiler was converted to burn used motor oil, which was plentiful and available from the on-site conducted car services.

It was determined by Ecology on July 9, 2007, and documented via certified mail dated July 26, 2007, that Hahn Motors Company was in Non-Compliance with the Underground Storage Tank Regulations Chapter 173-360 for not properly registering and upgrading their 2,000-gallon USTs prior to storage of waste oil. Via directive from Ecology as defined in the July 26, 2007 certified mail, both USTs were decommissioned by removal and backfill in November 2007. Approximately 50 cubic yards of petroleum-contaminated soil (PCS) and asphalt were hauled off-site and disposed of at the Anderson Disposal Facility in Yakima, Washington.

During the November 9, 2007, UST decommissioning activities, three soil samples were collected from the west, north, and east side of the eastern UST, yielding one heavy oil detection of 396 milligrams per Kilogram (mg/Kg) in the west sample. Similarly, three soil samples were collected from the west, north, and east side of the eastern UST, yielding heavy oil detections ranging between 155 – 492 mg/Kg. The MTCA Method A CUL for heavy oil is 2,000 mg/Kg. No gasoline range hydrocarbons were identified by laboratory analysis in any soil samples collected. Significant lead concentrations were detected in residual soil sampled and analyzed from beneath the tank bottom(s).

On February 23, 2016, Ecology issued a Further Action letter to Richard Hahn of the Hahn Motors Company stating that "further remedial action is necessary to clean up contamination at the Site." A copy of the Opinion Letter (February 23, 2016) is available in **Appendix A**. A copy of the Opinion Letter (January 12, 2024) is available in **Appendix B**. This further remedial action was to be performed in the assessment of potential contamination in soil and groundwater resulting from "Waste oil and associated chemicals released from Underground Storage Tanks (USTs) into soil and groundwater" to the north of the main building, as well as "petroleum products and other chemicals released from interior sumps to soil and groundwater". The USTs were properly investigated by BMEC in February 2022 and the interior sump effluent concern was investigated in February 2022 by BMEC and remediated via excavation and confirmation soil sampling in July 2022 by BMEC and subcontractors.

In 2017, Ecology conducted semi-annual groundwater sampling of the Yakima Railroad Area (YRRA) groundwater monitoring network which is a six-square mile area located along the railroad corridor in the cities of Yakima and Union Gap, Washington. The YRRA was defined in 1991. The Site is located near the center of the YRRA which is impacted by chlorinated solvents, primarily tetrachloroethene (PCE). Circa 2017, 15 of the 39 groundwater samples collected from wells within the YRRA yielded concentrations ranging from 5 to 9,110 micrograms per liter (µg/L). The MTCA Method

A CUL for PCE in groundwater is 5 µg/L.

3.1 FEBRUARY 2022 - SUBSURFACE INVESTIGATION

On February 1, 2022, BMEC hydrogeologist, Brent Bergeron, LHG, and BMEC environmental professional Yancy Meyer, supervised the advancement of six soil borings (SB1 through SB6) to depths varying between 15 feet and 25 feet bgs. The six soil borings were advanced via sonic drilling methodology by Environmental West Explorations (EWE) personnel. The locations of the six borings are illustrated on **Figure 3**. Copies of the Boring Logs are included in **Appendix C**. Photographs of field activities are included in **Appendix D.**

Total petroleum hydrocarbons – diesel range (TPH-D) were only quantified in one of the 21 soil samples collected at a concentration of 670 mg/Kg in sample SB1-2-1-22-10'. TPH-O was quantified in three of the 21 soil samples at concentrations of 1400 mg/Kg in sample SB1-2-1-22-10'; 6900 mg/Kg in sample SB5-2-1-22-10'; and 1100 mg/Kg in sample SB5-2-1-22-15'. The MTCA Method A CUL for TPH-D + TPH-O is 2000 mg/Kg which was only exceeded in samples SB1-2-1-22-10' and SB5-2-1-22-10'. TPH-G was performed on one soil sample. TPH-G was quantified in sample SB1-2-1-22-10' at 220 mg/Kg which exceeds the MTCA Method A CUL of 30 mg/Kg. A summary of the TPH in soil laboratory analytical results is represented on **Table 1**. Copies of all laboratory analytical data collected during the field activities conducted by BMEC personnel during this subsurface investigation and all other field work events are included in **Appendix E**.

VOCs were analyzed in three soil samples (SB1-2-1-22-10', SB3-2-1-22-25', and SB5-2-1-22-20') and detected in sample SB1-2-1-22-10' at concentrations that did not exceed any MTCA Method A CULs. No volatile organic compounds (VOCs) were detected in soil samples SB3-2-1-22-25' and SB5-2-1-22-20'. A summary of the VOCs in soil laboratory analytical results is represented on **Table 2**.

Cadmium was detected in one soil sample (SB1-2-1-22-10') at 2.5 mg/Kg which exceeds the MTCA Method A CUL of 2 mg/Kg. Chromium was detected in all 21 samples at concentrations ranging from 2.9 mg/Kg in sample SB5-2-1-22-20' to 34 mg/Kg in sample SB2-2-1-22-5' which was the only soil sample to exceed the MTCA Method A CUL of 19 mg/Kg. Lead was detected in four of the 21 soil samples at concentrations ranging from 9.4 mg/Kg in sample SB5-2-1-22-5' to 45 mg/Kg in sample SB1-2-1-22-10'. None of the four lead detections exceeded the MTCA Method A CUL of 250 mg/Kg. A summary of the heavy metals in soil laboratory analytical results is represented on **Table 3**.

Polynuclear aromatic hydrocarbons (PAHs) were analyzed in three soil samples and detected in sample SB1-2-1-22-10' at concentrations that did not exceed any MTCA Method A CULs. No PAHs were detected in soil samples SB3-2-1-22-25' and SB5-2-1-22-20'.

TPH-D and/or TPH-O were detected above the laboratory MRLs in all three grab groundwater samples collected (SB1-2-1-22-GW, SB3-2-1-2-GW, and SB5-2-1-22-GW). Furthermore, TPH-D + TPH-O were detected in samples SB1-2-1-22-GW and SB5-2-1-22-GW at concentrations of 9800 micrograms per Liter (µg/L) and 770 µg/L, respectively, which exceeded the MTCA Method A CUL of 500 µg/L. Groundwater sample SB1-2-1-22-GW was collected from immediately down-gradient of the dry well(s) outside the automobile engine washing bay on the south side of the building and groundwater sample SB5-2-1-22-GW was collected from between the two USTs removed from the north side of the building. A summary of the TPH in groundwater laboratory

analytical results is represented on **Table 4**.

VOCs were analyzed in all three grab groundwater samples (SB1-2-1-22-GW, SB3-2-1-22-GW, and SB5-2-1-22-GW). A combination of VOCs including PCE, benzene, ethylbenzene, and naphthalene were detected in all three grab groundwater samples but not at concentrations exceeding established MTCA Method A CULs. A summary of the VOCs in groundwater laboratory analytical results is represented on **Table 5**.

Arsenic (total) was detected in all three grab groundwater samples at concentrations exceeding the MTCA Method A CUL of 5 µg/L. Arsenic (total) concentrations ranged from 51 µg/L in SB3-2-1-22-GW to 130 µg/L in SB5-2-1-22-GW. Chromium (total) was detected in all three grab groundwater samples at concentrations exceeding the MTCA Method A CUL of 50 µg/L. Chromium (total) concentrations ranged from 420 µg/L in SB3-2-1-22-GW to 1100 µg/L in SB5-2-1-22-GW. Lead (total) was detected in all three grab groundwater samples at concentrations exceeding the MTCA Method A CUL of 15 µg/L. Lead (total) concentrations ranged from 150 µg/L in SB3-2-1-22-GW to 1200 µg/L in SB1-2-1-22-GW. Cadmium (total) was detected in grab groundwater samples SB1-2-1-22-GW and SB5-2-1-22-GW at 110 µg/L and 6.4 µg/L, respectively. The MTCA Method A CUL for cadmium (total) in groundwater is 5 µg/L. A summary of the total metals in groundwater laboratory analytical results is represented on **Table 6**.

PAHs were analyzed in all three grab groundwater samples (SB1-2-1-22-GW, SB3-2-1-22-GW, and SB5-2-1-22-GW). A combination of PAHs including 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene were detected in all three groundwater samples: however, not at concentrations exceeding established MTCA Method A CULs.

Polychlorinated biphenyls (PCBs) were analyzed in grab groundwater samples (SB1-2-1-22-GW, SB3-2-1-22-GW, and SB5-2-1-22-GW). PCBs were not detected above the laboratory practical quantitation limits (PQLs) in any of the three samples.

3.2 JULY 2022 - DRY WELL REMOVAL

From July 12 – 14, 2022, BMEC personnel supervised Clarke Construction personnel during the removal of both dry wells south of the main onsite building and collected 10 confirmation soil samples in the process. Confirmation samples indicated no contaminants (i.e., benzene, toluene, ethylbenzene, and xylenes [BTEX]; TPH-D; TPH-O; TPH-G; arsenic; cadmium; chromium; and lead) above Ecology MTCA Method A CULs. On July 14, 2022, after receiving soil sample results, a new drywell was placed in the location of Former Drywell 2 to allow for stormwater drainage from the parking lot, and the excavation was backfilled, compacted to grade, and paved with asphalt. The locations of the 10 confirmation soil samples are illustrated on **Figure 4**. Photographs of field activities are included in **Appendix D**.

3.3 SEPTEMBER 2022 - ADDITIONAL SUBSURFACE INVESTIGATION

On September 27 and 28, 2022, BMEC hydrogeologist, Brent Bergeron, LHG, and BMEC environmental professional Yancy Meyer, supervised Anderson Environmental Contractors (AEC) personnel during the advancement of six soil borings (MW1 through MW6) to depths of 25 feet bgs via sonic drilling. Each borehole was completed as a 2-inch diameter flush-mounted monitoring well and subsequently developed in October 2022 and sampled for groundwater. The locations of monitoring wells MW1 through MW6 are illustrated on **Figures 5, 7, 8 and 11**. Photographs of field activities are included in **Appendix D**.

TPH-D was only quantified in one of the 12 soil samples at a concentration of 76 mg/Kg

in sample MW3-9-27-22-15'. TPH-O was quantified in three of the 12 soil samples at concentrations of 300 mg/Kg in sample MW3-9-27-22-15' to 1000 mg/Kg in sample MW6-9-27-22-21'. The MTCA Method A CUL for TPH-D + TPH-O is 2000 mg/Kg which was not exceeded in any of the 12 soil samples. TPH-G was not detected in any of the 12 soil samples. A summary of the TPH in soil laboratory analytical results is represented in **Table 1**.

VOC index parameters such as BTEX plus naphthalene were not detected in any of the 12 soil samples. A summary of the VOCs in soil laboratory analytical results is represented in **Table 2**.

Resource Conservation and Recovery Act (RCRA) metals (i.e., arsenic, cadmium, mercury, selenium, and silver) were not detected above the laboratory PQLs in any of the samples. Barium was detected in all 12 samples at concentrations ranging up to 65 mg/Kg in sample MW6-9-27-22-21'. A MTCA Method A CUL does not currently exist for barium. Chromium (hexavalent + trivalent) was detected in all 12 samples at concentrations ranging up to 16 mg/Kg in soil sample MW1-9-28-22-19'. None of the 12 chromium detections exceeded the MTCA Method A CUL for chromium of 19 mg/Kg. Lead was detected in three of the 12 soil samples at concentrations ranging up to 11 mg/Kg in sample MW6-9-27-22-21'. None of the three lead detections exceeded the MTCA Method A CUL of 250 mg/Kg. A summary of the heavy metals in soil laboratory analytical results is represented in **Table 3**.

3.4 OCTOBER 2022 – GROUNDWATER SAMPLING EVENT

On October 3, 2022, BMEC personnel returned to the Site to conduct a GWSE involving all six monitoring wells (MW1 through MW6). TPH-D and/or TPH-O were not detected above the laboratory PQLs in all of the six groundwater samples collected from monitoring wells MW1 through MW6. A summary of the TPH in groundwater laboratory analytical results is represented on **Table 4**.

Various VOCs including PCE were detected in groundwater samples collected from all six monitoring wells but none of the VOC detections exceeded established MTCA Method A CULs. PCE concentrations were detected in all six groundwater samples and ranged from 1.1 µg/L in well MW4 to 2.6 µg/L in well MW1. The CUL for PCE in groundwater is 5 µg/L. A summary of the VOCs in groundwater laboratory analytical results is represented on **Table 5**.

Total RCRA metals (i.e., arsenic chromium, and/or lead) were detected in groundwater samples collected from all six monitoring wells at concentrations exceeding the MTCA Method A CULs. Barium was detected in all six groundwater samples at concentrations ranging from 340 µg/L in well MW1 to 2700 µg/L in well MW4. No MTCA Method A CUL in groundwater currently exists for barium. Selenium was detected in groundwater samples collected from wells MW2, MW4, and MW6 at concentrations of 7.6 µg/L, 9.9 µg/L, and 5.9 µg/L, respectively. No MTCA Method A CUL in groundwater currently exists for selenium. Mercury was detected in groundwater samples collected from wells MW2, MW4, and MW6 at concentrations of 1.2 µg/L, 1.5 µg/L, and 0.65 µg/L, respectively. The MTCA Method A CUL for mercury in groundwater is 2 µg/L. A summary of the total metals in groundwater laboratory analytical results is represented in **Table 6**.

3.5 DECEMBER 2022 – GROUNDWATER SAMPLING EVENT

On December 15, 2022, BMEC personnel returned to the Site to conduct a GWSE involving all six monitoring wells (MW1 through MW6). TPH-D and/or TPH-O were not

detected above the laboratory PQLs in five of the six groundwater samples collected from monitoring wells MW1 and MW3 through MW6. Lube oil (i.e., TPH-O) was detected in the groundwater sample collected from monitoring well MW2 at a concentration of 240 mg/L which does not exceed the MTCA Method A CUL of 500 mg/L. TPH-G was not detected above the laboratory PQLs in the six groundwater samples.

VOCs were analyzed in all six groundwater samples. A combination of VOCs including PCE, BTEX, and miscellaneous VOCs (i.e., chloroform, carbon disulfide, n-propylbenzene, p-isopropytoluene, and n-butylbenzene) were detected in all six groundwater samples but at concentrations that do not exceed established MTCA Method A CULs. PCE was detected in groundwater samples obtained from all six monitoring wells at concentrations ranging from 1.1 µg/L in well MW6 to 1.7 µg/L in the groundwater samples collected from wells MW1 and MW2. Benzene was detected in groundwater samples collected from monitoring wells MW2 and MW4 at 0.22 µg/L and 0.23 µg/L, respectively. The MTCA Method A CULs for PCE and benzene are each 5 µg/L. A summary of the VOCs results in groundwater is represented on **Table 5.**

RCRA (total) metals were analyzed in all six groundwater samples collected from monitoring wells MW1 through MW6. Selenium was detected in two of the groundwater samples at concentrations ranging from 6.7 µg/L in well MW3 to 11 µg/L in well MW6. No MTCA Method A CUL currently is established for selenium. Barium was detected in all six of the groundwater samples at concentrations ranging from 580 µg/L in well MW1 to 1900 µg/L in wells MW4 and MW6. No MTCA Method A CUL currently is established for barium. Cadmium and silver were not detected above the laboratory PQLs in any of the six groundwater samples.

Arsenic (total) was detected in all six groundwater samples at concentrations exceeding the MTCA Method A CUL of 5 µg/L. Arsenic (total) concentrations ranged from 28 µg/L in the groundwater samples collected from wells MW1 and MW5 to 150 µg/L in MW6. Chromium (hexavalent + trivalent) was detected in all six groundwater samples at concentrations exceeding the MTCA Method A CUL of 50 µg/L. Chromium concentrations ranged from 150 µg/L in well MW1 to 340 µg/L in MW3. Lead was detected in all six groundwater samples at concentrations exceeding the MTCA Method A CUL of 15 µg/L. Lead concentrations ranged from 26 µg/L in the groundwater collected from well MW1 to 140 µg/L in well MW6. Mercury was detected in three of the groundwater samples at concentrations ranging from 0.58 µg/L in well MW2 to 2.1 µg/L in well MW6. The MTCA Method A CUL for mercury is 2 µg/L. A summary of the total metals in groundwater laboratory analytical results is represented in **Table 6**.

3.6 MARCH 2023 GROUNDWATER SAMPLING EVENT

On March 28, 2023, BMEC personnel returned to the Site to conduct a GWSE involving all six existing monitoring wells (MW1 through MW6). TPH-D and/or TPH-O were not detected above the laboratory PQLs in five of the six groundwater samples collected from monitoring wells MW1 and MW3 through MW6. Lube oil (i.e., TPH-O) was detected in the groundwater sample collected from monitoring well MW2 at a concentration of 150 µg/L which does not exceed the MTCA Method A CUL of 500 µg/L.

The chlorinated VOCs (cis) 1,2-DCE, TCE, VC, and PCE were analyzed in all six groundwater samples. PCE was detected in all six groundwater samples at concentrations ranging from 0.70 µg/L in well MW3 to 2.4 µg/L in well MW2. None of the six groundwater concentrations exceeded the established MTCA Method A CUL (5 µg/L). PCE was the only VOC detected in the six groundwater samples. A summary of the VOCs in groundwater laboratory analytical results is represented in **Table 5**.

RCRA (total and dissolved) metals were analyzed in all six groundwater samples collected from monitoring wells MW1 through MW6. RCRA metals (totals) were not detected above the laboratory PQLs in groundwater samples collected from wells MW2, MW4, MW5, and MW6. Total chromium and total lead were detected at 15 µg/L and 2.5 µg/L, respectively, in the groundwater samples collected from well MW1 with neither value exceeding the MTCA Method A CULs of 50 µg/L and 15 µg/L, respectively. Total RCRA metals were detected in the groundwater sample collected from well MW3 at the following concentrations:

- Arsenic at 88 µg/L (MTCA Method A CUL = 5 µg/L)
- Cadmium at 6.5 µg/L (MTCA Method A CUL = 5 µg/L)
- Chromium (hexavalent + trivalent) at 1100 µg/L (MTCA Method A CUL = 50 µg/L)
- Lead at 220 µg/L (MTCA Method A CUL = 15 µg/L
- Mercury at 1.5 µg/L (MTCA Method A CUL = 2 µg/L)

As noted above, the total arsenic, total cadmium, total chromium, and total lead concentrations all exceed their respective CULs. However, BMEC suspects the extremely high turbidity/high suspended solids content and slow recharge of the well may have impacted the high metals concentrations.

The laboratory analytical results for dissolved RCRA metals concentrations were all non-detect (arsenic, cadmium, chromium [hexavalent + trivalent], lead and mercury). Each of the six groundwater samples submitted to Onsite Environmental in Redmond, Washington (OnSite) for dissolved RCRA metals were not field filtered. Instead, each of the six samples were filtered in the lab, prior to analysis.

A summary of the total metals in groundwater laboratory analytical results is represented in **Table 6**.

3.7 MAY 19, 2023, MONITORING WELL INSTALLATION AND SOIL SAMPLING EVENT

BMEC personnel mobilized to the Site on May 19, 2023, to supervise the advancement of four borings, collect eight soil samples from the four borings for laboratory analyses, and complete the four borings as monitoring wells (MW3A, MW7, MW8, and MW9). All four monitoring wells were advanced via terra sonic methodology. Borings for monitoring wells MW7 through MW9 were advanced to 25 feet bgs and screened from 10 – 25 feet bgs with Schedule 40 polyvinyl chloride (PVC), completed with flush-mounted locking caps. The boring for well MW3A was advanced to 30 feet, screened from 10 – 30 feet bgs with Schedule 40 PVC, and completed with a flush-mounted locking cap. The locations of monitoring wells MW7 through MW9, as well as replacement well MW3A, are illustrated on **Figures 5, 7, 8, and 11**. Photographs of field activities are included in **Appendix D**.

TPH-D and TPH-O results for all eight soil samples collected were non-detect. A summary of the TPH in soil laboratory analytical results is represented on **Table 1**.

PCE was detected in three of the eight soil samples at concentrations ranging from 0.0018 mg/Kg in soil sample MW7-5-19-23-25' to 0.0026 mg/Kg in soil sample MW9-5-19-23-27'. None of the three soil sample detections exceed the MTCA Method A CUL of 0.05 mg/Kg. Vinyl chloride (VC), (cis) 1,2-dichloroethene (DCE), and trichloroethene (TCE) were not detected above the laboratory PQLs in any of the eight soil samples. A summary of the VOCs in soil laboratory analytical results is represented in **Table 2**.

Barium was detected in all eight soil samples at concentrations ranging from 26 mg/Kg in soil sample MW7-5-19-23-18' to 67 mg/Kg in soil sample MW9-5-19-23-27'. A MTCA Method A CUL does not currently exist for barium. Total chromium (hexavalent + trivalent) was detected in all eight soil samples at concentrations ranging from 5.4 mg/Kg in soil sample MW3a-5-19-23-20' to 12 mg/Kg in soil sample MW9-5-19-23-27'. None of the eight total chromium detections exceed the MTCA Method A CUL for Cr+6 of 19 mg/Kg. Mercury was detected in soil sample MW9-5-19-23-27' at 0.38 mg/Kg which does not exceed the MTCA Method A CUL of 2 mg/Kg. Arsenic, cadmium, silver, and selenium were not detected above the laboratory PQLs in any of the eight soil samples. A summary of the heavy metals in soil laboratory analytical results is represented in **Table 3**.

3.8 JUNE 13, 2023, MONITORING WELL DEVELOPMENT AND GROUNDWATER SAMPLING EVENT

BMEC personnel mobilized to the Site on June 13, 2023, to develop four newly installed monitoring wells (MW3A, MW7, MW8, and MW9), obtain depth-to-water (DTW) measurements from all nine wells (MW3 excluded and MW3A included), and collect groundwater samples from all nine monitoring wells (MW1 through MW9) for laboratory analyses. The following text describes the May 2023 and June 2023 field activities in detail.

TPH-D and TPH-O were not detected above the laboratory PQLs in any of the nine groundwater samples collected. A summary of the TPH in groundwater laboratory analytical results is represented in **Table 4**.

VC, (cis) 1,2-DCE, and TCE were not detected above the laboratory PQLs in any of the nine groundwater samples. PCE was detected in all nine groundwater samples at concentrations ranging from 0.97 µg/L in the groundwater sample collected from well MW4 to 2.3 µg/L in the sample collected from well MW2. None of the nine groundwater sample results for PCE exceeded the MTCA Method A CUL of 5 µg/L. A summary of the VOCs in groundwater laboratory analytical results is represented in **Table 5**.

RCRA metals (total) were analyzed in all nine groundwater samples collected from monitoring wells MW1 through MW9. RCRA metals (totals) were not detected above the laboratory PQLs in groundwater samples collected from seven of the nine wells including MW2, MW3A, MW4, MW5, MW6, MW7, and MW9. Lead was detected in the groundwater sample collected from well MW8 at 1.1 µg/L which does not exceed the MTCA Method A CUL of 15 µg/L. Arsenic, total chromium, and lead were detected in the groundwater sample collected from well MW1 at 9.3 µg/L, 73 µg/L, and 11 µg/L, respectively. The MTCA Method A CULs for arsenic (5 µg/L) and total chromium (50 µg/L) in groundwater obtained from MW1 were exceeded. The MTCA Method A CUL for lead (15 µg/L) was not exceeded. A summary of the total metals in groundwater laboratory analytical results is represented in **Table 6**.

3.9 SEPTEMBER 26, 2023, GROUNDWATER SAMPLING EVENT

BMEC personnel mobilized to the Site on September 26, 2023, to perform a GWSE involving all nine monitoring wells (MW1 through MW9). TPH-D and/or TPH-O were detected above the laboratory PQLs in one sample which was collected from well MW2. TPH-O was detected in the groundwater sample collected from well MW2 at 210 µg/L which does not exceed the MTCA Method A CUL of 500 µg/L. A summary of the TPH in groundwater laboratory analytical results is represented in **Table 4**.

The chlorinated VOCs (cis) 1,2-DCE, TCE, PCE, and VC were analyzed in all nine

groundwater samples. VC, (cis) 1,2-DCE, and TCE were not detected above the laboratory PQLs in any of the nine groundwater samples. PCE was detected in eight of nine groundwater samples at concentrations ranging from 2.0 µg/L in the groundwater samples collected from wells MW5, MW6, and MW9 to 6.0 µg/L in the sample collected from well MW7. Two of the nine groundwater sample results for PCE exceeded the MTCA Method A CUL of 5 µg/L; the groundwater sample collected from well MW8 at 5.1 µg/L and the groundwater sample collected from well MW7 at 6.0 µg/L. A summary of the VOCs in groundwater laboratory analytical results is represented in **Table 5**. **Figure 6** illustrates the concentrations of PCE in groundwater on September 26, 2023, which was the last date when PCE was detected in the groundwater at concentrations exceeding the CULs.

RCRA metals (total) were analyzed in all nine groundwater samples collected from monitoring wells MW1 through MW9. RCRA metals (totals) were not detected above the laboratory PQLs in groundwater samples collected from six of the nine wells including MW3A, MW5, MW6, MW7, MW8, and MW9. Arsenic, cadmium, and mercury were not detected above the laboratory PQLs in groundwater samples collected from any of the nine wells.

Lead was detected in the groundwater samples collected from wells MW1, MW2, and MW4 at 2.9 µg/L, 9.0 µg/L, and 1.2 µg/L, respectively, none of which exceed the MTCA Method A CUL of 15 µg/L for lead in groundwater. Total chromium (hexavalent + trivalent) was detected in the groundwater samples collected from wells MW1 and MW2 at 20 µg/L and 19.0 µg/L, respectively. Neither of which exceed the MTCA Method A CUL of 50 µg/L for total chromium in groundwater. A summary of the total metals in groundwater laboratory analytical results is represented in **Table 6**.

3.10 DECEMBER 27, 2023, GROUNDWATER SAMPLING EVENT

BMEC personnel mobilized to the Site on December 27, 2023, to perform a GWSE on all nine monitoring wells (MW1 through MW9). TPH-D and/or TPH-O were not detected above the laboratory PQLs in any of the nine groundwater samples. A summary of the TPH in groundwater laboratory analytical results is represented in **Table 4**.

VC, (cis) 1,2-DCE, and TCE were not detected above the laboratory PQLs in any of the nine groundwater samples. PCE was detected in eight of nine groundwater samples at concentrations ranging from 1.4 µg/L in the groundwater sample collected from well MW8 to 3.1 µg/L in the sample collected from well MW1. None of the eight groundwater sample detections for PCE exceeded the MTCA Method A CUL of 5 µg/L. A summary of the VOCs in groundwater laboratory analytical results is represented in **Table 5**.

Metals (totals) were not detected above the laboratory PQLs in groundwater samples collected from six of the nine wells including MW4, MW5, MW6, and MW9. Arsenic was detected in groundwater samples collected from five of the nine wells at concentrations ranging from 1.05 µg/L in well MW-3A to 3.35 µg/L in well MW-1. None of the five arsenic detections exceeded the MTCA Method A CUL of 5 µg/L. Chromium was detected in groundwater samples collected from three of the nine wells at concentrations ranging from 5.58 µg/L in well MW-2 to 30.3 µg/L in well MW-1. None of the three chromium detections exceeded the MTCA Method A CUL of 50 µg/L. Lead was detected in groundwater samples collected from three of the nine wells at concentrations ranging from 2.09 µg/L in well MW-8 to 5.64 µg/L in well MW-1. None of the three lead detections exceeded the MTCA Method A CUL of 15 µg/L. Mercury and cadmium were not detected above the laboratory PQLs in any of the nine groundwater samples collected. A summary of the total metals in groundwater laboratory

analytical results is represented in **Table 6**.

3.11 MARCH 19, 2024, GROUNDWATER SAMPLING EVENT

BMEC personnel mobilized to the Site on March 19, 2024, to collect groundwater samples from all nine monitoring wells (MW1 through MW9) for laboratory analyses. Per the approval of Ecology, groundwater samples were no longer required to be analyzed for TPH-D and TPH-O. A summary of the TPH in groundwater laboratory analytical results is represented in **Table 4**.

VC, (cis) 1,2-DCE, and TCE were not detected above the laboratory PQLs in any of the nine groundwater samples. PCE was detected in eight of nine groundwater samples at concentrations ranging from 0.9 µg/L in the groundwater sample collected from well MW8 to 2.7 µg/L in the sample collected from well MW2. None of the eight groundwater sample detections for PCE exceeded the MTCA Method A CUL of 5 µg/L. PCE was not detected above the laboratory PQLs in the groundwater sample collected from well MW9. A summary of the VOCs in groundwater laboratory analytical results is represented in **Table 5.**

Metals (total) were not detected above the laboratory PQLs in groundwater samples collected from all nine wells. A summary of the total metals in groundwater laboratory analytical results is represented in **Table 6.**

3.12 JUNE 5, 2024, GROUNDWATER SAMPLE RESULTS

BMEC performed an eighth consecutive GWSE at the Site on June 5, 2024. This GWSE involved collecting groundwater samples for analysis from all nine monitoring wells. TPH-D and/or TPH-O were not analyzed. Historical TPH results in groundwater are summarized in **Table 4.**

The chlorinated VOCs (cis) 1,2-DCE, TCE, PCE, and VC were analyzed in all nine groundwater samples. VC, (cis) 1,2-DCE, and TCE were not detected above the laboratory PQLs in any of the nine groundwater samples. PCE was detected in eight of nine groundwater samples at concentrations ranging from 0.76 µg/L in the groundwater sample collected from well MW8 to 1.6 µg/L in the samples collected from wells MW1 and MW2. None of the eight groundwater sample detections for PCE exceeded the MTCA Method A CUL of 5 µg/L. PCE was not detected above the laboratory PQLs in the groundwater sample collected from well MW9. Chlorinated VOC results in groundwater are summarized in **Table 5**.

Metals (total) were analyzed in all nine groundwater samples collected from monitoring wells MW1 through MW9. Metals (totals) were not detected above the laboratory PQLs in groundwater samples collected from wells MW1, MW3A, MW4, MW5, MW6, MW7, and MW9. Total chromium and total lead were detected in groundwater samples collected from wells MW2 and MW8 at concentrations not exceeding the MTCA Method A CULs of 50 µg/L and 15 µg/L, respectively. Metal (total) results in groundwater are summarized in **Table 6**.

3.13 JUNE 25, 2024, TIER II VAPOR INTRUSION ASSESSMENT

On June 25, 2024, BMEC teamed with ACC Environmental Consultants (ACC) and conducted a Tier II Vapor Intrusion Assessment (VIA) at the Site by placing eight Summa canisters at various locations throughout the Site. The locations of the Summa canisters are illustrated in the report included in **Appendix F**. ACC compared the outdoor air sample results for the five VOCs assessed [VC, TCE, PCE, (cis) 1,2-DCE, and trans-

1,2-dichloroethene] to the indoor air sample results. The outdoor air samples had none of the PCE detections seen in many of the indoor air samples. Results of the indoor air sampling indicated that two vapor samples had concentrations of PCE above one of the respective CULs for indoor air (Method B carcinogenic). These samples include SUM-AA-02 collected in the showroom office which exceeded the Method B cancer CUL by 1.2-times and SUM-AA-06 collected in the maintenance shop which exceeded the Method B cancer CUL by 1.9-times. A copy of the Tier II VIA laboratory analytical results are summarized in the table included in the report located in **Appendix F**.

4.0 SITE CHARACTERIZATION METHODOLOGY

This section summarizes the methodologies of the previous environmental field work conducted at the site by BMEC and various subcontractors. Brief summaries of the methodologies utilized in the field work activities shall be provided:

- Soil sample collection
- Soil boring advancement
- Monitoring well installation
- Monitoring well development
- Monitoring well groundwater sample collection
- Grab groundwater sample collection via soil borings
- Vapor assessment
- Product measurement

4.1 SOIL SAMPLE COLLECTION

From February 2022 through May 2023, 41 soil samples were collected from 16 soil borings (SB1 through SB6, MW1 through MW3, replacement well MW3A, and MW4 through MW9) advanced via terra-sonic methodology and 10 soil samples were collected from the dry well excavation sidewalls via track-hoe bucket. Overall, a total of 51 soil samples were collected in the field via a combination of one 4-ounce glass jar and three to four 40-mL glass vials preserved with methanol or sodium bisulfide. All soil samples were field screened with a photo-ionization detector (PID), prior to soil sample collection and containerization for laboratory analysis. Before use, the PID was calibrated against 100 parts per million (ppm) isobutylene span gas in an air mixture. The instrument was then zeroed against the ambient air near the work area. The PID is useful for qualitative field screening of cumulative VOCs and provides a basis for comparison between soil samples collected in the field. Cumulative VOCs were field measured by placing the tip of the PID near each successive foot of sonic sample core bag soil. This is not a compound-specific analysis and is affected by, among other influences, climate (e.g., temperature and humidity), soil type and conditions, instrument calibration and operation, and type of VOCs present.

The laboratory results of those 41 soil samples collected via terra-sonic methodology are summarized in **Tables 1 - 3**. The laboratory results of the 10 confirmation soil samples collected from the July 2022 dry well excavation sidewalls were all non-detect or below MTCA Method A CULs. The boring

locations (SB1 through SB6) from which the first 10 soil samples were collected via terra-sonic methodology are illustrated on **Figure 3.** The boring locations (MW1 through MW3, MW3A, and MW4 through MW9) from which the final 31 soil samples were collected via terra-sonic methodology are illustrated on **Figures 5, 7, 8, and 11.**

4.2 SOIL BORING ADVANCEMENT

All 16 soil borings (B1 through B6 and MW1 through MW9, as well as MW3A) advanced for further delineation of soil and groundwater contamination in the subsurface were advanced via terra-sonic drilling methodology. Continuous soil samples were brought to the surface via core barrel and sample bag methodology. Photographs of the field activities conducted at the Site on February 1, 2022, through May 2023 are included in **Appendix D**.

The rationale for choosing the locations of soil borings SB1 through SB3, as well as monitoring well MW3 and replacement well MW3A was to assess the potential for contaminants of concern (COCs) in soil and groundwater within the vicinity of the two dry wells located to the south of the automobile bays. The rationale for choosing the locations of soil borings SB4 through SB6, as well as monitoring wells MW1 and MW2 was to assess the potential for COCs in the soil and groundwater within the vicinity of the two former 2,000-gallon waste oil USTs. The rationale for installing monitoring wells MW4 through MW6 was to assess the potential for COCs in the soil and groundwater near the down-gradient portion of the property. The rationale for installing monitoring wells MW7 through MW9 was to assess the potential for COCs in the soil and groundwater near the up-gradient portion of the property.

Soil collected from all 16 borings was field screened via visual observation, olfactory evidence, and PID. The PID measurements are listed on each of the 16 boring logs in **Appendix C**. The soil lithology for each boring was assessed by the field hydrogeologist and recorded on the boring logs, as well. Photographs of soil lithology encountered in certain soil borings are included in **Appendix D**.

4.3 MONITORING WELL INSTALLATION

All 10 monitoring well (MW1 through MW9, as well as MW3A) boreholes were advanced with a terra-sonic drill rig via 6-inch outer diameter (OD) core barrel with continuous sample bag methodology. Boreholes MW1 through MW9 and MW3A were completed as flush-mounted, 2-inch diameter, Schedule 40, poly-vinyl chloride (PVC) monitoring wells with 15 feet of 0.01-inch slotted screen, except for replacement well MW3A which was completed with 20 feet of 0.01-inch slotted screen. Boring logs for all 10 monitoring wells are included in **Appendix C**.

4.4 MONITORING WELL DEVELOPMENT

On October 3, 2022, BMEC personnel returned to the Site to conduct a monitoring well development and GWSE involving all six existing monitoring wells (MW1 through MW6). Each of the six monitoring wells were developed via peristaltic pump and dedicated tubing followed by immediate sample collection. Groundwater parameters (pH, temperature, conductivity, and turbidity) were measured and recorded, prior to purging approximately 15 gallons of groundwater from each well. Each of the six groundwater samples consisted of four 40-mL glass vials preserved with hydrochloric acid (HCl); two unpreserved, 1-L amber glass jars; two 500-mL,

amber glass jars preserved with HCl; and one 500-mL polyethylene container preserved with nitric acid. All monitoring well development purge water (approximately 90 gallons) and submersible pump decontamination water was containerized in two 55-gallon drums and staged temporarily onsite awaiting future disposal.

On June 13, 2023, BMEC personnel returned to the Site to conduct a monitoring well development event on newly installed wells MW3A, MW7, MW8, and MW9 and GWSE on all nine monitoring wells, excluding MW3. Upon arrival at the Site on June 13, 2023, each of the nine monitoring wells (MW1, MW2, MW3A, MW4, MW5, MW6, MW7, MW8, and MW9) was opened and DTW measurements were obtained from the PVC top of casing per well. The groundwater parameters of the nine monitoring well samples were measured in the field via a Horiba U-52 for pH, temperature, conductivity, turbidity, and dissolved oxygen. Approximately 3.5 to five gallons were purged from each of the five existing wells (i.e., MW1, MW2, MW4, MW5, and MW6), prior to stabilization of the groundwater parameters listed above, followed by sample collection. Approximately 10 to 18 gallons were purged from each of the four newly installed wells (i.e., MW3A, MW7, MW8, and MW9), prior to stabilization of the groundwater parameters listed above, followed by sample collection. Monitoring well MW3 was replaced by well MW3A and is no longer sampled or monitored.

DTW measurements were collected via a Solinst interface probe from monitoring wells MW1 through MW9. Groundwater was purged from each of the nine wells via peristatic pump and dedicated tubing, prior to samples being collected in the appropriate containers, properly sealed and labeled, and placed on ice in a secured cooler.

A fresh pair of nitrile gloves was donned, prior to each successive groundwater sample collection. All trash derived from the GWSE activities (i.e., nitrile gloves, paper towels, and tubing) was placed in a plastic bag and placed in an onsite trash receptacle. All purge water was stored in 55-gallon drums temporarily staged onsite.

4.5 MONITORING WELL GROUNDWATER SAMPLE COLLECTION

During each GWSE conducted at the Site by BMEC personnel, immediately subsequent to purging each of the six to nine monitoring wells, peristaltic pump and dedicated tubing were used to obtain groundwater samples from each well. Each groundwater sample was obtained via a combination of the following containers per event: four 40-mL glass vials preserved with HCl, two 500-mL amber glass jars preserved with HCl, one 250-mL plastic container preserved with nitric acid, and one 250-mL plastic, unpreserved container. Upon collection, each groundwater sample was immediately labeled, sealed, and placed on ice in a secure cooler. The groundwater samples were relinquished to OnSite the following day via overnight delivery. A chain-of-custody was completed containing sample-specific information (i.e., time of collection, sample identification, date of sample collection, media type, sampler's name, analyses requested), site-specific information, and the signature of the person relinquishing the sample cooler to the laboratory.

4.6 GRAB GROUNDWATER SAMPLE COLLECTION VIA SOIL BORINGS

On February 2, 2022, grab groundwater samples were collected from borings B1, B3, and B5 via peristaltic pump and dedicated tubing. A section of perforated Schedule 40 PVC pipe was extended to the bottom of each boring and roughly one

gallon of groundwater was purged from the boring, prior to collection of each grab groundwater sample. No grab groundwater samples were collected from borings B2, B4, and B6 due to no groundwater being encountered in those three borings. Each groundwater sample was obtained via four 40-mL glass vials preserved with HCl, two 500-mL amber glass jars preserved with HCl, one 250-mL plastic container preserved with nitric acid, and one 250-mL plastic, unpreserved container. A chain-of-custody was completed containing sample-specific information (i.e., time of collection, sample identification, date of sample collection, media type, sampler's name, analyses requested), site-specific information, and the signature of the person relinquishing the sample cooler to the laboratory.

4.7 VAPOR ASSESSMENT

The scope of the Tier II VIA sampling event conducted on June 25, 2024, included the following:

▪ Collection of two outdoor air samples at upwind and downwind locations distributed across the Site.

▪ Collection of two indoor air samples from inside the automobile repair shop area.

▪ Collection of three indoor air samples from within the automobile sales area.

▪ Collection of one indoor air sample from within the basement of the building.

▪ Obtaining meteorologic data measured during the sampling event (e.g., wind speed, wind direction, barometric pressure and precipitation) from the nearest National Weather Service (NWS) monitoring station (e.g., KWAUNION58 – Union Gap, Washington) which is located 2 miles southeast of the Site. Wind direction data for this station for June 25, 2024, was reviewed on the Weather Underground website to identify the prevailing wind directions during the VIA sampling event. The average wind direction at the weather station on June 25, 2024, was from the north-northeast. However, the prevailing wind direction at the Site during the start of the sampling event was reported by field staff as from the west. Wind speed averaged 2.6 miles per hour (mph) during the sampling event, barometric pressure was decreasing during the sampling event from a high of 30.0" to 29.90", and there was no precipitation. The locations of the eight Summa canisters were as follows:

- SUM- AA-07 (upwind) located south of the sales/repair building, on the west portion of the lot.
- SUM- AA-08 (downwind) located east of the sales/repair building.
- SUM-AA-01 – Central portion of the basement of the building, in close proximity to a floor drain.
- SUM-AA-02 – Located in an office adjacent to the showroom in the northwest portion of the building.
- SUM-AA-03 – Eastern portion of the sales waiting area.
- SUM-AA-04 – Centrally located in the car showroom.
- SUM-AA-05 – Centrally located in the parts office, adjacent to the repair and service area.
- SUM-AA-06 – Northern portion of the repair and maintenance area.

Indoor and outdoor air samples were collected from each sampling location using a 6-

liter Summa canister equipped with 8-hour flow controllers.

4.8 PRODUCT MEASUREMENT

BMEC utilized a Solinst interface probe Model 122 to assess the presence and thickness (if applicable) of any measurable petroleum (i.e., diesel or gasoline) product floating on top of the groundwater surface as light, non-aqueous phase liquid (LNAPL) or measurable product collected at the base of the well as dense, non-aqueous phase liquid (DNAPL). To date, LNAPL and DNAPL have yet to be recorded in any of the 10 monitoring wells (MW1 through MW9, as well as MW3A).

5.0 QUALITY ANALYSES

The Site COCs are those chemicals that present an environmental risk. For the purpose of this document, BMEC will recognize those COCs only as those analytes that exceed the MTCA Method A CULs. The only COC for this Subject Property is PCE. The soil samples and groundwater were analyzed for the presence of VOCs including PCE via Environmental Protection Agency (EPA) Method 8260, DRO and ORO via NWTPH-Dx, as well as total and dissolved (groundwater) metals via EPA Method 200.8. The Summa air samples were analyzed for vinyl chloride; trans-1,2-Dichloroethene; cis-1,2-Dichloroethene; TCE; and PCE via EPA Method TO-15.

The chemical testing was designed to detect the contaminants suspected to be present in the samples collected. The testing plan included tests that provide Quality Assurance (QA) and techniques that provide Quality Control (QC) over the chemical analysis. A completed chain of custody record accompanied each sample shipment to the analytical laboratory (OnSite Environmental in Redmond, Washington or Friedman & Bruya, Inc. in Seattle, Washington). The chain of custody records provide written documentation regarding sample collection and handling, identify the persons involved in the chain of sample possession, and a written record of requested analytical parameters.

The analytical laboratory provided QA/QC control, including surrogate recoveries for each sample, method blank results, duplicate analysis, and laboratory control samples. All analytical laboratory QA/QC results were within the required limits.

6.0 CONCEPTUAL SITE MODEL

All field work completed by BMEC at the Site since February 2022, characterized the nature and extent of contamination sufficiently to complete the following conceptual site model (CSM). **Figure 6** is an illustration of the site CSM.

6.1 CHEMICALS OF CONCERN PER MEDIA

As a result of the February 2022 Subsurface Investigation, COCs were determined via laboratory analyses as the following:

- TPH-G – **soil**
- TPH-D – **soil, groundwater**
- TPH-O – **soil, groundwater**

- BTEX – not an issue
- PCE – not detected in soil; detected in groundwater but at a concentration less than the CUL
- Naphthalene and PAHs – not an issue
- Arsenic - **groundwater**
- Cadmium – **soil**
- Chromium - **soil**
- Lead – not an issue
- PCBs – not an issue

Tables 1 - 3 summarize the analytical results of the soil samples collected in February 2022. **Tables 4 – 6** summarize the analytical results of the groundwater samples collected in February 2022.

As a result of the July 2022 Dry Well Removal, COC analyses of soil sample results were as follows (NOTE: groundwater was not encountered nor sampled):

- TPH-G – non-detect in soil
- TPH-D – detected in soil but at a concentration less than the CUL
- TPH-O – detected in soil but at a concentration less than the CUL
- BTEX – non-detect in soil
- PCE – not analyzed
- Arsenic – non-detect in soil
- Cadmium – non-detect in soil
- Chromium – non-detect in soil
- Lead – non-detect in soil
- Barium, silver, and selenium – analyzed for, but not an issue

As a result of the September 2022 Additional Subsurface Investigation, only soil samples were obtained for analysis and COCs were updated as follows:

- TPH-G – non-detect in soil
- TPH-D – non-detect in soil
- TPH-O – non-detect in soil

- BTEX – non-detect in soil
- Naphthalene – not an issue
- PCE - non-detect in soil
- Arsenic – non-detect in soil
- Cadmium – non-detect in soil
- Chromium – detected in soil but at concentrations less than the CULs
- Lead – detected in soil but at concentrations less than the CULs
- Mercury – non-detect in soil
- Barium, silver, and selenium – not an issue

Tables 1 - 3 summarize the analytical results of the soil samples collected in September 2022.

As a result of the October 2022 GWSE, COCs were updated as follows:

- TPH-G – non-detect in groundwater
- TPH-D – non-detect in groundwater
- TPH-O – non-detect in groundwater
- BTEX – non-detect in groundwater
- PCE – detected but not at a concentration exceeding the CUL
- Arsenic – **groundwater**
- Cadmium – non-detect in groundwater
- Chromium – **groundwater**
- Lead – **groundwater**
- Mercury – detected in groundwater but a concentration less than the CUL

Tables 4 – 6 summarize the analytical results of the groundwater samples collected in October 2022.

As a result of the December 2022 GWSE, COCs were updated as follows:

- TPH-G – non-detect in groundwater
- TPH-D - non-detect in groundwater
- TPH-O – detected in groundwater but not at concentrations exceeding the CULs

- Benzene - detected in groundwater but not at a concentration exceeding the CUL
- TEX – non-detect in groundwater
- PCE - detected in groundwater but not at a concentration exceeding the CUL
- Arsenic **– groundwater**
- Cadmium – non-detect in groundwater
- Chromium – **groundwater**
- Lead – **groundwater**
- Mercury - **groundwater**

Tables 4 – 6 summarize the analytical results of the groundwater samples collected in December 2022.

As a result of the March 2023 GWSE, COCs were updated as follows:

- TPH-G – not an issue
- TPH-D – non-detect in groundwater
- TPH-O - detected but not at a concentration exceeding the CUL
- BTEX – not an issue
- PCE - detected but not at a concentration exceeding the CUL
- Arsenic – **groundwater**
- Cadmium – **groundwater** (albeit from well MW3)
- Chromium – **groundwater**
- Lead – **groundwater**
- Mercury - detected but not at a concentration exceeding the CUL

Tables 4 – 6 summarize the analytical results of the groundwater samples collected in March 2023.

As a result of the May 2023 soil sampling event, only soil samples were obtained for analyses and COCs were updated as follows:

- TPH-D – non-detect in soil
- TPH-O – non-detect in soil
- PCE - detected but not at a concentration exceeding the CUL

- Arsenic – non-detect in soil
- Cadmium – non-detect in soil
- Chromium – detected but not at a concentration exceeding the CUL
- Lead – non-detect in soil
- Mercury - detected but not at a concentration exceeding the CUL

Tables 1 – 3 summarize the analytical results of the soil samples collected in May 2023.

As a result of the June 2023 GWSE, COCs were updated as follows:

- TPH-D – non-detect in groundwater
- TPH-O – non-detect in groundwater
- PCE - detected but not at a concentration exceeding the CUL
- Arsenic – **groundwater**
- Cadmium – non-detect in groundwater
- Chromium – **groundwater**
- Lead - detected but not at a concentration exceeding the CUL
- Mercury – non-detect in groundwater

Tables 4 – 6 summarize the analytical results of the groundwater samples collected in June 2023.

As a result of the September 2023 GWSE, COCs were updated as follows:

- TPH-D – non-detect in groundwater
- TPH-O - detected but not at a concentration exceeding the CUL
- PCE – **groundwater**
- Arsenic – non-detect in groundwater
- Cadmium – non-detect in groundwater
- Chromium – detected but not at a concentration exceeding the CUL
- Lead – detected but not at a concentration exceeding the CUL
- Mercury – non-detect in groundwater

Tables 4 – 6 summarize the analytical results of the groundwater samples collected in September 2023.

As a result of the December 2023 GWSE, COCs were updated as follows:

- TPH-D – non-detect in groundwater
- TPH-O – non-detect in groundwater
- PCE - detected but not at a concentration exceeding the CUL
- Arsenic – detected but not at a concentration exceeding the CUL
- Cadmium – non-detect in groundwater
- Chromium – detected but not at a concentration exceeding the CUL
- Lead – detected but not at a concentration exceeding the CUL
- Mercury - non-detect in groundwater

Tables 4 – 6 summarize the analytical results of the groundwater samples collected in December 2023.

As a result of the March 2024 GWSE, COCs were updated as follows:

- TPH-D – not an issue
- TPH-O – not an issue
- PCE - detected but not at a concentration exceeding the CUL
- Arsenic - non-detect in groundwater
- Cadmium - non-detect in groundwater
- Chromium - non-detect in groundwater
- Lead - non-detect in groundwater
- Mercury - non-detect in groundwater

Tables 4 – 6 summarize the analytical results of the groundwater samples collected in March 2024.

As a result of the June 2024 GWSE, COCs were updated as follows:

- PCE - detected but not at a concentration exceeding the CUL
- Arsenic – non-detect in groundwater
- Cadmium – non-detect in groundwater
- Chromium – detected but not at a concentration exceeding the CUL
- Lead – detected but not at a concentration exceeding the CUL

- Mercury - non-detect in groundwater

Tables 4 – 6 summarize the analytical results of the groundwater samples collected in June 2024.

As a result of the June 2024 Tier II Vapor Intrusion Assessment, COCs were updated as follows:

- PCE – **indoor air (potentially)**

The following conclusions have been drawn from the previously stated COCs per medium (i.e., soil, groundwater, and air) during the BMEC field activities conducted since February 2022:

- Groundwater samples from all nine monitoring wells (MW1, MW2, MW3A, MW4, MW5, MW6, MW7, MW8, and MW9) are well below CULs for TPH-G, TPH-D, TPH-O, BTEX, naphthalene, and heavy metals. PCE in groundwater results have been less than the CUL for three consecutive quarterly GWSEs. Hence, subsequent to one more quarterly GWSE with PCE results less than 5 µg/L, groundwater is no longer a potential complete pathway source to any receptor.

- Soil samples collected from the vadose zone for all potential COCs have yielded results less than the respective CULs, cadmium in soil sample SB1-2-1-22-10' at a concentration of 2.5 mg/Kg and chromium in soil sample SB2-2-1-22-5' at a concentration of 34 mg/Kg would be the lone exceptions. However, both soil samples were remediated via excavation during the July 2022 Dry Well Removal Event. **Figure 3** illustrates the locations of borings B1 and B2. **Figure 4** illustrates the locations of confirmation soil samples C6, C7, and C8 which were non-detect for cadmium and chromium, respectively.

- The Tier II VI events conducted on June 25, 2024 indicated that PCE air detections in Summa canisters collected inside the office space may qualify as COCs and require additional testing and/or remediation.

6.2 NATURE AND EXTENT OF CONTAMINATION

The nature and extent of the only identified COC which is PCE is possibly related to off-site migration from an up-gradient source most likely related to the well-documented PCE-impacted groundwater in the YRRA. Indoor air PCE detections on June 25, 2024, may have been due to automobile engine repair activities and not related to volatilization of chlorinated solvents in soil or groundwater beneath the building.

6.3 CONTAMINANT FATE AND TRANSPORT

The conceptual site model, along with the exposure pathway scenario, is shown graphically on **Figure 6** – Conceptual Site Model.

6.4 TERRESTRIAL ECOLOGICAL EVALUATION

To BMEC's knowledge regarding lack of surficial soil and/or surface water contamination, this site does not meet the criteria requiring a terrestrial ecological evaluation (TEE) under WAC 173-340-7491(1)(b).

7.0 GEOLOGY AND HYDROGEOLOGY

Regionally, the geology of the Yakima Valley is shaped primarily by tectonic activity manifesting in folded hills and mountains. The Site is underlain by the Columbia River Basalt Group (CRBG) of Miocene age (i.e., 6 to 17 million years old) and the depth from the ground surface to the top of the CRBG varies throughout the valley. Throughout the Site, lithology of the soils consists of fine-grained sands and silts intermixed with coarse-grained gravels and cobbles to depths of roughly 20 feet bgs followed by sands and gravels to minimum depths of 30 feet bgs, the greatest depth of site exploration by BMEC.

Based on the subsurface investigation field activities conducted at the Site on September 27 and 28, 2022, the following geologic soil conditions were encountered in soil borings MW1 and MW3 through MW6:

- 0 – 0.25': Asphalt.
- 0.25 – 2': Brown SILT (ML);
- 2 – 20': Brown to dark brown, sandy, well-rounded, coarse GRAVEL & COBBLES, with little silt, loose (GW); and
- 20 - 25': Brown – gray, SAND & GRAVEL, well-rounded, coarse, loose, wet – very wet (SP/GP).

During the May 19, 2023, monitoring well installation activities, soil lithology in wells MW3A and MW7 through MW9 was similar to the afore-mentioned soil with predominantly brown to gray-brown sandy, rounded, coarse GRAVELS (GW) from 2.5 to 30 feet bgs and groundwater saturation noted from 18 - 22 feet bgs. **Figures 7 and 8** are geologic transects across the Site from northwest to southeast and southwest to northeast, respectively. **Figures 9 and 10** are the corresponding geologic cross-sections.

During the June 13, 2023, GWSE, depth to groundwater was measured around 18 - 20 feet below top of casing (btoc) in all nine wells. Groundwater flow direction was to the southeast at 0.004 feet per foot on June 13, 2023. During the September 26, 2023, GWSE, depth to groundwater was measured around 16 – 18 feet btoc in all nine wells. Groundwater flow direction was to the southeast at 0.005 – 0.006 feet per foot. During the December 27, 2023, GWSE, depth to groundwater was measured around 19 – 20.5 feet btoc in all nine wells. Groundwater flow direction was to the southeast at 0.009 feet per foot.

During the most recent GWSE conducted on June 5, 2024, depth to groundwater was measured around 17.5 – 19.5 feet btoc in all nine wells. Groundwater flow direction was to the southeast at 0.05 feet per foot. **Figures 11** illustrates the groundwater flow direction based on the depth-to water data collected during the June 5, 2024, GWSE. **Table 7** summarizes the depths-to-water collected during all eight GWSEs conducted at the Site by BMEC.

Over the past eight GWSEs conducted at the Site by BMEC personnel, the groundwater flow direction of the shallow aquifer has been determined to be to the southeast toward the Yakima River which is approximately 1.5 miles east of the Site. The hydraulic gradient of the shallow aquifer has been calculated to range between 0.004 and 0.05 feet per foot. Per information obtained from Ecology regarding the overall regional hydrogeology, the

estimated flow direction in the deeper aquifer beneath the Site is also to the southeast with an approximate hydraulic gradient of 0.004 feet per foot.

8.0 PROPOSED CLEANUP STANDARDS

By definition, the proposed cleanup standards under MTCA are CULs and points of compliance (POCs). For this Site the proposed cleanup standards are the MTCA Method A CULs for Unrestricted Land Use. The remainder of this section shall elaborate on the applicable CULs per media and associated POCs.

During the subsurface field activities and GWSEs conducted at the Site since February 2, 2022, by BMEC personnel, soil and/or groundwater were observed (and confirmed via laboratory analysis) to be mildly impacted by petroleum hydrocarbons, in particular diesel and heavy oil, as well as metals. Additionally, groundwater was observed to be mildly impacted by PCE. Since February 2022, diesel, heavy oil, metals, and PCE concentrations in groundwater have attenuated naturally. Furthermore, via excavation and proper backfill in July 2022, diesel, heavy oil, and metals contamination in soil near the former dry wells was remediated.

The results of the Tier II VIA conducted on June 25, 2024, indicated that PCE air detections in Summa canisters collected inside the main building slightly exceeded air quality standards for indoor air screening levels and may require mitigation, subsequent to a second Tier II VIA to be conducted at the Site.

No sediment exists onsite nor within ¼-mile of the site. Hence, contaminant impact to sediment media is not applicable due to an incomplete pathway.

No surface water exists onsite nor within ¼-mile of the site. Hence, contaminant impact to surface water media is not applicable due to an incomplete pathway.

8.1 APPLICABLE REGULATIONS

The work documented here is intended to comply with the laws and regulations of the State of Washington. The work to be performed while implementing the selected remedy will comply with MTCA (70.105D RCW) and its implementing regulations (WAC 173-340). Applicable or Relevant and Appropriate Regulations (ARARs) for the selected remedy (if necessary) will be MTCA, and all potential exposure pathways will be addressed. MTCA requires that cleanup actions meet cleanup standards. These standards are comprised of both CULs and POCs. A CUL is the concentration of a hazardous substance in soil, water, air, or sediment that is determined to be protective of human health and the environment under specified exposure conditions. A POC defines the point or points on a site where CULs must be met. MTCA provides three options for establishing CULs, as described below:

• Method A: Applicable laws and tables. Method A is designed for cleanups that are relatively straightforward or involve only a few hazardous substances. This method consists of tabulated CULs for the most common hazardous substances found in soil and groundwater, including those constituents identified at this Site.

• Method B: Known as the Universal Method, MTCA Method B CULs are established using applicable state and federal laws and the risk equations and other requirements specified for each medium. Method B is divided into two tiers – standard and modified. Standard Method B uses generic default assumptions to calculate CULs. Modified Method B provides for the use of chemical-specific or site-specific information to change selected default assumptions.

For both standard and modified Method B, the human health risk level for individual carcinogens must not exceed one-in-a-million. If more than one type of hazardous substance is present, the total risk level at the Site may not exceed 1 in 100,000. Levels for non-carcinogens cannot exceed a hazard quotient of 1. In addition to accounting for human health impacts, the Method B CULs must account for potential terrestrial or aquatic ecological impacts, if present at the Site.

• Method C: Known as the Conditional Method, MTCA Method C is similar to Method B in that it is divided into two tiers – standard and modified. The main differences for Method C CULs vs Method B CULs are: (1) In Method C, CULs are based on less stringent exposure assumptions, and (2) the lifetime cancer risk is set at 1 in 100,000 for both individual substances and for the total cancer risk caused by all substances at a site.

8.2 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

MTCA requires that cleanup actions comply with all legally applicable state and federal laws and regulations, and those requirements identified and determined to be applicable or relevant and appropriate requirements (ARARs) for the Site. As part of the cleanup standard determination, MTCA Method A CULs were compared to applicable state and federal standards to ensure the most stringent and protective CULs were selected for the application at the Site. The following state and federal standards for groundwater were reviewed and found to be equivalent to or less stringent than that of MTCA Method A CULs:

• Maximum Contaminant Levels (MCLs) established under the Safe Drinking Water Act (40 CFR 141).

• MCL goals for non-carcinogens established under the State Drinking Water Act (40 CFR 141).

• MCLs established by the state board of health (WAC 246-290).

There are no chemical specific ARARs that apply to soil. Therefore, MTCA Method A soil CULs for unrestricted land use are the most stringent applicable CULs.

In addition to CULs, the following local, state, and federal regulations may apply to the Site:

• The primary ARAR is the MTCA cleanup regulation (Chapter 70.105D, RCW; Chapter 173-340 WAC), which outlines requirements for the development of cleanup standards and procedures for the development and implementation of a cleanup under MTCA.

• Washington Solid Waste Management Act (Chapter 70.95 RCW) and its implementing regulation, Criteria for Municipal Solid Waste Landfills (Chapter 173-351 WAC). These regulations established a comprehensive statewide program for soil waste management, including proper handling and disposal. The management of any contaminated soil removal from the Site would be conducted in accordance with these regulations. Removal of all diesel-impacted, heavy oil-impacted, and heavy metals-impacted soil during the dry well removal activities in July 2022, adhered to these regulations.

• Hazardous Waste Operations (Chapter 296-843 WAC). These requirements establish safety requirements for workers conducting investigation and cleanup operations at sites containing hazardous materials. These requirements would be applicable to onsite cleanup activities and would be addressed in a health and safety plan prepared specifically for these activities. All onsite field activities conducted by and/or supervised by BMEC personnel complied with

these safety requirements.

• Federal Clean Water Act, National Pollutant Discharge Elimination System (NPDES) Permit, and State Construction Stormwater General Permit. Construction activities that disturb one or more acres of land typically need to obtain an NPDES Construction Stormwater General Permit from Ecology. A substantive requirement would be to prepare a stormwater pollution prevention plan (SWPPP), prior to the earthwork activities. The SWPPP would document planned procedures designed to prevent stormwater pollution by controlling erosion of exposed soil and by containing soil stockpiles and other materials that could contribute pollutants to stormwater. This would apply to the Site if the remediation is conducted as part of a block-wide redevelopment. Such actions were not necessary at this Site during any field activities conducted by BMEC personnel in February 2022 or thereafter.

• Local Requirement (Yakima County). Any and all permits (e.g., grading and building, traffic control permits, etc.) required by local governments (city & county) will be obtained in order to implement the remedial actions selected. None of these requirements were applicable to field activities performed by BMEC at this Site.

8.3 REMEDIAL ACTION OBJECTIVES

Remedial Action Objectives (RAOs) have been established for the Site to provide the technical basis for evaluating remedial alternatives that protect human health and the environment under the MTCA process (WAC 173-340-350). Based on the assessment of Site-specific conditions and the potentially applicable CULs presented below, the RAOs for the Site have been established as follows:

1) Reduce concentrations of COCs in Site groundwater to levels protective of human health and the environment in a reasonable restoration time frame to mitigate risks associated with the following pathways and migration routes.

- Ingestion by onsite workers.

2) Reduce concentrations of COCs in Site soils to levels protective of human health and the environment in a reasonable restoration time frame to mitigate risks associated with the following pathways and migration routes.

- Direct contact (dermal absorption, ingestion & vapor inhalation) pathway & groundwater leaching (soil to groundwater) pathway.

3) Reduce concentrations of COCs in vapors inside the automobile dealership building and connected automobile repair shop portion of the building to levels protective of human health and the environment in a reasonable restoration time frame to mitigate risks associated with the following pathways and migration routes.

- Breathing vapors by workers and, potentially, in store customers/visitors.

8.4 PROPOSED CLEANUP LEVELS

MTCA Method A CULs for the groundwater exposure pathway are appropriate for the Site. Similarly, MTCA Method A CULs for the soil exposure pathway are appropriate for the Site. MTCA Method B CULs are appropriate for the air exposure pathway and for constituents where MTCA Method A CULs are not available. These established CULs are based on the most stringent values for each exposure pathway and are considered appropriate for the Site

because it is a typical automobile sales facility and repair garage without a complex mixture of COCs.

In the case of the indoor air CULs, ambient air concentrations of all potential COCs, in particular PCE, are expected to be slightly excessive as human health risks. Thus, proposed MTCA CULs for the Site COCs are as follows:

SOIL (MTCA Method A):

- TPH-G = 100 mg/Kg (since benzene is/was not present in Site soils)
- TPH-D = 2,000 mg/Kg
- TPH-O = 2,000 mg/Kg
- Naphthalenes = 5 mg/Kg
- Arsenic = 20 mg/Kg
- Cadmium = 2 mg/Kg
- Chromium VI = 19 mg/Kg
- Lead = 250 mg/Kg
- Mercury = 2 mg/Kg
- PCE = 0.05 mg/Kg

GROUNDWATER (MTCA Method A):

- TPH-G = 1,000 µg/L (since benzene is/was not present in Site groundwater)
- TPH-D = 500 µg/L
- TPH-O = 500 µg/L
- Naphthalenes = 160 µg/L
- Arsenic = 5 µg/L
- Cadmium = 5 µg/L
- Chromium = 50 µg/L
- Lead = 15 µg/L
- Mercury = 2 µg/L
- PCE = 5 µg/L

INDOOR AIR (Method B – Cancer):

- TPH-G = NA
- TPH-D = NA
- TPH-O = NA
- Naphthalenes = NA
- Arsenic = NA
- Cadmium = NA
- Chromium = NA
- Lead = NA
- Mercury = NA
- PCE = 9.62 µg/m^3

8.5 POINT OF COMPLIANCES

The POC is the location where the enforcement limits that are set in accordance with WAC 173-200-050 will be measured and cannot be exceeded (WAC 173-200-060 and Ecology, 2005). Once the CULs have been attained at the defined POCs, the impacts present beneath the Site will no longer be considered a risk to human health or the environment. Standard POCs will be used for the Site as follows:

- SOIL: Direct Contact Pathway – For soil CULs based on the protection from direct soil contact, the POCs are throughout the Site from the ground surface to 15 feet bgs.
- SOIL: Soil Leaching to Groundwater Pathway - For soil CULs based on the protection of groundwater, the POCs are throughout the Site.
- GROUNDWATER: Ingestion and Inhalation - For groundwater CULs based on the protection of drinking water, the POCs are throughout the Site and vertically extending from 10 – 30 feet bgs.
- INDOOR AIR: Indoor breathing air throughout the building interior, particularly for PCE.
- OUTDOOR AIR: Outdoor breathing air within Site property boundaries.
- SEDIMENT: Not applicable.
- SURFACE WATER: Not applicable.

8.6 AREAS REQUIRING REMEDIATION

Areas to be addressed by final remediation for the Site have been determined by laboratory analytical results of soil, groundwater, and air vapor samples collected since February 2022. Based on the analytical results of the soil and groundwater samples presented in **Tables 1**

through 6 and Tier II VIA Report, the following conclusions regarding necessity for additional remediation of both media were determined:

SOIL: No remediation necessary – See **Tables 1 through 3**.

GROUNDWATER: No remediation necessary – See **Tables 4 through 6**.

AIR VAPOR: Remediation via more efficient air flow inside the building and a minimum of one more Tier II VIA are necessary at the Site (See the **Tier II VIA Report in Appendix F)**.

9.0 FEASIBILITY STUDY

Based on the laboratory analytical results of all of the soil, groundwater, and VIA samples collected, as well as the results of the Dry Well Removal efforts, BMEC concludes that no further action (NFA) at the Site is warranted involving the soil. Subsequent to the last (4^{th}) of four consecutive quarters of groundwater sampling at the Site, assuming PCE concentrations in groundwater do not exceed the CUL of 5 µg/L, NFA at the Site is warranted involving the groundwater. However, based on the results of the June 30, 2024 Tier II VIA report, remediation via more efficient air flow inside the building and a minimum of one more Tier II VIA are necessary at the Site. The cost of such efforts (GWSE and indoor air assessment and air flow enhancement) are as follows:

- Driller to decommission all nine monitoring wells = $20,000
- One more GWSE conducted in September 2024 = $20,000
- Indoor air assessment (Tier II VIA) and indoor air flow enhancement = $93,500

Thus, the total cost of the "FS" for remediation via monitoring well decommissioning is approximately $133,500.

10.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

BMEC personnel have been involved in environmental field work conducted at the Site since February 2022. Based on the field work conducted at the Site since that time, BMEC concludes that no more soil assessment or remediation is warranted and assuming the September 2024 GWSE results yield PCE concentrations less than 5 µg/L in all nine groundwater samples, no more groundwater assessment or remediation is warranted. However, a minimum of one more Tier II VIA with enhanced indoor air flow enhancement is warranted. The costs anticipated for the one more GWSE, one more Tier II VIA, indoor air flow enhancement, along with decommissioning of the ten existing onsite monitoring wells, is outlined in Section 9.0 above.

11.0 REFERENCES

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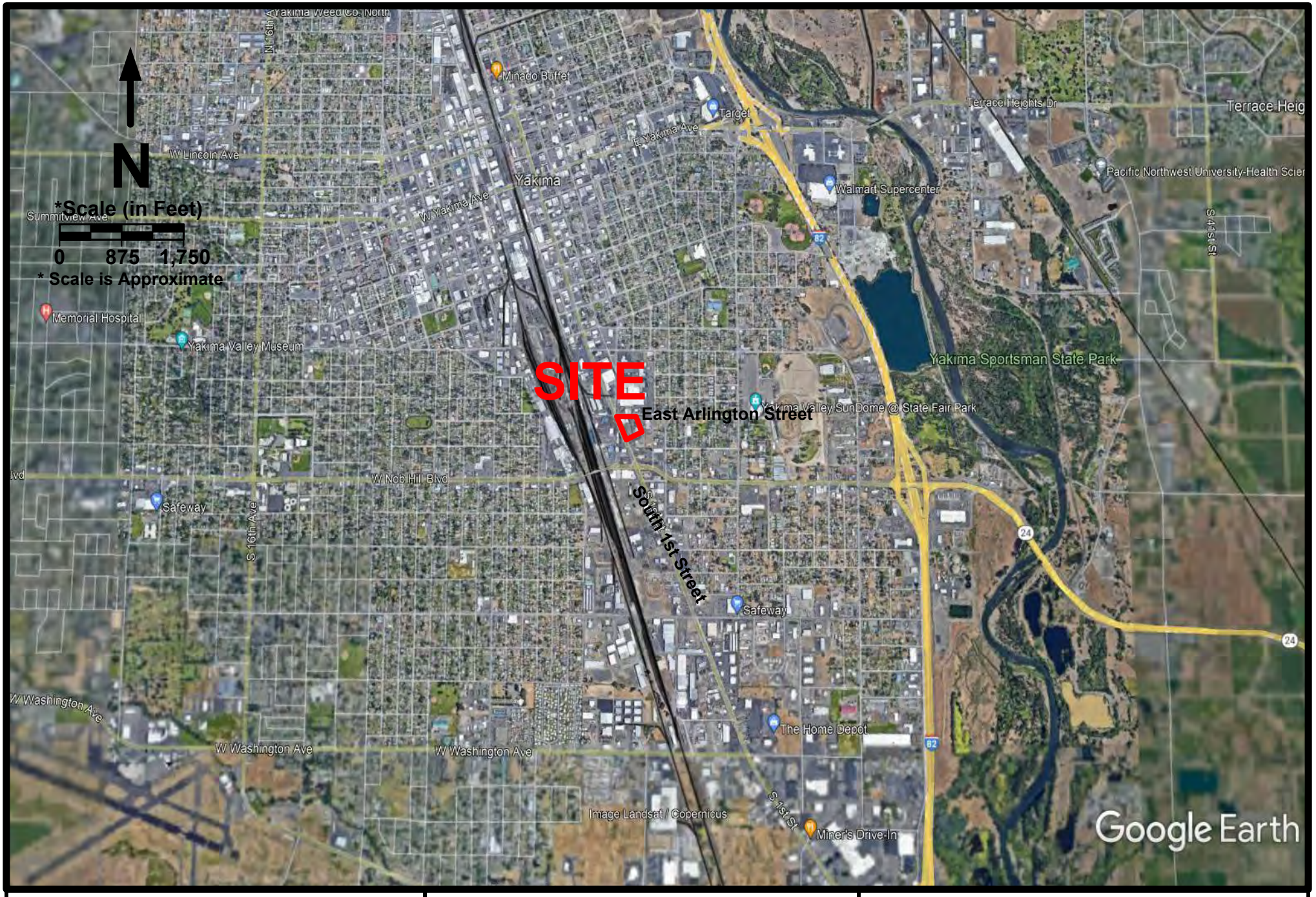
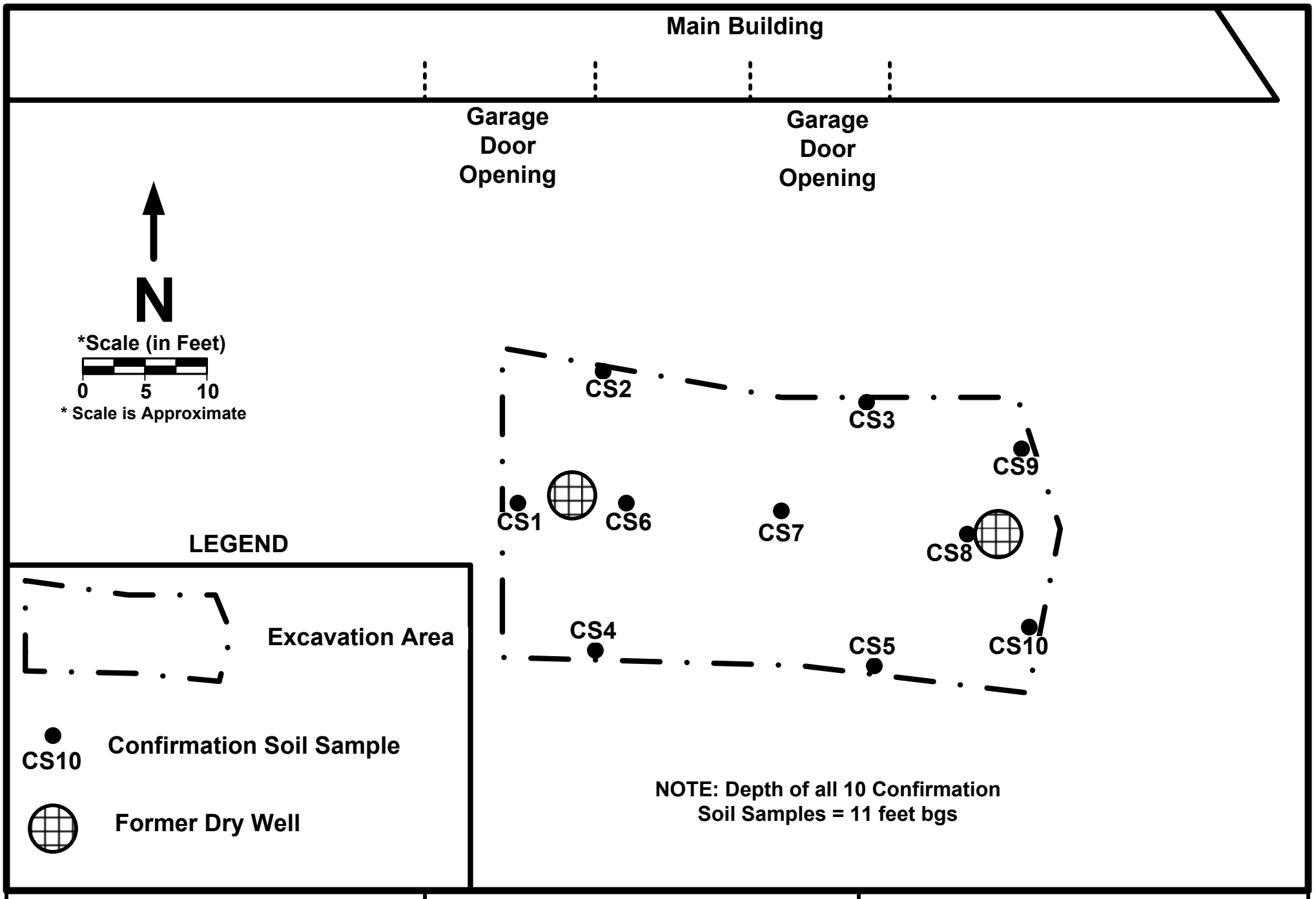


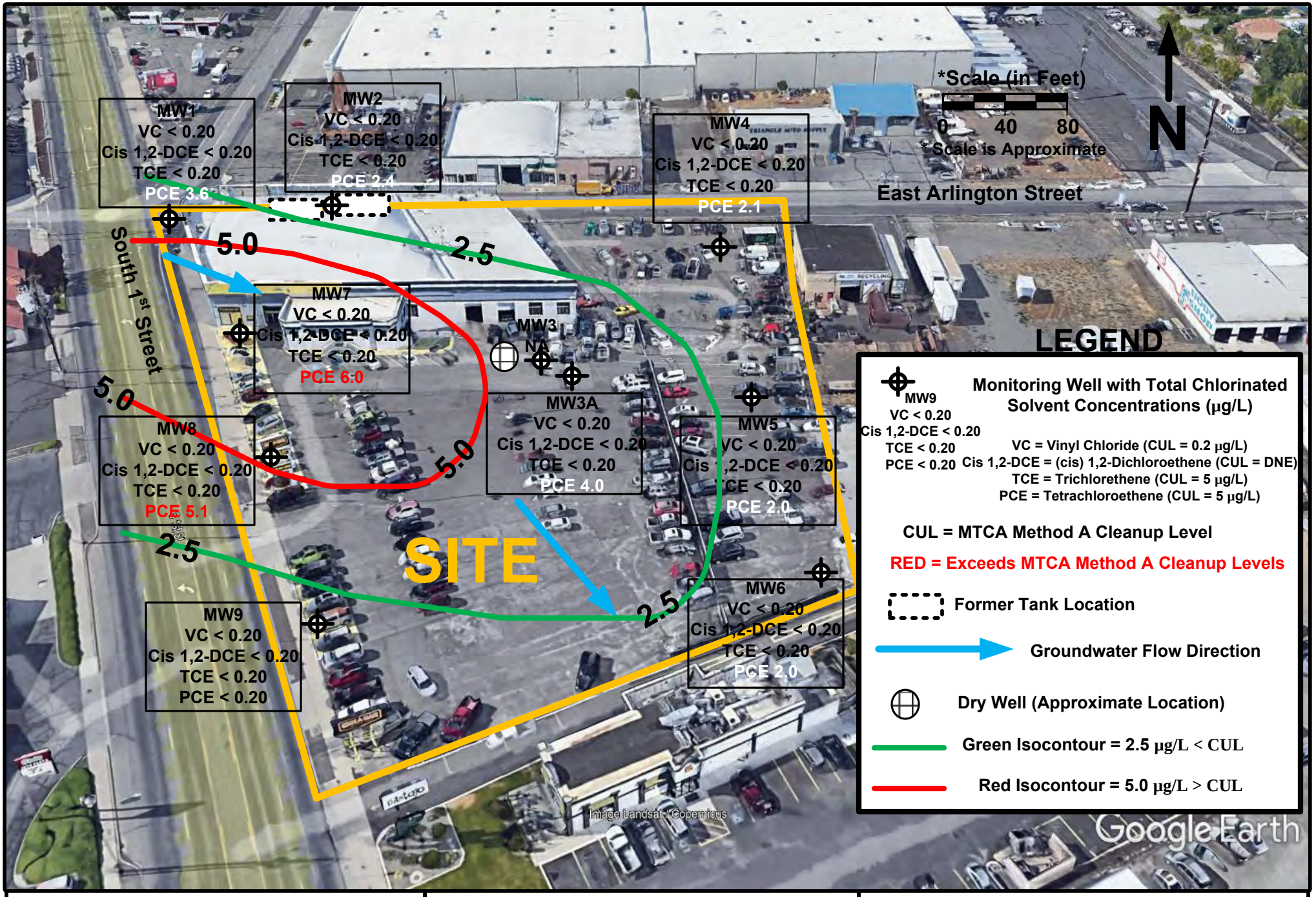
BMEC **P.O. Box 545/125 Main Street** **Waitsburg, Washington 99361**	**FIGURE 1 – SITE VICINITY MAP**	**Hahn Motors Company** **1201 South 1st Street** **Yakima, Washington 98901**

BMEC **P.O. Box 545/125 Main Street** **Waitsburg, Washington 99361**	**FIGURE 2 – SITE LOCATION MAP**	**Hahn Motors Company** **1201 South 1st Street** **Yakima, Washington 98901**

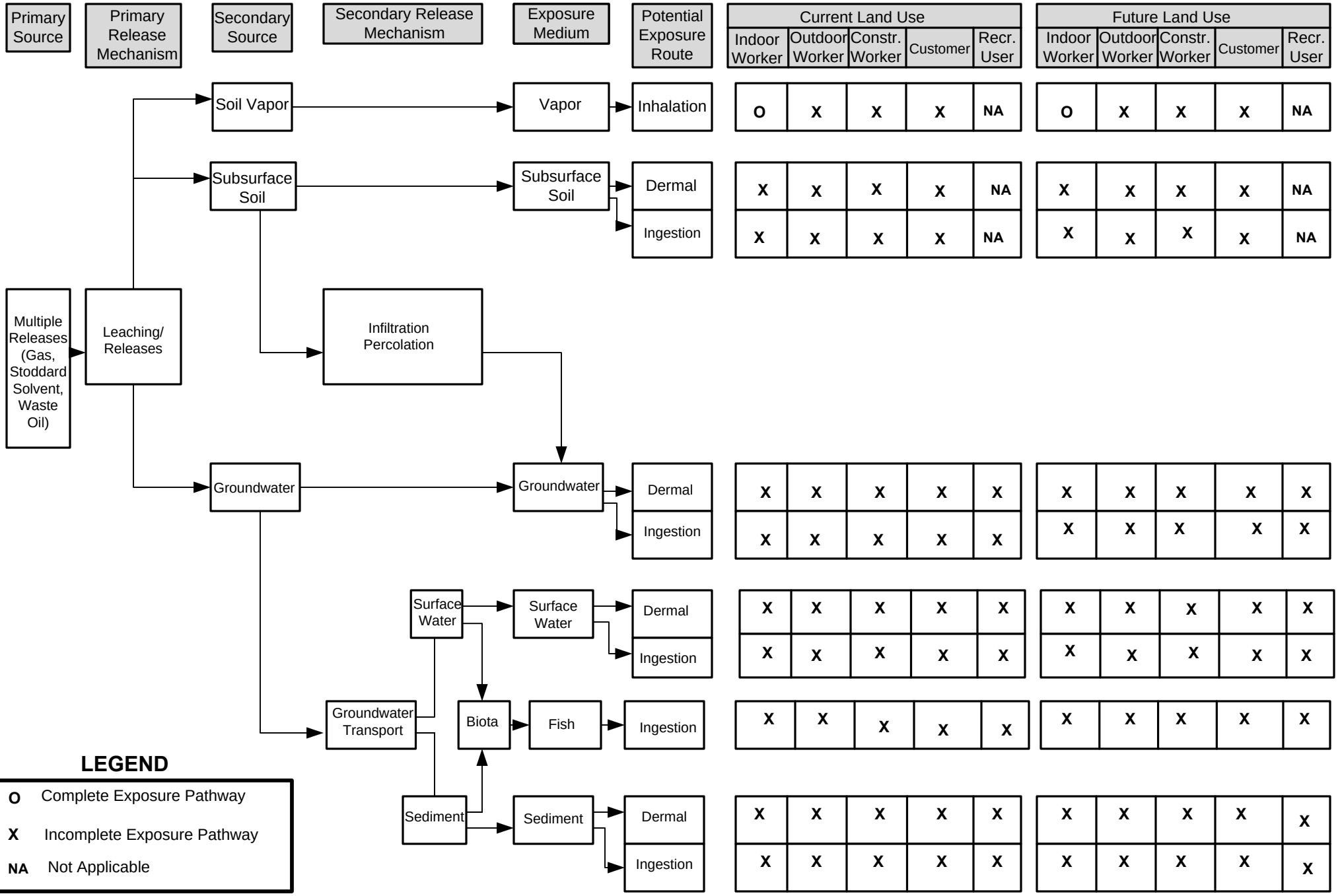
BMEC **P.O. Box 545/125 Main Street** **Waitsburg, Washington 99361**	**FIGURE 3** **SOIL BORINGS (2/1/22) AND DRY WELL EXCAVATION AREA (July 2022)**	**Hahn Motors Company** **1201 South 1st Street** **Yakima, Washington 98901**



BMEC P.O. Box 545/125 Main Street Waitsburg, Washington 99361	FIGURE 4 JULY 2022 DRY WELL EXCAVATION CONFIRMATION SOIL SAMPLES	Hahn Motors Company 1201 South 1st Street Yakima, Washington 98901



BMEC **P.O. Box 545/125 Main Street** **Waitsburg, Washington 99361**	**FIGURE 5 – CHLORINATED SOLVENTS IN GROUNDWATER (µg/L)** **SEPTEMBER 26, 2023**	**Hahn Motors Company** **1201 South 1st Street** **Yakima, Washington 98901** **VCP Project # CE 0529**



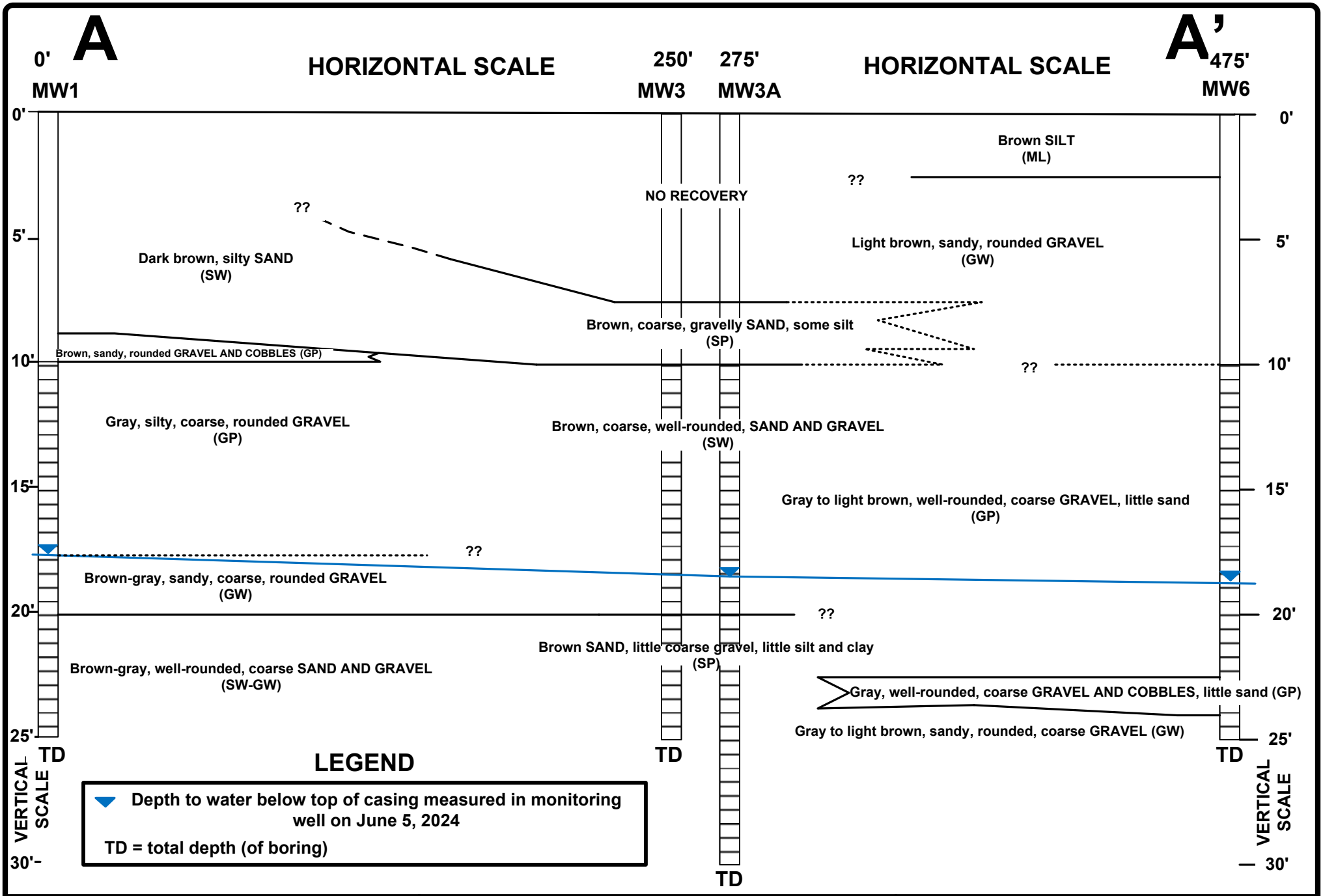
Parcel Number: 1-1580-30000-11000
Fac. Site ID#: 72111858
UST ID#: 11741
Cleanup Site ID #: 15283
PTAP Project # PC025

FIGURE 6
CONCEPTUAL SITE MODEL

REMEDIAL INVESTIGATION/FEASIBILITY STUDY
1201 SOUTH 1ST STREET
YAKIMA, WASHINGTON 98901

BMEC **P.O. Box 545/125 Main Street** **Waitsburg, Washington 99361**	**FIGURE 7** **GEOLOGIC TRANSECT A - A'**	**Hahn Motors Company** **1201 South 1st Street** **Yakima, Washington 98901** **VCP Project # CE 0529**

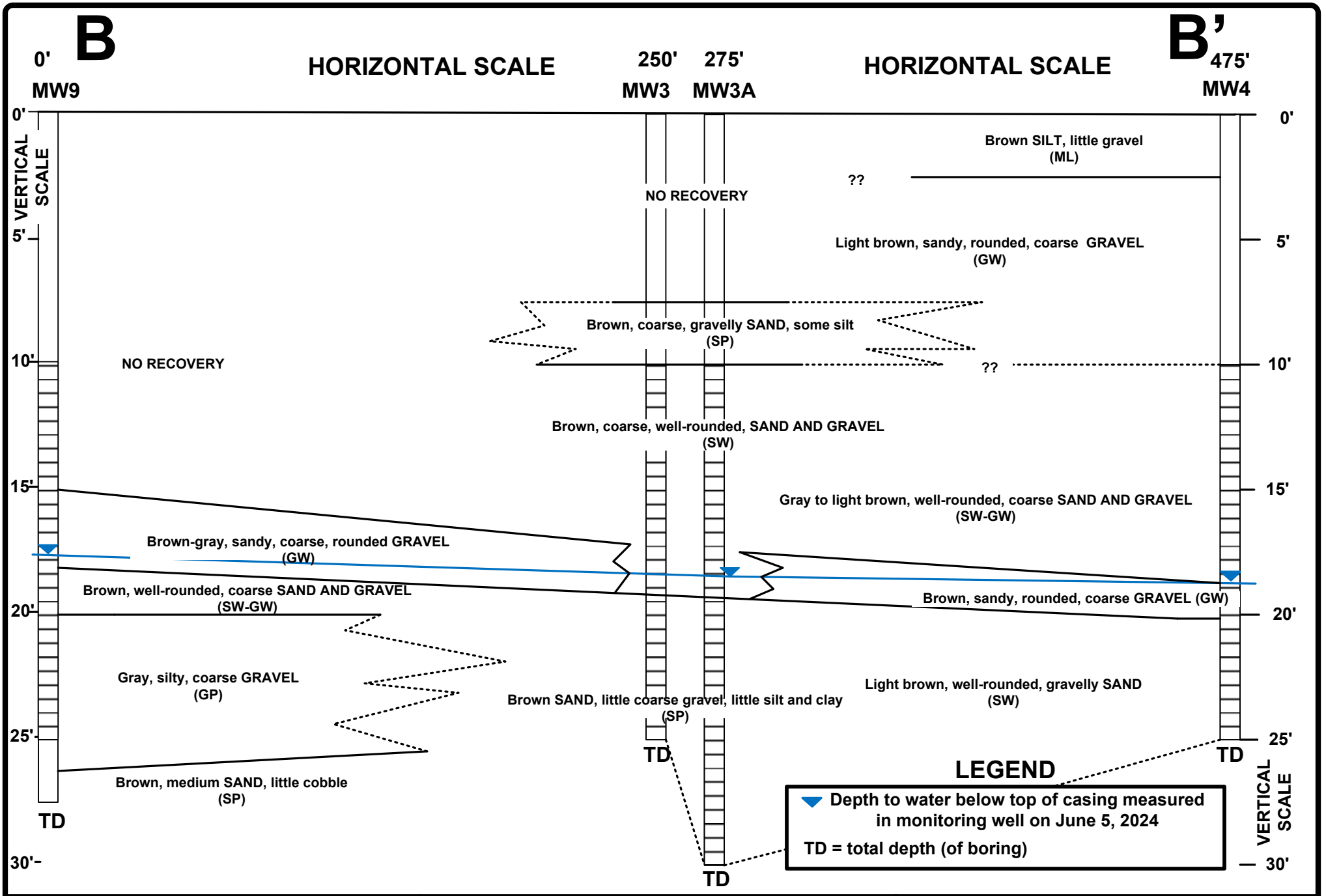
BMEC **P.O. Box 545/125 Main Street** **Waitsburg, Washington 99361**	**FIGURE 8** **GEOLOGIC TRANSECT B - B'**	**Hahn Motors Company** **1201 South 1st Street** **Yakima, Washington 98901** **VCP Project # CE 0529**



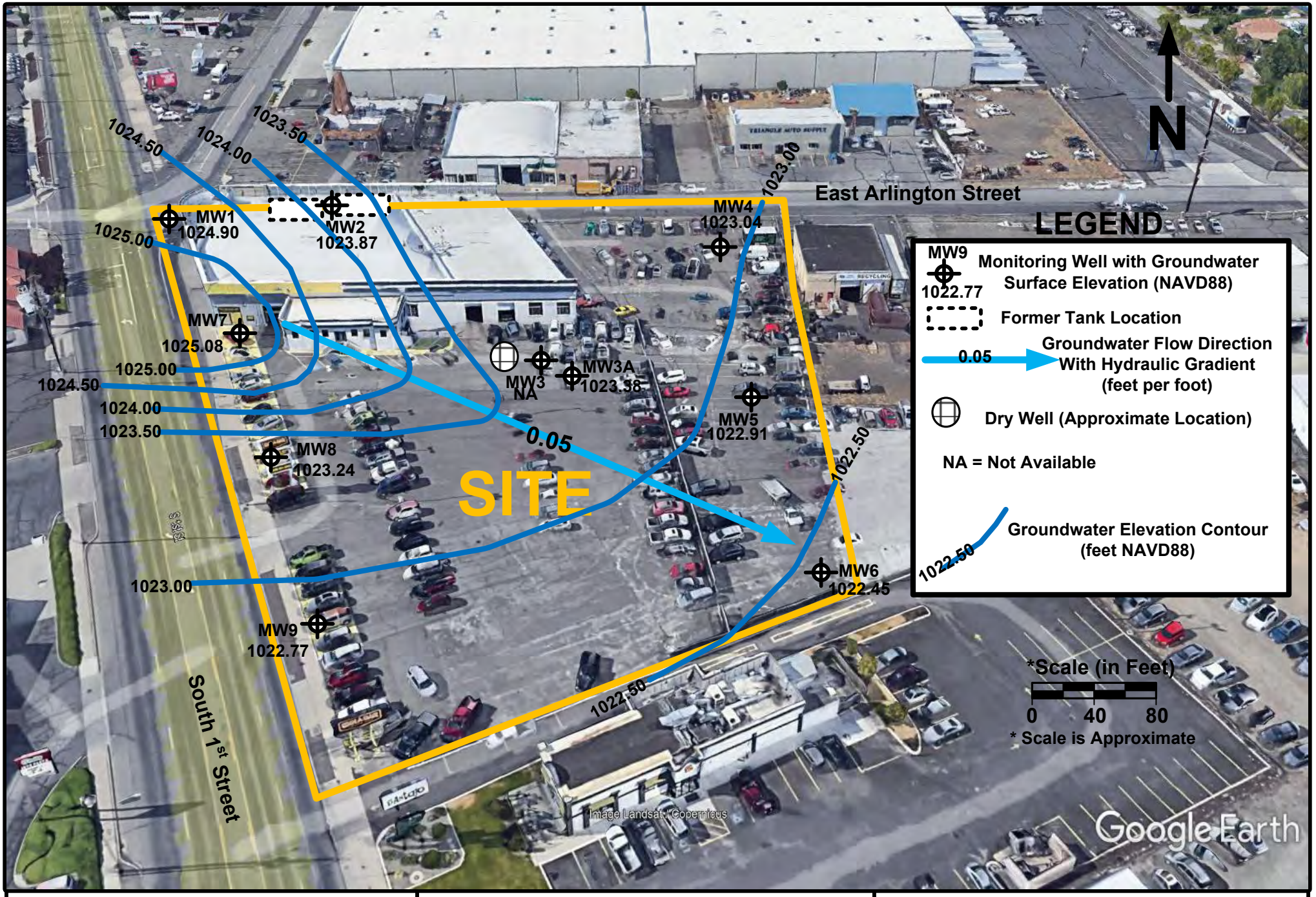
BMEC
P.O. Box 525/125 Main Street
Waitsburg, Washington 99361

FIGURE 9:
GEOLOGIC CROSS-SECTION A - A'

Hahn Motors Company
1201 South 1st Street
Yakima, WA 98901
VCP Project # CE 0529



BMEC P.O. Box 525/125 Main Street Waitsburg, Washington 99361	**FIGURE 10:** **GEOLOGIC CROSS-SECTION B - B'**	Hahn Motors Company 1201 South 1st Street Yakima, WA 98901 VCP Project # CE 0529



BMEC **P.O. Box 545/125 Main Street** **Waitsburg, Washington 99361**	**FIGURE 11** **GROUNDWATER FLOW DIRECTION** **JUNE 5, 2024**	**Hahn Motors Company** **1201 South 1st Street** **Yakima, Washington 98901** **VCP Project # CE 0529**

TABLE 1

Soil Sample Results - Total Petroleum Hydrocarbons (mg/Kg)[1]

1201 South First Street

Yakima, Washington 98901

Sample I.D.	Depth (ft bsg)	Date Collected	TPH-Diesel and Heavy Oil by Northwest Method NWTPH-Dx		TPH-Gasoline by Northwest Method NWTPH-Gx
			TPH-D	TPH-O	
SUBSURFACE INVESTIGATION (BMEC) - FEBRUARY 2022					
SB1-2-1-22-10'	10'	2/1/22	**670**	**1400**	**220**
SB5-2-1-22-10'	10'	2/1/22	< 660	**6900**	NA
SB5-2-1-22-15'	15'	2/1/22	< 140	**1100**	NA
SUBSURFACE INVESTIGATION (BMEC) - SEPTEMBER 2022					
MW1-9-28-22-10'	10'	9/28/22	< 26	< 52	< 5.2
MW1-9-28-22-19'	19'	9/28/22	< 27	< 54	< 5.7
MW2-9-28-22-13'	13'	9/28/22	< 58	**660**	< 5.0
MW2-9-28-22-18'	18'	9/28/22	< 28	< 55	< 5.8
MW3-9-27-22-15'	15'	9/27/22	**76**	**300**	< 5.5
MW3-9-27-22-23'	23'	9/27/22	< 27	< 54	< 6.0
MW4-9-27-22-16'	16'	9/27/22	< 26	< 52	< 5.1
MW4-9-27-22-20'	20'	9/27/22	< 26	< 53	< 5.0
MW5-9-27-22-15'	15'	9/27/22	< 26	< 51	< 4.7
MW5-9-27-22-20'	20'	9/27/22	< 27	< 54	< 4.5
MW6-9-27-22-15'	15'	9/27/22	< 26	< 52	< 5.1
MW6-9-27-22-21'	21'	9/27/22	< 37	**1000**	< 5.5
MONITORING WELL INSTALLATION (BMEC) - MAY 2023					
MW3a-5-19-23-20'	20'	5/19/23	< 27	< 53	NA
MW3a-5-19-23-30'	30'	5/19/23	< 27	< 54	NA
MW7-5-19-23-18'	18'	5/19/23	< 27	< 54	NA
MW7-5-19-23-25'	25'	5/19/23	< 27	< 55	NA
MW8-5-19-23-18'	18'	5/19/23	< 26	< 52	NA
MW8-5-19-23-25'	25'	5/19/23	< 29	< 58	NA
MW9-5-19-23-18'	18'	5/19/23	< 26	< 53	NA
MW9-5-19-23-27'	27'	5/19/23	< 28	< 55	NA
Ecology MTCA Method A Soil Cleanup Levels for Unrestricted Land Use (mg/Kg)					
Unrestricted Land Use			2,000	2,000	30/100 [1]

Notes:

[1] MTCA Method A Cleanup Level for Unrestricted Land Use for TPH-G is 30 ppm if benzene is detected in subsurface soils or groundwater. If benzene is not detected, Cleanup Level is 100 ppm.

MTCA = Model Toxics Control Act

NA= Not Analyzed

ft bsg = feet below surface grade

mg/Kg = milligrams per Kilogram or parts per million (ppm)

BOLD = sample yielded detectable concentration of analyzed compound

TABLE 2

Soil Sample Results - Volatile Organic Compounds (mg/Kg)[1]

1201 South First Street

Yakima, Washington 98901

Sample I.D.	Depth (ft bsg)	Date Collected	Volatile Organic Compounds (VOCs) by EPA Method 8260D (mg/Kg)												
			Benzene	Toluene	Ethylbenzene	Total Xylenes	EDB	EDC	MTBE	Naphthalene	124-TMB	135-TMB	Vinyl Chloride	TCE	PCE
ADDITIONAL SUBSURFACE INVESTIGATION (BMEC) - SEPTEMBER 2022															
MW1-9-28-22-10'	10'	9/28/22	< 0.0011	< 0.0054	< 0.0011	< 0.0033	NA	< 0.0011	< 0.0011	< 0.0054	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011
MW1-9-28-22-19'	19'	9/28/22	< 0.0011	< 0.0056	< 0.0011	< 0.0033	NA	< 0.0011	< 0.0011	< 0.0056	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011
MW2-9-28-22-13'	13'	9/28/22	< 0.0011	< 0.0054	< 0.0011	< 0.0033	NA	< 0.0011	< 0.0011	< 0.0054	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011
MW2-9-28-22-18'	18'	9/28/22	< 0.0012	< 0.0061	< 0.0012	< 0.0036	NA	< 0.0012	< 0.0012	< 0.0061	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
MW3-9-27-22-15'	15'	9/27/22	< 0.0011	< 0.0054	< 0.0011	< 0.0033	NA	< 0.0011	< 0.0011	< 0.0054	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011
MW3-9-27-22-23'	23'	9/27/22	< 0.0011	< 0.0057	< 0.0011	< 0.0033	NA	< 0.0011	< 0.0011	< 0.0057	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011
MW4-9-27-22-16'	16'	9/27/22	< 0.0012	< 0.0060	< 0.0012	< 0.0036	NA	< 0.0012	< 0.0012	< 0.0060	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
MW4-9-27-22-20'	20'	9/27/22	< 0.0011	< 0.0054	< 0.0011	< 0.0033	NA	< 0.0011	< 0.0011	< 0.0054	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011
MW5-9-27-22-15'	15'	9/27/22	< 0.0010	< 0.0052	< 0.0010	< 0.0030	NA	< 0.0010	< 0.0010	< 0.0052	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
MW5-9-27-22-20'	20'	9/27/22	< 0.0010	< 0.0052	< 0.0010	< 0.0030	NA	< 0.0010	< 0.0010	< 0.0052	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
MW6-9-27-22-15'	15'	9/27/22	< 0.0011	< 0.0054	< 0.0011	< 0.0033	NA	< 0.0011	< 0.0011	< 0.0054	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011
MW6-9-27-22-21'	21'	9/27/22	< 0.0011	< 0.0053	< 0.0011	< 0.0033	NA	< 0.0011	< 0.0011	< 0.0053	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011
MONITORING WELL INSTALLATION (BMEC) - MAY 2023															
MW3a-5-19-23-20'	20'	5/19/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0013	< 0.0013	< 0.0013
MW3a-5-19-23-30'	30'	5/19/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.00095	< 0.00095	< 0.00095
MW7-5-19-23-18'	18'	5/19/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0011	< 0.0011	< 0.0011
MW7-5-19-23-25'	25'	5/19/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.00096	< 0.00096	**0.0018**
MW8-5-19-23-18'	18'	5/19/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0012	< 0.0012	< 0.0012
MW8-5-19-23-25'	25'	5/19/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.00095	< 0.00095	< 0.00095
MW9-5-19-23-18'	18'	5/19/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.00078	< 0.00078	**0.00099**
MW9-5-19-23-27'	27'	5/19/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0012	< 0.0012	**0.0026**
Ecology MTCA Method A Soil Cleanup Levels for Unrestricted Land Use (mg/Kg)															
Unrestricted Land Use			0.03	7	6	9	0.005	DNE	0.1	5	DNE	DNE	DNE	0.03	0.05

Notes:

MTCA = Model Toxics Control Act

NA = Not Analyzed

EDB = 1,2-Dibromoethane

EDC = 1,2-Dichloroethane

MTBE = Mehtyl tertiery-butyl ether

124-TMB = 1,2,4-trimethylbenzene

135-TMB = 1,3,5-trimethylbenzene

1,2-DCE = 1,2-Dichloroethene

TCE = Trichlorethene

PCE = Tetrachlorethene

DNE = Does Not Exist

ft bsg = feet below surface grade

mg/Kg = milligrams per Kilogram or parts per million (ppm)

BOLD = sample yielded detectable concentration of analyzed compound

TABLE 3

Soil Sample Results - Total Metals (mg/Kg)[1]
Hahn Motors Company - 1201 South First Street
Yakima, Washington 98901

Sample I.D.	Depth (ft bsg)	Date Collected	Total Metals via EPA Methods 6010D/7471B							
			Arsenic	Barium	Cadmium	Chromium[3]	Mercury[4]	Lead	Selenium	Silver
SUBSURFACE INVESTIGATION (BMEC) - FEBRUARY 2022										
SB1-2-1-22-5'	5'	2/1/22	< 10	**30**	< 0.52	**7.9**	< 0.26	< 5.2	< 10	< 1.0
SB1-2-1-22-10'	10'	2/1/22	< 11	**61**	**2.5**	**12**	< 0.27	**45**	< 11	< 1.1
SB1-2-1-22-15'	15'	2/1/22	< 11	**45**	< 0.54	**5.4**	< 0.27	< 5.4	< 11	< 1.1
SB2-2-1-22-5'	5'	2/1/22	< 10	**72**	< 0.52	**34**	< 0.26	< 5.2	< 10	< 1.0
SB2-2-1-22-10'	10'	2/1/22	< 11	**27**	< 0.53	**5.5**	< 0.26	< 5.3	< 11	< 1.1
SB2-2-1-22-15'	15'	2/1/22	< 10	**32**	< 0.52	**6.4**	< 0.26	**31**	< 10	< 1.0
SB3-2-1-22-5'	5'	2/1/22	< 10	**28**	< 0.52	**5.8**	< 0.26	< 5.2	< 10	< 1.0
SB3-2-1-22-10'	10'	2/1/22	< 11	**27**	< 0.53	**4.5**	< 0.26	< 5.3	< 11	< 1.1
SB3-2-1-22-25'	25'	2/1/22	< 11	**73**	< 0.56	**5.8**	< 0.28	< 5.6	< 11	< 1.1
SB4-2-1-22-5'	5'	2/1/22	< 10	**47**	< 0.51	**7.8**	< 0.25	< 5.1	< 10	< 1.0
SB4-2-1-22-10'	10'	2/1/22	< 10	**41**	< 0.52	**7.9**	< 0.26	< 5.2	< 10	< 1.0
SB4-2-1-22-15'	15'	2/1/22	< 11	**31**	< 0.53	**6.4**	< 0.27	< 5.3	< 11	< 1.0
SB4-2-1-22-20'	20'	2/1/22	< 11	**36**	< 0.54	**6.1**	< 0.27	< 5.4	< 11	< 1.1
SB5-2-1-22-5'	5'	2/1/22	< 10	**39**	< 0.51	**7.4**	< 0.26	< 5.1	< 10	< 1.0
SB5-2-1-22-10'	10'	2/1/22	< 11	**24**	< 0.53	**5.2**	< 0.26	**9.4**	< 11	< 1.1
SB5-2-1-22-15'	15'	2/1/22	< 12	**66**	< 0.58	**4.3**	< 0.29	< 5.8	< 12	< 1.2
SB5-2-1-22-20'	20'	2/1/22	< 12	**79**	< 0.58	**2.9**	< 0.29	< 5.8	< 12	< 1.2
SB6-2-1-22-5'	5'	2/1/22	< 11	**53**	< 0.53	**11**	< 0.27	**21**	< 11	< 1.1
SB6-2-1-22-10'	10'	2/1/22	< 10	**48**	< 0.52	**8.4**	< 0.26	< 5.2	< 10	< 1.0
SB6-2-1-22-15'	15'	2/1/22	< 10	**44**	< 0.52	**6.9**	< 0.26	< 5.2	< 10	< 1.0
SB6-2-1-22-20'	20'	2/1/22	< 11	**52**	< 0.53	**10**	< 0.26	< 5.3	< 11	< 1.1
ADDITIONAL SUBSURFACE INVESTIGATION (BMEC) - SEPTEMBER 2022										
MW1-9-28-22-10'	10'	9/28/22	< 10	**48**	< 0.51	**8.6**	< 0.26	< 5.1	< 10	< 1.0
MW1-9-28-22-19'	19'	9/28/22	< 11	**56**	< 0.54	**16**	< 0.27	< 5.4	< 11	< 1.1
MW2-9-28-22-13'	13'	9/28/22	< 10	**46**	< 0.52	**11**	< 0.26	**9.2**	< 10	< 1.0
MW2-9-28-22-18'	18'	9/28/22	< 11	**45**	< 0.55	**15**	< 0.27	< 5.5	< 11	< 1.1
MW3-9-27-22-15'	15'	9/27/22	< 11	**44**	< 0.53	**6.9**	< 0.26	< 5.3	< 11	< 1.1
MW3-9-27-22-23'	23'	9/27/22	< 11	**41**	< 0.54	**7.1**	< 0.27	< 5.4	< 11	< 1.1
MW4-9-27-22-16'	16'	9/27/22	< 10	**46**	< 0.52	**8.1**	< 0.26	**5.9**	< 10	< 1.0
MW4-9-27-22-20'	20'	9/27/22	< 11	**30**	< 0.53	**5.8**	< 0.26	< 5.3	< 11	< 1.1
MW5-9-27-22-15'	15'	9/27/22	< 10	**45**	< 0.51	**9.2**	< 0.26	< 5.1	< 10	< 1.0
MW5-9-27-22-20'	20'	9/27/22	< 11	**53**	< 0.54	**13**	< 0.27	< 5.4	< 11	< 1.1
MW6-9-27-22-15'	15'	9/27/22	< 10	**34**	< 0.51	**9.1**	< 0.26	< 5.1	< 10	< 1.0
MW6-9-27-22-21'	21'	9/27/22	< 10	**65**	< 0.51	**9.5**	< 0.26	**11**	< 10	< 1.0
MONITORING WELL INSTALLATION (BMEC) - MAY 2023										
MW3a-5-19-23-20'	20'	5/19/23	< 11	**53**	< 0.53	**5.4**	< 0.26	< 5.3	< 11	< 1.1
MW3a-5-19-23-30'	30'	5/19/23	< 11	**59**	< 0.55	**6.0**	< 0.28	< 5.5	< 11	< 1.1
MW7-5-19-23-18'	18'	5/19/23	< 11	**26**	< 0.53	**6.2**	< 0.27	< 5.3	< 11	< 1.1
MW7-5-19-23-25'	25'	5/19/23	< 11	**32**	< 0.54	**6.9**	< 0.27	< 5.4	< 11	< 1.1
MW8-5-19-23-18'	18'	5/19/23	< 11	**47**	< 0.54	**8.8**	< 0.27	< 5.4	< 11	< 1.1
MW8-5-19-23-25'	25'	5/19/23	< 11	**28**	< 0.55	**8.8**	**0.38**	< 5.5	< 11	< 1.1
MW9-5-19-23-18'	18'	5/19/23	< 10	**56**	< 0.52	**6.1**	< 0.26	< 5.2	< 10	< 1.0
MW9-5-19-23-27'	27'	5/19/23	< 12	**67**	< 0.58	**12**	< 0.29	< 5.8	< 12	< 1.2
Ecology MTCA Method A Soil Cleanup Levels for Unrestricted Land Use (mg/Kg)										
Unrestricted Land Use			20	DNE	2	19	2	250	DNE	DNE

Notes:

[1] Table 2 contains total metal analysis results for all soil samples collected by Waste Watch. The 2009 metals results for soil samples collected by Ecology and Environment are included in tables located in Appendix D.

[2] Sample analysis performed past method-specified holding time per client's approval.

[3] MTCA Method A Cleanup Level for Unrestricted Land Use for Chromium VI. Cleanup Level for Chromium III is 2,000 mg/Kg.

[4] Mercury analyzed via EPA Method 7471A.

[5] Soil sample SB24-7.5 was also analyzed for hexavalent chromium via EPA Method 7196A and yielded a non-detect (< 1.2 mg/Kg).

MTCA = Model Toxics Control Act

NA = Not Analyzed

DNE = Does Not Exist

ft bsg = feet below surface grade

mg/Kg = milligrams per Kilogram or parts per million (ppm)

BOLD = sample yielded detectable concentration of analyzed compound

BOLD sample yielded detectable concentration of analyzed compound at levels exceeding MTCA Method A Cleanup levels for Unrestricted Land Use

TABLE 4

Groundwater Sample Results - Total Petroleum Hydrocarbons (µg/L)
1201 South First Street
Yakima, Washington 98901

Sample I.D.	Date Collected	TPH-Diesel and Heavy Oil by Northwest Method NWTPH-Dx		TPH-Gasoline by Northwest Method NWTPH-Gx
		TPH-D	TPH-O	
MONITORING WELLS				
MW1	10/3/22	< 200	< 200	< 100
	12/15/22	< 210	< 210	< 500
	3/28/23	< 150	< 150	NA
	6/13/23	< 210	< 210	NA
	9/26/23	< 200	< 200	NA
	12/27/23	< 200	< 200	NA
	3/19/24	NA	NA	NA
	6/5/24	NA	NA	NA
MW2	10/3/22	< 210	< 210	< 100
	12/15/22	< 220	**240**	< 500
	3/28/23	< 150	**150**	NA
	6/13/23	< 210	< 210	NA
	9/26/23	< 200	**210**	NA
	12/27/23	< 210	< 210	NA
	3/19/24	NA	NA	NA
	6/5/24	NA	NA	NA
MW3	10/3/22	< 200	< 200	< 100
	12/15/22	< 230	< 230	< 500
	3/28/23	< 220	< 220	NA
MW3A	6/13/23	< 210	< 210	NA
	9/26/23	< 150	< 150	NA
	12/27/23	< 210	< 210	NA
	3/19/24	NA	NA	NA
	6/5/24	NA	NA	NA
MW4	10/3/22	< 210	< 210	< 100
	12/15/22	< 230	< 230	< 500
	3/28/23	< 150	< 150	NA
	6/13/23	< 210	< 210	NA
	9/26/23	< 150	< 150	NA
	12/27/23	< 210	< 210	NA
	3/19/24	NA	NA	NA
	6/5/24	NA	NA	NA
MW5	103/22	< 210	< 210	< 100
	12/15/22	< 220	< 220	< 500
	3/28/23	< 150	< 150	NA
	6/13/23	< 210	< 210	NA
	9/26/23	< 200	< 200	NA
	12/27/23	< 200	< 200	NA
	3/19/24	NA	NA	NA
	6/5/24	NA	NA	NA
MW6	10/3/22	< 210	< 210	< 100
	12/15/22	< 220	< 220	< 500
	3/28/23	< 150	< 150	NA
	6/13/23	< 210	< 210	NA
	9/26/23	< 200	< 200	NA
	12/27/23	< 210	< 210	NA
	3/19/24	NA	NA	NA
	6/5/24	NA	NA	NA
MW7	6/13/23	< 210	< 210	NA
	9/26/23	< 150	< 150	NA
	12/27/23	< 210	< 210	NA
	3/19/24	NA	NA	NA
	6/5/24	NA	NA	NA
MW8	6/13/23	< 220	< 220	NA
	9/26/23	< 150	< 150	NA
	12/27/23	< 210	< 210	NA
	3/19/24	NA	NA	NA
	6/5/24	NA	NA	NA
MW9	6/13/23	< 210	< 210	NA
	9/26/23	< 150	< 150	NA
	12/27/23	< 210	< 210	NA
	3/24/24	NA	NA	NA
	6/5/25	NA	NA	NA
Ecology MTCA Method A Groundwater Cleanup Levels (µg/L)				
Cleanup Level		500	500	800/1,000 [1]

Notes:

[1] MTCA Method A Cleanup Level for TPH-G is 800 ppb if benzene is detected in subsurface soils or groundwater. If benzene is not detected, Cleanup Level is 1,000 ppb.

MTCA = Model Toxics Control Act

µg/L = micrograms per Liter or parts per billion (ppb)

BOLD = sample yielded detectable concentration of analyzed compound.

TABLE 5

Groundwater Sample Results - Volatile Organic Compounds (µg/L)
Hahn Motors Company - 1201 South 1st Street
Yakima, Washington 98901

Sample I.D.	Date Collected	Volatile Organic Compounds (VOCs) by EPA Method 8260D (µg/L)																						
		Benzene	Toluene	Ethylbenzene	Total Xylenes	EDB	EDC	2-Hexanone	n-Propylbenzene	MTBE	Naphthalene	124-TMB	135-TMB	Isopropyltoluene	n-Butylbenzene	Acetone	Carbon Disulfide	2-Butanone	Chloroform	Vinyl Chloride	(cis) 1,2-Dichloroethene	Trichloroethene (TCE)	Tetrachloroethene (PCE)
MONITORING WELLS																								
MW1	10/3/22	< 0.20	< 1.0	< 0.20	< 0.60	< 0.010	< 0.20	< 2.0	< 0.20	< 0.20	< 1.3	< 0.20	< 0.20	< 0.20	< 0.20	< 5.0	< 0.20	< 5.0	**6.1**	< 0.20	< 0.20	< 0.20	**2.4**
	12/15/22	< 0.20	< 1.0	< 0.20	< 0.60	< 0.010	< 0.20	< 2.0	< 0.20	< 0.20	< 1.0	< 0.20	< 0.20	< 0.20	< 0.20	< 5.0	< 0.26	< 5.0	< 1.0	< 0.20	< 0.20	< 0.20	**1.7**
	3/28/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.8**
	6/13/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.4**
	9/26/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**3.6**
	12/27/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**3.1**
	3/19/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**2.4**
	6/5/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.6**
MW2	10/3/22	**0.62**	< 1.0	**0.44**	**0.45**	< 0.010	< 0.20	< 2.0	**0.30**	< 0.20	< 1.3	< 0.20	< 0.20	< 0.20	< 0.20	< 5.0	< 0.20	< 5.0	**5.0**	< 0.20	< 0.20	< 0.20	**2.6**
	12/15/22	**0.22**	< 1.0	< 0.20	< 0.60	< 0.010	< 0.20	< 2.0	< 0.20	< 0.20	< 1.0	< 0.20	< 0.20	**0.31**	**0.21**	< 5.0	**0.33**	< 5.0	< 1.0	< 0.20	< 0.20	< 0.20	**1.7**
	3/28/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**2.4**
	6/13/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**2.3**
	9/26/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**2.4**
	12/27/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**2.7**
	3/19/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**2.7**
	6/5/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.6**
MW3	10/3/22	< 0.20	< 1.0	< 0.20	< 0.60	< 0.010	< 0.20	< 2.0	< 0.20	< 0.20	< 1.3	< 0.20	< 0.20	< 0.20	< 0.20	< 5.0	< 0.20	< 5.0	**4.8**	< 0.20	< 0.20	< 0.20	**2.2**
	12/15/22	< 0.20	< 1.0	< 0.20	< 0.60	< 0.010	< 0.20	< 2.0	< 0.20	< 0.20	< 1.0	< 0.20	< 0.20	< 0.20	< 0.20	< 5.0	< 0.26	< 5.0	**2.7**	< 0.20	< 0.20	< 0.20	**1.4**
	3/28/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**0.70**
MW3A	6/13/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.3**
	9/26/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**4.0**
	12/27/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**2.7**
	3/19/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.8**
	6/5/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.3**
MW4	10/3/22	**0.67**	< 1.0	**0.22**	**0.26**	< 0.010	< 0.20	< 2.0	< 0.20	< 0.20	< 1.3	< 0.20	< 0.20	< 0.20	< 0.20	**5.2**	**0.23**	< 5.0	**3.6**	< 0.20	< 0.20	< 0.20	**1.1**
	12/15/22	**0.23**	< 1.0	< 0.20	< 0.60	< 0.010	< 0.20	< 2.0	< 0.20	< 0.20	< 1.0	< 0.20	< 0.20	< 0.20	< 0.20	< 5.0	**0.36**	< 5.0	**2.5**	< 0.20	< 0.20	< 0.20	**1.1**
	3/28/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.3**
	6/13/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**0.97**
	9/26/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**2.1**
	12/27/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.8**
	3/19/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.3**
	6/5/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**0.98**
MW5	10/3/22	**1.7**	**2.2**	**0.68**	**1.45**	< 0.010	< 0.20	**2.3**	**0.34**	< 0.20	< 1.3	**0.25**	< 0.20	**0.30**	**0.25**	**11**	< 0.20	< 5.0	**5.6**	< 0.20	< 0.20	< 0.20	**1.6**
	12/15/22	< 0.20	**< 1.0**	< 0.20	< 0.60	< 0.010	< 0.20	< 2.0	< 0.20	< 0.20	< 1.0	< 0.20	< 0.20	< 0.20	< 0.20	< 5.0	**0.34**	< 5.0	**2.6**	< 0.20	< 0.20	< 0.20	**1.6**
	3/28/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.5**
	6/13/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.3**
	9/26/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**2.0**
	12/27/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**2.6**
	3/19/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.7**
	6/5/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.4**
MW6	10/3/22	**0.65**	**1.0**	**0.26**	**0.24**	< 0.010	< 0.20	< 2.0	< 0.20	< 0.20	< 1.3	< 0.20	< 0.20	< 0.20	< 0.20	< 5.0	< 0.20	< 5.0	**4.5**	< 0.20	< 0.20	< 0.20	**1.5**
	12/15/22	< 0.20	< 1.0	< 0.20	< 1.0	< 0.010	< 0.20	< 2.0	< 0.20	< 0.20	< 1.0	< 0.20	< 0.20	< 0.20	< 0.20	< 5.0	< 0.26	< 5.0	**2.9**	< 0.20	< 0.20	< 0.20	**1.3**
	3/28/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.1**
	6/13/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.1**
	9/26/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**2.0**
	12/27/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**2.1**
	3/19/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.6**
	6/5/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.0**
MW7	6/13/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.3**
	9/26/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**6.0**
	12/27/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**3.0**
	3/19/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**2.2**
	6/5/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.4**
MW8	6/13/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.2**
	9/26/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**5.1**
	12/27/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.4**
	3/19/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**0.9**
	6/5/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**0.76**
MW9	6/13/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**1.1**
	9/26/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	**2.0**
	12/27/23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	< 0.20
	3/19/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	< 0.20
	6/5/24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.20	< 0.20	< 0.20	< 0.20
Ecology MTCA Method A Groundwater Cleanup Levels (µg/L)																								
Cleanup Level		5	1,000	700	1,000	0.010	5	DNE	DNE	20	160	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	0.2	DNE	5	5

Notes:
MTCA = Model Toxics Control Act
EDB = 1,2-Dibromoethane
EDC = 1,2-Dichloroethane
MTBE = Methyl tertiary-butyl ether
124-TMB = 1,2,4-trimethylbenzene
135-TMB = 1,3,5-trimethylbenzene
PCE = Tetrachloroethylene
DNE = Does Not Exist
µg/L = micrograms per Liter or parts per billion (ppb)
MTCA = Model Toxics Control Act
BOLD = sample yielded detectable concentration of analyzed compound.
BOLD Concentration exceeds the MTCA Method A Cleanup Level

TABLE 6

Groundwater Sample Results - Total Metals (µg/L)

1201 South First Street

Yakima, Washington 98901

Sample I.D.	Date Collected	Total Mercury by EPA Method 200.8 (µg/L)	Total Metals via EPA Method 200.8						
			Arsenic	Barium	Cadmium	Chromium[1]	Lead	Selenium	Silver
Monitoring Wells									
MW1	10/3/22	< 0.50	**12**	**340**	< 4.4	**110**	**16**	< 5.6	< 11
	12/15/22	< 0.50	**28**	**580**	< 4.4	**150**	**26**	< 5.6	< 11
	3/28/23	< 0.50	< 3.3	NA	< 4.4	**15**	**2.5**	NA	NA
	6/13/23	< 0.50	**9.3**	NA	< 4.4	**73**	**11**	NA	NA
	9/26/23	< 0.50	< 3.3	NA	< 4.4	**20**	**2.9**	NA	NA
	12/27/23	< 0.50	**3.35**	NA	< 1	**30.3**	**5.64**	NA	NA
	3/19/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	6/5/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
MW2	10/3/22	**1.2**	**58**	**2400**	< 4.4	**430**	**160**	**7.6**	< 11
	12/15/22	**0.58**	**34**	**1300**	< 4.4	**210**	**75**	< 5.6	< 11
	3/28/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	6/13/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	9/26/23	< 0.50	< 3.3	NA	< 4.4	**19.0**	**9.0**	NA	NA
	12/27/23	< 0.50	**1.36**	NA	< 1	**5.58**	**2.81**	NA	NA
	3/19/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	6/5/24	< 0.50	< 3.3	NA	< 4.4	**21**	**11**	NA	NA
MW3	10/3/22	< 0.50	**16**	**550**	< 4.4	**120**	**27**	< 5.6	< 11
	12/15/22	< 0.50	**43**	**1100**	< 4.4	**340**	**73**	**6.7**	< 11
	3/28/23	**1.5**	**88**	NA	**6.5**	**1100**	**220**	NA	NA
MW3A	6/13/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	9/26/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	12/27/23	< 0.50	**1.05**	NA	< 1	< 1	< 1	NA	NA
	3/19/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	6/5/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
MW4	10/3/22	**1.5**	**67**	**2700**	< 4.4	**400**	**110**	**9.9**	< 11
	12/15/22	**1.3**	**66**	**1900**	< 4.4	**320**	**77**	**7.1**	< 11
	3/28/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	6/13/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	9/26/23	< 0.50	< 3.3	NA	< 4.4	< 11	**1.2**	NA	NA
	12/27/23	< 0.50	< 1	NA	< 1	< 1	< 1	NA	NA
	3/19/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	6/5/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
MW5	10/3/22	< 0.50	**18**	**790**	< 4.4	**210**	**36**	< 5.6	< 11
	12/15/22	< 0.50	**28**	**690**	< 4.4	**180**	**38**	< 5.6	< 11
	3/28/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	6/13/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	9/26/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	12/27/23	< 0.50	< 1	NA	< 1	< 1	< 1	NA	NA
	3/19/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	6/5/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
MW6	10/3/22	**0.61**	**39**	**600**	< 4.4	**81**	**39**	**5.9**	< 11
	12/15/22	**2.1**	**150**	**1900**	< 4.4	**330**	**140**	**11**	< 11
	3/28/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	6/13/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	9/26/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	12/27/23	< 0.50	< 1	NA	< 1	< 1	< 1	NA	NA
	3/19/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	6/5/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
MW7	6/13/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	9/26/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	12/27/23	< 0.50	**1.21**	NA	< 1	< 1	< 1	NA	NA
	3/19/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	6/5/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
MW8	6/13/23	< 0.50	< 3.3	NA	< 4.4	< 11	**1.1**	NA	NA
	9/26/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	12/27/23	< 0.50	**1.51**	NA	< 1	**7.54**	**2.09**	NA	NA
	3/19/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	6/5/24	< 0.50	< 3.3	NA	< 4.4	**18**	**4.5**	NA	NA
MW9	6/13/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	9/26/23	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	12/27/23	< 0.50	< 1	NA	< 1	< 1	< 1	NA	NA
	3/19/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
	6/5/24	< 0.50	< 3.3	NA	< 4.4	< 11	< 1.1	NA	NA
Ecology MTCA Method A Groundwater Cleanup Levels (µg/L)									
Cleanup Levels		2	5	DNE	5	50	15	DNE	DNE

Notes:

[1] MTCA Method A Cleanup Level for total chromium (chromium VI + chromium III) is 50 µg/L

MTCA = Model Toxics Control Act

EDB = 1,2-Dibromoethane

EDC = 1,2-Dichloroethane

MTBE = Mehtyl tertiery-butyl ether

124-TMB = 1,2,4-trimethylbenzene

135-TMB = 1,3,5-trimethylbenzene

DNE = Does Not Exist

µg/L = micrograms per Liter or parts per billion (ppb)

BOLD = sample yielded detectable concentration of analyzed compound

BOLD Concentration exceeds the MTCA Method A Cleanup Level

TABLE 7
Monitoring Well Installation and Groundwater Surface Elevation Data
Former Hahn Motors
1201 S. 1st Street in Yakima, WA 98901

Monitoring Well Number	Date Measured	Top of Casing Elevation (feet NAVD88)	Depth-To-Water Below Top of Casing (feet btoc)[2]	Groundwater Elevation (feet NAVD88)	LNAPL Thickness (feet)	Volume of Groundwater Purged (gallons)	Screened Interval (feet bgs)	Sandpack Interval (feet bgs)	Bentonite Interval (feet bgs)
Monitoring Wells									
MW1	10/3/22	1042.69	15.48	1027.21	0.00	15	10 - 25'	8 - 25'	2 - 8'
	12/15/22		18.35	1024.34	0.00	5			
	3/28/23		19.66	1023.03	0.00	5			
	6/13/23		18.28	1024.41	0.00	4			
	9/26/23		16.16	1026.53	0.00	5			
	12/27/23		19.05	1023.64	0.00	3			
	3/19/24		NA	NA	NA	3			
	6/5/24		17.79	1024.90	0.00	4			
MW2	10/3/22	1042.89	16.66	1026.23	0.00	15	10 - 25'	8 - 25'	2 - 8'
	12/15/22		19.87	1023.02	0.00	5			
	3/28/23		21.36	1021.53	0.00	2.5			
	6/13/23		19.32	1023.57	0.00	3.5			
	9/26/23		17.53	1025.36	0.00	4.0			
	12/27/23		20.53	1022.36	0.00	3.0			
	3/19/24		NA	NA	NA	3.0			
	6/5/24		19.02	1023.87	0.00	4.0			
MW3	10/3/22	1041.88	16.36	1025.52	0.00	15	10 - 25'	8 - 25'	2 - 8'
	12/15/22		19.06	1022.82	0.00	5			
	3/28/23		21.04	1020.84	0.00	1.5			
MW3A	6/13/23	1042.00	19.00	1023.00	0.00	18.0	10 - 30'	8 - 30'	2 - 8'
	9/26/23		17.10	1024.90	0.00	6.5			
	12/27/23		20.11	1021.89	0.00	5.0			
	3/19/24		NA	NA	NA	4.0			
	6/5/24		18.62	1023.38	0.00	6.0			
MW4	10/3/22	1041.13	16.14	1024.99	0.00	15	10 - 25'	8 - 25'	2 - 8'
	12/15/22		19.37	1021.76	0.00	5			
	3/28/23		21.33	1019.80	0.00	4			
	6/13/23		18.43	1022.70	0.00	3.5			
	9/26/23		16.57	1024.56	0.00	5.0			
	12/27/23		20.18	1020.95	0.00	3.0			
	3/19/24		NA	NA	NA	3.0			
	6/5/24		18.09	1023.04	0.00	4.0			
MW5	10/3/22	1040.73	15.94	1024.79	0.00	15	10 - 25'	8 - 25'	2 - 8'
	12/15/22		19.08	1021.65	0.00	5			
	3/28/23		21.15	1019.58	0.00	4			
	6/13/23		18.16	1022.57	0.00	3.5			
	9/26/23		16.36	1024.37	0.00	4.5			
	12/27/23		19.96	1020.77	0.00	3.0			
	3/19/24		NA	NA	NA	3.0			
	6/5/24		17.82	1022.91	0.00	4.0			
MW6	10/3/22	1040.06	15.57	1024.49	0.00	15	10 - 25'	8 - 25'	2 - 8'
	12/15/22		18.88	1021.18	0.00	5			
	3/28/23		21.18	1018.88	0.00	3			
	6/13/23		17.95	1022.11	0.00	3.5			
	9/26/23		16.09	1023.97	0.00	5			
	12/27/23		20.01	1020.05	0.00	3			
	3/19/24		NA	NA	NA	3			
	6/5/24		17.61	1022.45	0.00	4			
MW7	6/13/23	1043.69	19.17	1024.52	0.00	10	10 - 25'	8 - 25'	2 - 8'
	9/26/23		16.89	1026.80	0.00	4			
	12/27/23		19.97	1023.72	0.00	3			
	3/19/24		NA	NA	NA	3			
	6/5/24		18.61	1025.08	0.00	4			
MW8	6/13/23	1042.69	19.58	1023.11	0.00	10	10 - 25'	8 - 25'	2 - 8'
	9/26/23		17.24	1025.45	0.00	4			
	12/27/23		20.23	1022.46	0.00	3			
	3/19/24		NA	NA	NA	3			
	6/5/24		19.45	1023.24	0.00	3			
MW9	6/13/23	1041.82	19.32	1022.50	0.00	10	10 - 25'	8 - 25'	2 - 8'
	9/26/23		17.84	1023.98	0.00	4			
	12/27/23		20.03	1021.79	0.00	3			
	3/19/24		NA	NA	NA	3			
	6/5/24		19.05	1022.77	0.00	3			

Notes:

NAVD88 = North American Vertical Datum 1988

btoc = below top of casing

LNAPL = light, non-aqueous phase liquid

NA = not available

APPENDIX A

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
1250 W Alder St • Union Gap, WA 98903-0009 • (509) 575-2490

February 23, 2016

FILE COPY

Richard Hahn
1219 N 22nd Avenue
Yakima, WA 98902

Re: Further Action at the following Site:

Site Name:	Hahn Motor Company
Site Address:	1201 S 1st Street, Yakima
Facility Site ID No.:	502
Cleanup Site ID No.:	4927
VCP Project No.:	CE0434

Dear Mr. Hahn:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Hahn Motor Company facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

YES. Ecology has determined that further remedial action is necessary to clean up contamination at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following releases:

- Waste Oil and associated chemicals released from Underground Storage Tanks (USTs) into soil and groundwater.

- Petroleum products and other chemicals released from interior sumps to soil and groundwater

Currently the Site is part of the Yakima Railroad Area s (FSID# 500) tetrachloroethylene (PCE) plume

Please note a parcel of real property can be affected by multiple sites At this time we have no information that the parcel(s) associated with this Site are affected by other sites

Basis for the Opinion

This opinion is based on the information contained in the following documents

- Earth Consultants Inc 1989 *Preliminary Integrity Assessment of Two USTs and Three Industrial Waste Water Sumps 1201 S 1st St and 307 E Arlington St Yakima WA* October 1989

- PETCO Inc 2008 *UST Decommissioning & Site Assessment Report for UST Site #200130 1201 S 1st St Yakima WA* Februai y 2008

- Department of Ecology Correspondence File 1989 2015

Those documents are kept at the Central Regional Office (CRO) of Ecology for review by appointment only You can make an appointment by calling the CRO resource contact Jackie Cameron at 509 454 7658

This opinion is void if any of the information contained in those documents is materially false or misleading

Analysis of the Cleanup

Ecology has concluded that **further remedial action** is necessary to clean up contamination at the Site That conclusion is based on the following analysis

1 Characterization of the Site

Ecology has determined your characterization of the Site **is not** sufficient to establish cleanup standards and select a cleanup action

Groundwater in the vicinity of the waste oil USTs has concentrations of petroleum exceeding cleanup levels and concentrations of petroleum in soil at the base of the UST excavation appear to increase with depth The testing performed did not meet Ecology s requirements for waste oil releases and other contaminants are suspected

Soil samples collected adjacent to the two interior sumps had concentrations or detections of petroleum products and Volatile Organic Compounds (VOCs) including PCE Additional contaminants and higher concentrations are suspected with further characterization of soil and groundwater

The automotive washing bay sump is believed to drain to a nearby drywell The drywell should be decommissioned and soil and groundwater in the vicinity should be characterized

WAC 173 340 350 requires sufficient investigations to characterize the distribution of hazardous substances present at the site and threat to human health and the environment Further investigation of both soil and groundwater near the USTs both sumps and drywell connected to the automotive washing bay sump are required to adequately characterize the Site

The investigation should consist of sufficient sampling and analyses to demonstrate a Contaminant of Potential Concern (COPC) is not affecting the Site **and** to define the location quantity extent and concentration of all Contaminants of Concern (COCs) known to be affecting the Site

The investigation should meet the analytical requirements and recommendations for waste oil releases as discussed in the following Ecology documents

- Guidance for Site Checks and Site Assessments for Underground Storage Tanks (Pub #90 52)
- Guidance for Remediation of Petroleum Contaminated Sites (Pub #10 09 057)
- Model Toxics Control Act Regulation and Statute (Pub #94 06)

2 Establishment of cleanup standards

Ecology has determined the cleanup levels and points of compliance you established for the Site **do not** meet the substantive requirements of MTCA

The characterization of the Site is not sufficient to establish cleanup standards and points of compliance

3 Selection of cleanup action

Ecology has determined the cleanup action you selected for the Site **does not** meet the substantive requirements of MTCA

The characterization of the site is not sufficient to select a cleanup action

4 Cleanup

Ecology has determined the cleanup you performed does not meet any cleanup standards at the Site

The interim action performed at the Site consisted of decommissioning USTs and limited removal of impacted soil surrounding the USTs

Additional characterization is necessary to select a cleanup action

Limitations of the Opinion

1 Opinion does not settle liability with the state

Liable persons are strictly liable jointly and severally for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site This opinion **does not**

- Resolve or alter a person s liability to the state
- Protect liable persons from contribution claims by third parties

To settle liability with the state and obtain protection from contribution claims a person must enter into a consent decree with Ecology under RCW 70 105D 040(4)

2 Opinion does not constitute a determination of substantial equivalence

To recover remedial action costs from other liable persons under MTCA one must demonstrate that the action is the substantial equivalent of an Ecology conducted or Ecology supervised action This opinion does not determine whether the action you performed is substantially equivalent Courts make that determination *See* RCW 70 105D 080 and WAC 173 340 545

3 State is immune from liability

The state Ecology and its officers and employees are immune from all liability and no cause of action of any nature may arise from any act or omission in providing this opinion *See* RCW 70 105D 030(1)(i)

Contact Information

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP) After you have addressed our concerns you may request another review of your cleanup Please do not hesitate to request additional services as your cleanup progresses We look forward to working with you

For more information about the VCP and the cleanup process please visit our web site www ecy wa gov/programs/tcp/vcp/vcpmain htm If you have any questions about this opinion please contact me by phone at (509) 454 7839 or e mail at Jennifer Lind@ecy wa gov

Sincerely

Jennifer Lind
CRO Toxics Cleanup Program

cc Doug and Connie Bettarel
Dolores Mitchell VCP Financial Manager

MEMORANDUM

February 18, 2016

TO: Valerie Bound
PEER REVIEW:
FROM: Jennifer Lind
SUBJECT: Hahn Motor Company – VCP request for NFA Opinion on Site Characterization and Remedial Action

---

VCP OPINION: Further Action Required

EXECUTIVE SUMMARY:

Further investigation of both soil and groundwater near the USTs, both sumps, and drywell connected to Sump #2 are required to adequately characterize the Site. Testing should follow Ecology's requirements for waste oil releases.

Ecology correspondence circa 1990 indicates Ecology was very clear that additional characterization of soil and groundwater is necessary.

Both the sumps and USTs are potential sources of PCE contributing to the YRRA PCE plume.

USTs: Groundwater has concentrations of petroleum exceeding CULs. Soil has concentrations of petroleum below CULs, but appears to be increasing with depth. No other analyses were performed for either media.

Sumps: Soil adjacent to the sumps has concentrations of petroleum below CULs, but appears to be increasing with depth. T, E, X, DCE, TCE, PCE, 1,1,1 Trichloroethane were detected below CULs, but higher concentrations are likely with proper sampling.

Drywell: Water from Sump #2 runs through an oil/water separator, then out to drywell. This drywell is prohibited and needs to be decommissioned.

Tank Sludge: Contained metals and chlorinated compounds.

SITE INFORMATION:

Site Name:	Hahn Motor Company
Address:	1201 S 1st St., Yakima
Tax Parcel No.:	191330-13002
Brief Legal Description:	BEG 30 FT S & 30 FT E OF NW COR SW1/4NE1/4,TH S 28.35 FT,TH SE'LY AL E LN S1ST ST.271.65 FT,TH E 140 FT,TH NW'LYPAR TO S 1ST ST.100 FT,TH E 50 FT,THNW'LY PAR TO S 1ST ST.202.89 FT TO SLN E WASH.ST..TH W TO POB.
CSID:	4927
FSID:	502

SITE HISTORY

1940s

In the mid 1940s Hahn Motors built the existing structure with a 2 000 gallon heating oil UST in the basement The use of the facility as an auto dealership and service garage appears to have remained consistent since construction

1970s

In the mid 1970s an additional 2 000 gallon UST was installed and the boiler was retrofitted to burn used motor oil

1989

An assessment of 2 USTs and 2 interior sumps was performed (a drywell at the N adjoining 5th Wheel Site was also assessed) The investigation consisted of 2 borings near the USTs (15 ft bgs) and 2 hand augers near the interior sumps (6 ft bgs) Groundwater samples were collected from the borings at about 14 ft bgs

Sump #? (Western) Located in an automotive servicing bay and described in the report as a battery storage area

2/2016 Site Visit No batteries currently stored Unknown if secondary containment was used The sump is reportedly self contained and pumped as necessary but no documentation available No hydraulic lift

Sump #? (Eastern) Located in an auto washing/detailing area of the service department

2/2016 Site Visit A pressure washer was used for engine cleaning Mr Hahn stated the sump water runs through an oil/water separator then out to a drywell At the time of the site visit the sump was completely full of oily water

***Note Sump locations on figure and sample location descriptions are not consistent Unclear which is correct ***

See attached tables of results

All soil samples were analyzed for TPH (EPA Method 418 1) The interior sump samples were also analyzed for VOCs (EPA Method 8240)

Groundwater samples were only analyzed for TPH (EPA Method 418 1)

Low levels of TPH were detected in soil samples ranging from 17 to 236 mg/kg However the analytical method used is not appropriate for lighter end fuels like gasoline TPH concentrations in samples collected at B 2 increased with depth to a max of 15 ft bgs (162 mg/kg)

The groundwater sample collected from B 2 had 5 000 ug/L TPH This concentration exceeds the CUL for any petroleum product

The USTs were used to store waste oil from at least 1975 It is unknown if other automotive fluids or cleaning solvents were also disposed of/stored in the USTs or what chemicals drained into the sumps It is assumed the washing area sump is still in use as it is full of water (2/2016)

Ecology letter with comments 2/12/1990 Highlights

- Given the information in your preliminary assessment report additional site investigation and characterization is needed to define the extent of horizontal and vertical contamination at this site
- Further investigation should include both downgradient and upgradient (background contamination around the two tanks and three sumps

1992

PLSA submitted sampling results from the on site land farmed stockpile – **Update This soil was from the interior catch basin at the 5th Wheel Site and was stockpiled at a 3rd location at the SW corner of South 6th Street and Arlington (property also owned by Hahn)**

1993

Ecology internal file memo dated October 22 1993 describes soil sampling activities performed by PLSA – **Update This sampling took place near the former interior catch basin at the 5th Wheel Site**

2007

The USTs were decommissioned and removed in November 2007 No holes were observed in the tanks The USTs stored waste oil for heating purposes during winter months and were pumped out by a recycling company during the summer months

Name	Date Installed	Date Removed	Tank Type & Status	Size (gallons)	Contents	Signs of Release?
West Tank	~1946	Nov 2007	UST assumed steel and single walled Corrosion but no holes	2 000	Used Oil from auto servicing	overfilling only
East Tank	~1975	Nov 2007	UST assumed steel and single walled Corrosion but no holes	2 000	Used Oil from auto servicing	overfilling only

UST excavation sampling and analysis

Documentation of the decommissioning and site assessment are inadequate The activities that were documented **do not** meet the requirements of MTCA

A discussion or figure illustrating the depth of the USTs or the dimensions of the excavations was not provided It is not known if the sample locations and depths selected are appropriate Ecology requires a sample be collected from the beneath the tank It appears from the limited information that all samples were collected from the sidewalls at various depths

The excavation sidewall samples were only analyzed for diesel and heavy oil Ecology requires additional testing for waste oil releases

No samples had concentrations of heavy oil greater than the CUL however the deepest sample collected had the highest concentration (west tank S 6 12 ft bgs 492 mg/kg) Considering the high groundwater elevation is about 14 ft bgs both soil and groundwater should be analyzed for petroleum products VOCs/HVOCs fuel additives and blending compounds cPAHs PCBs and other analytes as required or necessary

Tank Sludge

The sludge and oil removed during decommissioning was properly disposed of as dangerous waste by Safety Kleen Documentation was provided

The sludge was analyzed for metals (As Cd Cr and Pb) and PCBs (non detect) A Chlor d tect test was performed by Ecology Hazardous Waste staff A max of >4 000 ppm chlorine compounds were detected (possible source of PCE in GW)

Stockpiles

4 stockpiles were segregated by their anticipated levels of contamination and moved to a vacant lot owned by Mr Hahn at the SW corner of S 6th St and E Arlington

Stockpile #1 the most contaminated (heavy oil = 4 980 mg/kg) was disposed of at the Anderson PCS facility in Yakima Documentation was provided

Stockpiles #2 #3 and #4 were classified as solid waste by the Yakima Health District The report states the stockpiles were disposed of at the New Waste Landfill No documentation was provided but Ecology did not see any indications of stockpiled material during the site visit (2/2016)

2014

The Site was sold to Doug and Connie Bettarel for use as a used car sales lot According to Mr Hahn no servicing has been performed since the ownership change (unconfirmed)

2016

Ecology Site Visit Mr Hahn and Wayne Griffith (retired general manager) escorted Jennifer Lind and Kyle Parker through the facility and answered questions regarding general operating practices

See the discussion above regarding the sumps

Three previously unknown drywells were identified by Mr Hahn and Mr Griffith Two of the drywells appear to be stormdrains and one of the drywells is likely connected to the easternmost sump Ecology contacted the City of Yakima stormwater engineer who thought it unlikely that the drywells were hooked up to the stormwater system None of the drywells are registered as required and the drywell connected to the sump is considered a prohibited UIC well under WAC 173 218 040(5)(b)(ii) and (v) Mary Shaleen Hansen (ECY UIC permitting) was contacted and will do a follow up compliance/outreach with the Site representative

The drywell should be decommissioned and appropriate sampling performed

SOILS

Subsurface	Unconsolidated sand and gravel
Data Gaps	Additional sampling and analyses (ALL required in Table 830 1) in near former USTs sumps and drywell connected to Sump #2

GROUNDWATER

Depth below ground surface (ft)	14 – 19 ft bgs at N adjoining 5th Wheel Site
Confined/Unconfined	Shallow aquifer unconfined (source YRRA report)
Flow Direction & Gradient	YRRA is primarily to the E with an approximate gradient of 0 005 5th Wheel Site ranges from E to SE
Contaminant Plume Defined?	No
Data Gaps	Yes Groundwater collected near the USTs has petroleum concentrations exceeding CULs and soil contamination is present in contact with groundwater The nature of the contamination has not been characterized

REPORTS AND CORRESPONDENCE

1 Earth Consultants Inc 1989 *Preliminary Integrity Assessment of Two USTs and Three Industrial Waste Water Sumps 1201 S 1st St and 307 E Arlington St Yakima WA* October 1989

2 PETCO Inc 2008 *UST Decommissioning & Site Assessment Report for UST Site #200130 1201 S 1st St Yakima WA* February 2008

3 Department of Ecology Correspondence File 1989 2015

VCP OPINION OUTLINE

Characterization

Insufficient and unsubstantiated

WAC 173 340 350 requires sufficient investigations to characterize the distribution of hazardous substances present at the site and threat to human health and the environment Further investigation of both soil and groundwater near the USTs both sumps and drywell connected to Sump #2 are required to adequately characterize the Site

The investigation should consist of sufficient sampling and analyses to demonstrate a COPC is not affecting the Site **and** to define the location quantity extent and concentration of all COCs known to be affecting the Site

The investigation should follow the analytical requirements and recommendations for waste oil releases as discussed in the following Ecology documents

- *Guidance for Site Checks and Site Assessments for Underground Storage Tanks* (Pub #90 52)
- *Guidance for Remediation of Petroleum Contaminated Sites* (Pub #10 09 057)
- *Model Toxics Control Act Regulation and Statute* (Pub #94 06)

Cleanup Levels

Do not meet the substantive requirements of MTCA

Reasoning

- The characterization of the Site is insufficient to establish cleanup standards

Point of Compliance

Does not meet the substantive requirements of MTCA

Reasoning

The following explanation or actions are necessary to establish or substantiate the cleanup standards

- Whether the points of compliance are standard or conditional
- The basis for the points of compliance (e g for soil the points may be based on protection of ground water quality)

Selection of Cleanup Action	Does not meet the substantive requirements of MTCA Reasoning • The characterization of the Site is not sufficient to select a cleanup action

1989 - UST and Sump Assessment Groundwater Samples

Sample Name	Sample Location	Depth (ft bgs)	Date Sampled	Date Analyzed	TPH (ug/L) 418.1	Gasoline (ug/L) NWTPH-Gx	Diesel (ug/L) NWTPH-Dx	Heavy Oil (ug/L) NWTPH-Dx
B-1	NE corner of West UST	14	?	8/1989	<5,000	--	--	--
B-2	NE corner of East UST	14	?	8/1989	5,000	--	--	--
				MTCA Method A CUL		30/100	2,000	2,000

Notes
1 <3.2 PQL is greater than the CUL
2 510 concentration is greater than the CUL
3 510 detected below the CUL
4 Method 418.1 is not appropriate for gasoline

1989 - UST and Sump Assessment Soil Samples

Sample Name	Sample Location	Depth (ft bgs)	Date Sampled	Date Analyzed	TPH (mg/kg) 418.1	Volatile Organic Compounds (VOCs) (mg/kg) EPA 8240				Halogenated VOCs (mg/kg) EPA 8240				
						B	T	E	X	VC	DCE	TCE	PCE	1,1,1 Trichloroethane
Sump #1	Adjacent to Eastern sump	6 foot composite	?	8/1989	236	<0.001	~0.005	<0.0008	<0.0018	<0.002	<0.0008	<0.0006	0.0007	0.0052
Sump #2	Adjacent to Western sump	6 foot composite	?	8/1989	36.2	<0.0011	0.025	0.0022	0.0088	<0.0022	0.0017	0.0029	0.0073	0.0011
B-1	NE corner of West UST	8	?	8/1989	16.9	--	--	--	--	--	--	--	--	--
B-1	NE corner of West UST	15	?	8/1989	17.2	--	--	--	--	--	--	--	--	--
B-2	NE corner of East UST	10	?	8/1989	16.7	--	--	--	--	--	--	--	--	--
B-2	NE corner of East UST	15	?	8/1989	162	--	--	--	--	--	--	--	--	--
B-2 dup.	NE corner of East UST	15	?	8/1989	133	--	--	--	--	--	--	--	--	--
				MTCA Method A CUL		0.03	7	6	9			0.03	0.05	2
						0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005

Notes

1 <3.2 PQL is greater than the CUL

2 510 conc. is greater than the CUL

3 510 detected below the CUL

4 Method 418.1 is not appropriate for gasoline

5 Sump locations on figure and sample location descriptions are not consistent. Unclear which is correct.

These are the EPA Method Estimated Quatitation Limits. The EQLs are based on wet weight, and will be higher with a lower % dry weight. Not sure how accurate the reported concentrations are. Detection Limits are really low.

APPENDIX B

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Central Region Office
1250 West Alder St., Union Gap, WA 98903-0009 • 509-575-2490

January 12, 2024

Debra Manjarrez
Manjarrez & De Leon Inc, PS
2010 W. Nob Hill Boulevard, Suite 1
Yakima, WA 98902

Re: Further Action at the following Site:

- **Site Name:** Hahn Motor Company
- **Site Address:** 1201 S. 1st Street, Yakima
- **Facility/Site No.:** 502
- **Cleanup Site No.:** 4927
- **VCP Project No.:** CE0529

Dear Debra Manjarrez:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Hahn Motor Company facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70A.305 RCW.[1]

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

> **YES. Ecology has determined that further remedial action is necessary to clean up contamination at the Site.**

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70A.305 RCW, and its implementing regulations, Chapter 173-340 WAC[2] (collectively "substantive requirements of MTCA"). The analysis is provided below.

[1] https://app.leg.wa.gov/rcw/default.aspx?cite=70A.305
[2] https://apps.leg.wa.gov/wac/default.aspx?cite=173-340

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following releases:

- Tetrachloroethylene to Soil and Ground Water
- Diesel to Soil and Ground Water
- Metals to Soil and Ground Water

Enclosure A includes a description and diagram of the Site, as currently known to Ecology.

Please note the Site is a known sub-facility of the Yakima Railroad facility (FSID No. 500).[3] The Yakima Railroad is a comingled plume and is comprised of several sub-facilities along the Yakima Railroad Corridor. Each sub-facility must demonstrate that site soils meet appropriate MTCA cleanup levels or removed to the greatest extent practicable and are no longer contributing to the areawide PCE contamination. Vapor intrusion is a concern that must be considered as part of any long-term remediation of sites within the Yakima Railroad plume.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. Blue Mountain Environmental and Consulting Company, Inc., September 2023 Groundwater Sampling Event Report, dated October 5, 2023.[4]
2. State of Washington Department of Ecology, Opinion on Proposed Cleanup of the Following Site, dated March 14, 2023.[5]
3. Blue Mountain Environmental and Consulting Company, Inc., June 2023 Groundwater Sampling Event Report, dated July 10, 2023.[6]
4. Blue Mountain Environmental and Consulting Company, Inc., December 2022 Groundwater Sampling Event Report, dated January 27, 2023.[7]
5. Blue Mountain Environmental and Consulting Company, Inc., September 2022 Additional Subsurface Investigation Report, dated October 17, 2022.[8]

[3] https://apps.ecology.wa.gov/cleanupsearch/site/3632
[4] https://apps.ecology.wa.gov/cleanupsearch/document/131121
[5] https://apps.ecology.wa.gov/cleanupsearch/document/122824
[6] https://apps.ecology.wa.gov/cleanupsearch/document/135116
[7] https://apps.ecology.wa.gov/cleanupsearch/document/122389
[8] https://apps.ecology.wa.gov/cleanupsearch/document/118102

Analysis of the Cleanup

Ecology has concluded that **further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. **Characterization of the Site.**

Ecology has determined your characterization of the Site is sufficient to establish cleanup standards but insufficient to select a cleanup action.

Sufficient remedial investigation has occurred to appropriately determine the nature of site contamination. This means that sufficient data exists determine contaminants of concern for the site and to establish cleanup standards.

The Site characterization is insufficient to establish a cleanup action. The latest groundwater samples identified the presence of tetrachloroethylene (PCE) above the established Site cleanup levels.

While the Site is a sub-facility of the Yakima Railroad and PCE is a known contaminant associated with both this Site and the greater Yakima Railroad, Ecology lacks evidence of off-site PCE contamination. The most recent sampling of other nearby PCE contaminated sites indicates that PCE concentrations are now below cleanup standards. Further investigation is needed to identify the source of PCE found in the Site groundwater.

PCE was identified in the monitoring wells (MW1, MW2, and MW7) immediately next to the building. Vapor intrusion is a concern with volatile organic compounds like PCE and its breakdown products. Due to the PCE located within wells MW1, MW2 and MW7 a vapor intrusion evaluation[18] is warranted.

2. **Establishment of cleanup standards.**

Ecology has determined the cleanup levels and points of compliance you established for the Site meet the substantive requirements of MTCA.

The Site uses MTCA Method A Cleanup Levels for soil. These cleanup levels are for unrestricted land use and implement standard points of compliance.

[18] https://apps.ecology.wa.gov/publications/documents/0909047.pdf

6. Blue Mountain Environmental and Consulting Company, Inc., Drywell Decommissioning and Contaminated Soil Removal Report, dated July 28, 2022.[9]
7. Blue Mountain Environmental and Consulting Company, Inc., February 1, 2022 Subsurface Investigation Report, dated March 4, 2022.[10]
8. State of Washington Department of Ecology, Further Action Letter, dated February 23, 2016.[11]
9. PETCO Incorporated, Underground Storage Tank Decommissioning & Site Assessment Report for UST Site #200130 Yakima, Washington, dated February 2008.[12]
10. PLSA Engineering & Surveying, Letter regarding land farming sampling, dated June 29, 1992.[13]
11. Hahn Motor Company Site Hazard Assessment, dated March 12, 1991.[14]
12. Earth Consultants, Inc., Preliminary Integrity Assessment of Two Underground Storage Tanks (UST)s and Three Industrial Waste Water Sumps, dated October 25, 1989.[15]

A number of these documents are accessible in electronic form from the Site webpage.[16] The complete records are stored at the Central Regional Office of Ecology (CRO) for review by appointment only. Visit our Public Records Request page[17] to submit a public records request or get more information about the process. If you require assistance with this process, you may contact the Public Records Officer at publicrecordsofficer@ecy.wa.gov or 509-575-2490.

This opinion is void if any of the information contained in those documents is materially false or misleading.

[9] https://apps.ecology.wa.gov/cleanupsearch/document/114972
[10] https://apps.ecology.wa.gov/cleanupsearch/document/111174
[11] https://apps.ecology.wa.gov/cleanupsearch/document/53701
[12] https://apps.ecology.wa.gov/cleanupsearch/document/4485
[13] https://apps.ecology.wa.gov/cleanupsearch/document/4481
[14] https://apps.ecology.wa.gov/cleanupsearch/document/4484
[15] https://apps.ecology.wa.gov/cleanupsearch/document/4482
[16] https://apps.ecology.wa.gov/cleanupsearch/site/4927
[17] https://ecology.wa.gov/publicrecords

This means that soils, across the site, from ground surface to 15 feet below ground surface must meet the selected cleanup levels.

MTCA Method A Cleanup Levels for ground water were selected. These cleanup levels are for the beneficial use of water with standard points of compliance. This means that groundwater across the site must meet the selected cleanup levels.

Contaminant	MTCA Method A Soil Cleanup Levels (mg/kg)	MTCA Method A Groundwater Cleanup Levels (µg/L)
Diesel	2000	500
Heavy Oil	2000	500
PCE	0.05	5
TCE	0.03	5
Cis-DCE	-	70
Vinyl Chloride	-	0.2
Arsenic	20	5
Cadmium	2	5
Chromium	19	50
Lead	250	15
Mercury	2	2

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site does not meet the substantive requirements of MTCA.

Site characterization is not sufficient to select a cleanup action. Questions remain regarding the source of PCE in groundwater and the effect is has on indoor air (i.e. vapor intrusion).

4. Cleanup.

Ecology has determined the cleanup you performed does not meet any cleanup standards at the Site.

In addition, further investigating the PCE in groundwater and its effects on indoor air, additional groundwater sampling is necessary. Ecology requires a minimum of four clean consecutive quarters of sampling before a Site can qualify for a no further action determination.

TPH-D, TPH-G, and TPH-O were not detected above cleanup levels in any monitoring well and therefore further sampling for these contaminants are not required. However, further sampling of certain metals is required from wells MW1, MW2, MW3, MW4, MW5, and MW6.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70A.305.040(4).[19]

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action.

This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70A.305.080[20] and WAC 173-340-545.[21]

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70A.305.170.[22]

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[19] https://app.leg.wa.gov/rcw/default.aspx?cite=70A.305.040
[20] https://app.leg.wa.gov/rcw/default.aspx?cite=70A.305.080
[21] https://app.leg.wa.gov/wac/default.aspx?cite=173-340-545
[22] https://app.leg.wa.gov/rcw/default.aspx?cite=70A.305.170

Contact Information

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm.[23]

If you have any questions about this opinion, please contact me by phone at 509-406-6959 or e-mail at Kyle.Parker@ecy.wa.gov.

Sincerely,

Kyle Parker
Toxics Cleanup Program
Central Region Office

Enclosure: A – Site Description and Diagram

[23] https://ecology.wa.gov/spills-cleanup/contamination-cleanup/voluntary-cleanup-program

Enclosure A

Site Description and Diagram

Site Description

Hahn Motor Company facility (Site) is located on the southeast corner of South 1st Street and East Arlington Street in the city of Yakima, Washington. The Site historically had a heating oil tank which was converted to a waste oil tank after it was no longer used for its intended original use. A second waste oil tank was also installed at the site. The diesel, heavy oil, and tetrachloroethylene (PCE) contamination at the site is believed to be released from those tanks and potentially form the maintenance shop for the auto dealer. The nature and extent of metals found within the groundwater is still under investigation. Diesel, heavy oil, and PCE were released to soil and migrated to groundwater. PCE and its degradation products poses a potential vapor intrusion threat at the Site and therefore is a potential pathway to exposure for workers within the structure. As most of the site is covered with cement or asphalt contact to soils is unlikely unless soil disturbance occurs. Contaminated sites are defined by their release(s) and where contamination associated with the release(s) has come to be located. The Site as currently known to Ecology is located within the property of the original release, as shown in the Site Diagram.

Site Diagram

BMEC **P.O. Box 545/125 Main Street** **Waitsburg, Washington 99361**	**FIGURE 2 – SITE LOCATION MAP**	**Hahn Motors Company** **1201 South 1st Street** **Yakima, Washington 98901**

APPENDIX C

E. Arlington St.

S. First St.

N ↑ Bldg (Bay) (Bay) DW → SB-1

BORING/WELL CONSTRUCTION LOG

Project Number E2021-0910	Boring/Well Number SB-1
Project Name Hahn Motor Company	Date Drilled 2/1/22
Location 201 South First Street - Yakima, WA	Casing Type/Diameter 4"
Drilling Method Sonic	Screen Type/Slot PVC @ 10-15' / 0.010"
Sampling Method Core Barrel / Sample Bag	Gravel Pack Type NA
Ground Elevation NA	Grout Type Bentonite
Top of Casing Elevation NA	Depth to Water/Date 11' 2/1/22
Logged by B. Bergeron	Ground Water Elevation/Date NA
Remarks GW sample = SB1-2-1-22-GW	Drilling Co. Environmental West Explorations (EWE)

PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL)	U.S.C.S	Graphic Log	Lithologic Description	Contact Depth	Well Diagram
0	NA							0-0.25': Asphalt		
0.1								0.25-7': Dark brown, silty, sandy, coarse GRAVEL & COBBLE, well-rounded, damp-moist, loose.		
0						GW				
0										
0	SB1-2-1-22-5'			X	5				5.0	
0.1										
1.6	SB1-2-1-22-7'			X						
1.7						GW		7-10': DK gray, well-rounded, coarse GRAVEL & COBBLE, some sand, wet, strong petro odor (weathered motor oil ?), loose.		
1.6										
1.5	SB-2-1-22-10'			X	10				10.0	
5.5					1230 ▼			10-13': DK gray, sandy, well-rounded GRAVEL & COBBLE, coarse, little silt, loose, spo, wet.		
6.1										
7.5						GW				
6.0								13-15': DK brown, sandy, well-rounded GRAVEL & COBBLE, loose, damp.		
0.5	SB-2-1-22-15'			X	15				15.0	
								TD = 15'		
					20				20.0	
					25				25.0	
					30				30.0	

E. Arlington St.

S. First Street

N

Bldg
Bay Bay

SB2 ⊕ Dry Well 2

BORING/WELL CONSTRUCTION LOG

Project Number E2021-0910	Boring/Well Number SB-2
Project Name Hahn Motor Company	Date Drilled 2/1/22
Location 1201 S. First St - Yakima, WA	Casing Type/Diameter 4"
Drilling Method Sonic	Screen Type/Slot NA
Sampling Method Core Barrel / Sample Bag	Gravel Pack Type NA
Ground Elevation NA	Grout Type Bentonite
Top of Casing Elevation NA	Depth to Water/Date NA
Logged by B. Bergeron	Ground Water Elevation/Date NA
Remarks	Drilling Co. Env West Explorations

PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL)	U.S.C.S	Graphic Log	Lithologic Description	Contact Depth	Well Diagram
0	NA					GW		0-0.25': Asphalt 0.25-15': Brown, sandy, well-rounded, coarse GRAVEL & COBBLE, little silt, loose, damp.		
0.8	SB2-2-1-22-5			X	5				5.0	
0	SB2-2-1-22-10			X	10	GW			10.0	
0	SB2-2-1-22-15'			X	15	GW		TD = 15'	15.0	
					20				20.0	
					25				25.0	
					30				30.0	

E. Arlington St.

S. First Street

N

Bldg (Bay 1 | Bay 1)

DW1 ⊕ DW2 ⊕ SB3

BORING/WELL CONSTRUCTION LOG

Project Number E2021-0910	Boring/Well Number SB3
Project Name Hahn Motor Co.	Date Drilled 2/1/22
Location 1201 S. First St - Yakima, WA	Casing Type/Diameter 4" → 6"
Drilling Method Sonic	Screen Type/Slot 0.010" slotted PVC @ 15-25'
Sampling Method Core Barrel/Sample Bag	Gravel Pack Type NA
Ground Elevation NA	Grout Type Bentonite
Top of Casing Elevation NA	Depth to Water/Date 16.3' 2/1/22
Logged by B. Bergeron	Ground Water Elevation/Date
Remarks PID @ 25' likely due to excessive heat!	Drilling Co. Env. West Explorations

GW Sample = SB3-2-1-22-GW

PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL)	U.S.C.S	Graphic Log	Lithologic Description	Contact Depth	Well Diagram
0	NA					GW		0-0.25': Asphalt 0.25-20': Brown, sandy, well-rounded, coarse GRAVEL & COBBLE, little silt, loose, damp.		
0.7	SB3-2-1-22-5			X	5				5.0	
0					10	GW				
	SB3-2-1-22-10'			X					10.0	
0					15	GW				
0.2			2/1/22 ▼						15.0	
0.1					20	GW		COBBLE-zone @ 18.5-19.5'		
0.2									20.0	
0					25	GW		20-25': Brown, silty, well-rounded; coarse GRAVEL, little sand, V. moist to wet, loose. No odor!		
0.8										
2.0	SB3-2-1-22-25'			X					25.0	
								T.D = 25'		
					30				30.0	

E. Arlington St.

S. First St.

UST UST

SB4

Bldg

N

BORING/WELL CONSTRUCTION LOG

Project Number E2021-0910	Boring/Well Number SB4
Project Name Hahn Motor Co.	Date Drilled 2/1/22
Location 1201 S. First St - Yakima, WA	Casing Type/Diameter 4"
Drilling Method Sonic	Screen Type/Slot NA
Sampling Method Core Barrel / Sample Bag	Gravel Pack Type NA
Ground Elevation NA	Grout Type Bentonite
Top of Casing Elevation NA	Depth to Water/Date 18'. 1605
Logged by B. Bergeron	Ground Water Elevation/Date NA
Remarks	Drilling Co. Env West Explorations

PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL.)	U.S.C.S	Graphic Log	Lithologic Description	Contact Depth	Well Diagram
0	NA					GW		0-0.25': Asphalt 0.25-5': Dark brown, sandy, well-rounded, coarse GRAVEL, little silt, loose, damp.		
0	SB4-2-1-22-5'			X	5				5.0	
0						GP		5-11': Gray, well-rounded, coarse GRAVEL & COBBLES, loose, dry.		
0	SB4-2-1-22-10'			X	10				10.0	
0						GP GW		11-18': Gray-brown, sandy, well-rounded, coarse GRAVEL, damp, little silt, loose.		
0	SB4-2-1-22-15'			X	15				15.0	
0						GW		18-20': Brown, sandy, well-rounded, coarse GRAVEL, loose, v. moist - wet.		
0	SB4-2-1-22-20'			X	20				20.0	
								TD = 20'		
					25				25.0	
					30				30.0	

1620
1625
1630

E. Arlington St

S. 1st Street

UST · UST

SB5

Bldg

N

BORING/WELL CONSTRUCTION LOG

Project Number E2021-0910	Boring/Well Number SB5
Project Name Hahn Motor Co.	Date Drilled 2/1/22
Location 201 S. First St - Yakima, WA	Casing Type/Diameter 8"
Drilling Method Sonic	Screen Type/Slot 0.010" slotted PVC 15-25'
Sampling Method Core Barrel / Sample Bag	Gravel Pack Type NA
Ground Elevation NA	Grout Type Bentonite
Top of Casing Elevation NA	Depth to Water/Date 14.5' 2/1/22
Logged by B. Bergeron	Ground Water Elevation/Date NA
Remarks GW Sample = SB5-2-1-22-GW	Drilling Co. EWE

PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL)	U.S.C.S	Graphic Log	Lithologic Description	Contact Depth	Well Diagram
0	NA					GW		0-0.25': Asphalt 0.25-5': Gray, pulverized rock & GRAVEL, coarse, well-rounded, dry.		
0					5				5.0	
0	SB5-2-1-22-5'			X		GW		5-9': Gray-brown, sandy, well-rounded, coarse GRAVEL, little silt, loose, damp.		
0	SB5-2-1-22-10'			X	10			9-10': Brown PEA GRAVEL?		
0		1700			14.5'	ML		10-20': Dark brown, sandy SILT, some well-rounded cobbles & gravel, loose, moist.	10.0	
0	SB5-2-1-22-15'			X	15				15.0	
0					20	ML				
0	SB5-2-1-22-20'			X		ML		20-22': Brown mottled red SILT, little well-rounded gravel, moist, very firm/tight. 22-25': Dark brown, sandy, well-rounded, coarse GRAVEL, loose, wet.	20.0	
0					25				25.0	
								TD = 25'		
					30				30.0	

1650
1655
1700

1800 ~~SB~~ SB5-2-1-22-GW
~~GW~~

E. Arlington St

UST UST

N

S. 1st Street

Bldg SB6

BORING/WELL CONSTRUCTION LOG

Project Number E2021-0910
Project Name Former Hahn Motors
Location 1201 South 1st St - Yakima, WA 98901
Drilling Method Sonic
Sampling Method Core Barrel / Sample Bag
Ground Elevation NA
Top of Casing Elevation NA
Logged by Brent Bergeron, LHG
Remarks

Boring/Well Number SB6
Date Drilled 2/1/22
Casing Type/Diameter 4"
Screen Type/Slot NA
Gravel Pack Type NA
Grout Type Bentonite
Depth to Water/Date NA
Ground Water Elevation/Date NA
Drilling Co. Environmental West Explorations

PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL)	U.S.C.S	Graphic Log	Lithologic Description	Contact Depth	Well Diagram
0						GW		0-0.25': Asphalt 0.25-12': Brown, sandy, well-rounded coarse GRAVEL & COBBLE, little silt, loose, damp.		
1.4	SB6-2-1-22-5'			X	5				5.0	
0						GW				
0	SB6-2-1-22-10'			X	10				10.0	
0						GW		10-20': 12-20': Brown, sandy GRAVEL, some silt, loose, damp.		
0	SB6-2-1-22-15'			X	15				15.0	
0						GW				
	SB6-2-1-22-20'			X	20			TD=20'	20.0	
					25				25.0	
					30				30.0	

1730
1735
1740

E. Arlington St.

S. 1ST Street

MW1

Bldg

N

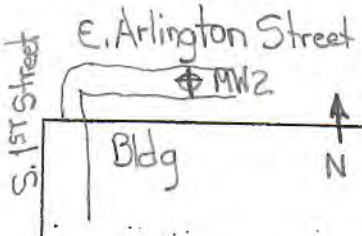
BORING/WELL CONSTRUCTION LOG

Project Number E2022-0805	Boring/Well Number MW1
Project Name Hahn Motor Company - MW Install	Date Drilled 9/28/22 0930
Location 1201 S. First Street in Yakima, WA	Casing Type/Diameter 6" OD
Drilling Method Sonic	Screen Type/Slot Schedule 40 PVC / 0.010"
Sampling Method Core Barrel/Sample Bag	Gravel Pack Type Silica Sand
Ground Elevation NA	Grout Type Bentonite
Top of Casing Elevation	Depth to Water/Date 15.48 ft btoc / 10 3 22
Logged by B. Bergeron, LHG	Ground Water Elevation/Date 1027.21' NAVD 88
Remarks	Drilling Co. Holt Services

PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL)	U.S.C.S.	Graphic Log	Lithologic Description	Contact Depth	Well Diagram
0.7	NA	90	NA					0-0.5': Asphalt		MW 1
0.5								0.5-8': DK brown, silty SAND, trace gravel, moist, loose - mod firm.		2'
0.5										
0.4										
0.4					5				5.0	
0.5										
0.7										
0.5										
0.3								8-10': Brown, sandy, GRAVEL & COBBLES, coarse, rounded, loose, damp.		8'
1	MW1-9-28-22-10'			X	10					
0.6		100							10.0	10'
0.6								10-18.5': Gray, silty, coarse rounded GRAVEL, trace sand, firm, moist.		
0.7										
0.6										
0.9					15					
0.7									15.0	
0.6									10/3/22	
1.1										
1	MW1-9-28-22-19'			X				18.5-20': Brown-gray, sandy, rounded coarse GRAVEL, loose, damp.		
1		100			20					
0.6								20-25': Brown-gray, SAND & GRAVEL, well-rounded, coarse, loose, wet - V. wet.	20.0	
0.7										
0.7										
0.9										
1.1					25					
								TD=25'	25.0	25'
					30				30.0	

1030 10'

1040 19'

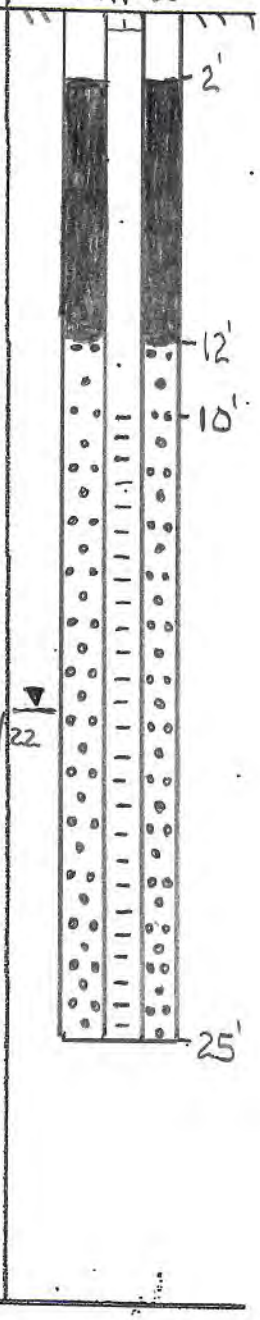


BORING/WELL CONSTRUCTION LOG

Project Number E2022-0805	Boring/Well Number MW2
Project Name Hahn Motor Company - MW Install	Date Drilled 9/28/22
Location 1201 S. First Street in Yakima, WA	Casing Type/Diameter 6" OD
Drilling Method Sonic	Screen Type/Slot Schedule 40 PVC / 0.010"
Sampling Method Core Barrel/Sample Bag	Gravel Pack Type Silica Sand
Ground Elevation NA	Grout Type Bentonite
Top of Casing Elevation	Depth to Water/Date 16.66 ft btoc / 10 3 22
Logged by B. Bergeron, LHG	Ground Water Elevation/Date 1026.23' NAVD88
Remarks	Drilling Co. Holt Services

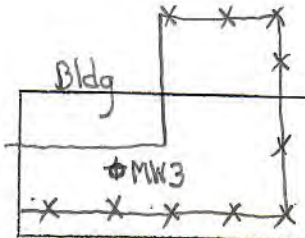
PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL.)	U.S.C.S.	Graphic Log	Lithologic Description	Contact Depth
0.3	NA	80	NA					0-0.5': Asphalt	
0.3								0.5-3': Brown SILT, some gravel, firm, damp.	
0.3									
0.6								3-10': Brown sandy, rounded coarse GRAVEL,	
0.7					5			COBBLE @ 10', damp.	5.0
0.3									
0.3									
0.5									
0.3									
0.3					10				10.0
0.3								10-11': PEA GRAVEL, moist	
0.4								11-17': Green-gray-brown, sandy GRAVEL, rounded,	
2.7									
0.2	MW2-9-28-22-13'			X				coarse, dry, loose	
0.5					15				15.0
0									
0.1									
0.3	MW2-9-28-22-18'			X				17-20': DK brn, gravelly SAND, well-graded,	10/3/22
0.1								loose, v. moist - wet.	
0.2					20				20.0
2.1								20-25': SAA	
0.7									
1									
0.6									
4.2					25				25.0
								TD = 25'	
					30				30.0

Well Diagram



0900 13'

0910 18'

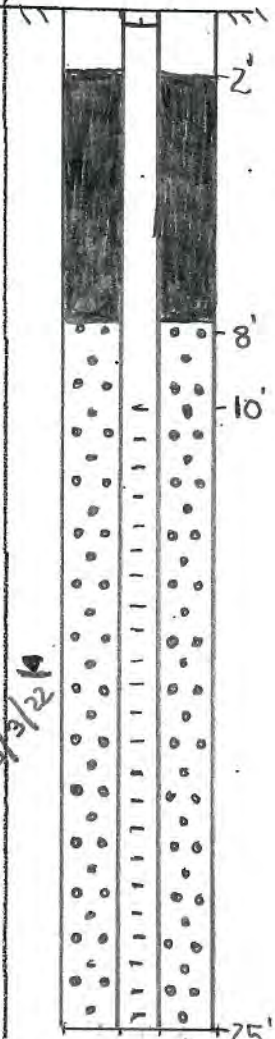


BORING/WELL CONSTRUCTION LOG

Project Number E2022-0805	Boring/Well Number MW 3
Project Name Hahn Motor Company - MW Install	Date Drilled 9/27/22 1020
Location 1201 S. First Street in Yakima, WA	Casing Type/Diameter 6" OD
Drilling Method Sonic	Screen Type/Slot Schedule 40 PVC / 0.010"
Sampling Method Core Barrel/Sample Bag	Gravel Pack Type Silica Sand
Ground Elevation NA	Grout Type Bentonite
Top of Casing Elevation	Depth to Water/Date 16.36 ft btoc / 10 3 22
Logged by B. Bergeron, LHG	Ground Water Elevation/Date 1025.52' NAVD88
Remarks	Drilling Co. Holt Services

PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL.)	U.S.C.S	Graphic Log	Lithologic Description	Contact Depth
1.1	NA	100	NA					0-0.5': Asphalt	
2.1								0.5-15': 3/4-Fill	
2.2									
0.4									
0.8					5				5.0
0.6									
0.3									
0.2									
0.2									
0.5					10				10.0
0.3		50							
0.6									
1.2									
1.2									
0.2	MW3-9-27-22-15'			X	15				15.0
0.6		100						15-25': Brown-gray, sandy, rounded GRAVEL, fine- to coarse-, trace silt, loose, moist to v. moist.	
0.4									
0.7									
0.9									
0.6		9/27/22		▼	20				20.0
0.9									
0.8									
1.0									
0.7	MW3-9-27-22-23'			X	25				25.0
0.7								TD=25'	
					30				30.0

Well Diagram MW 3



1105 15'
1110 23'

E. Arlington St.

BORING/WELL CONSTRUCTION LOG

Project Number E2022-0805	Boring/Well Number MW 4
Project Name Hahn Motor Company - MW Install	Date Drilled 9/27/22 1610
Location 1201 S. First Street in Yakima, WA	Casing Type/Diameter 6" OD
Drilling Method Sonic	Screen Type/Slot Schedule 40 PVC / 0.010"
Sampling Method Core Barrel/Sample Bag	Gravel Pack Type Silica Sand
Ground Elevation NA	Grout Type Bentonite
Top of Casing Elevation	Depth to Water/Date 16.19 ft btoc / 10 3 22
Logged by B. Bergeron, LHG	Ground Water Elevation/Date 1024.99' NAVD88
Remarks	Drilling Co. Holt Services

PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL.)	U.S.C.S	Graphic Log	Lithologic Description	Contact Depth	Well Diagram
0.5	NA	80	NA					0-0.5': Asphalt		MW4
0.6								0.5-2': Dark brown SILT, little rounded gravel, firm, damp.		
0.6								2-10': Lt brown, sandy, rounded coarse GRAVEL, loose, dry.		
0.4										
1.3					5					
0.7									5.0	
0.2										
0.2										
0.2										
0.4					10					
1.1		100						10-19': Lt brown-gray SAND & GRAVEL, rounded, coarse, dry, loose		
0.3										
0.8										
0.3										
0.2					15					
1.9									15.0	
0.3	MW4-9/27/22-16'			X					10/3/22 ▼	
0.2										
0.3										
1.8	MW4-9/27/22-20'			X	20			19-20': Brown, loose, sandy, rounded coarse GRAVEL, damp,		
0.1									20.0	
0.3								20-25': Light brown, gravelly SAND, rounded, fine- to coarse, dry, loose.		
0.3										
0.3										
0.3					25					
								TD = 25'	25.0	
					30				30.0	

Well Diagram: 2', 8', 10', 25'

1710 16'

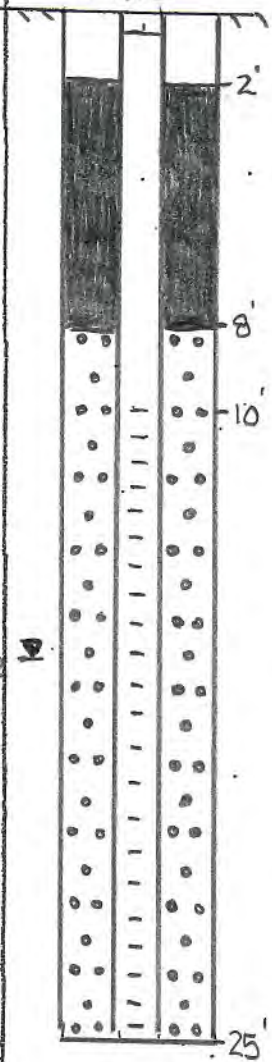
1715 20'

BORING/WELL CONSTRUCTION LOG

Project Number E2022-0805	Boring/Well Number MW5
Project Name Hahn Motor Company - MW Install	Date Drilled 9/27/22 1450
Location 201 S. First Street in Yakima, WA	Casing Type/Diameter 6" OD
Drilling Method Sonic	Screen Type/Slot Schedule 40 PVC / 0.010"
Sampling Method Core Barrel/Sample Bag	Gravel Pack Type Silica Sand
Ground Elevation NA	Grout Type Bentonite
Top of Casing Elevation	Depth to Water/Date 15.94 ft btoc / 10 3 22
Logged by B. Bergeron, LHG	Ground Water Elevation/Date 1024.79' NAVD 88
Remarks	Drilling Co. Holt Services

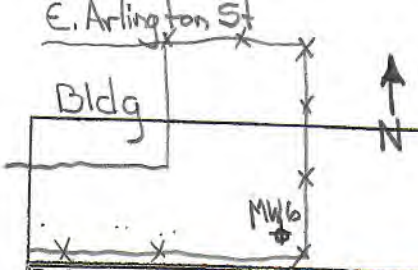
PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL.)	U.S.C.S	Graphic Log	Lithologic Description	Contact Depth
4.1	NA	75	NA					0-0.5': Asphalt	
0.8								0.5-1': Gray COBBLE, dry, rounded.	
0.6								1-5': Brown, Sandy, rounded coarse GRAVEL, dry, loose.	
1.6									
1.8					5				
1.6								5-20': Gray-brown, SAND & GRAVEL, rounded, coarse, dry, loose.	5.0
1.6									
0.3									
1.4									
1.4					10				
0.2		100							10.0
0.2									
0.1									
0.6									
1.0	MW5	9/27/22	15'	X	15				15.0
0.1									
0.1									10/3/22 ▼
0.2									
0.3									
0.8	MW5	9/27/22-9/27/22	20'	X ▼	20				
0.1		100							20.0
0.3								20-25': Brown, medium SAND, trace rounded coarse gravel, wet - V. wet, loose, well-sorted.	
0.1									
0.1									
0.2					25				
								TD = 25'	25.0
					30				30.0

Well Diagram



15' 1515

20' 1520



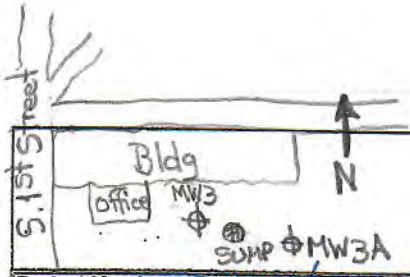
BORING/WELL CONSTRUCTION LOG

Project Number E2022-0805	Boring/Well Number MW6
Project Name Hahn Motor Company - MW Install	Date Drilled 9/27/22 1230
Location 1201 S. First Street in Yakima, WA	Casing Type/Diameter 6" OD
Drilling Method Sonic	Screen Type/Slot Schedule 40 PVC / 0.010"
Sampling Method Core Barrel/Sample Bag	Gravel Pack Type Silica Sand
Ground Elevation NA	Grout Type Bentonite
Top of Casing Elevation	Depth to Water/Date 15.57 ft btoc / 10 3 22
Logged by D. Bergeron, LHG	Ground Water Elevation/Date 1024.49' NAVD88
Remarks	Drilling Co. Holt Services

PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL.)	U.S.C.S	Graphic Log	Lithologic Description	Contact Depth	Well Diagram MW6
4.1	NA	100	NA		0			0-0.5': Asphalt		
1.9								0.5-2': Brown SILT, little gravel, damp.		
3.5								2-10': Lt brown, sandy, rounded GRAVEL, fine- to coarse-, dry, loose.		
3.9										
2.5					5					
0.6									5.0	
2.1										
0.4										
1.8										
2.1					10					
1.2		100						10-15': Gray to light brown GRAVEL, well-rounded, coarse, little sand, loose, dry.	10.0	
0.6										
0.7										
0.6										
1.4	MW6-9-27-22-15'			X	15					
0.7								15-23': SAA	15.0	
0.7									10/3/22 ▼	
1.0										
1.3										
2.4					20					
1.4		100							20.0	
0.5	MW6-9-27-22-21'			X						
0.6										
0.3								23-24': Gray, coarse, rounded GRAVEL/COBBLES, little sand, dry, loose.		
0.8					25			24-25': Gray to lt brown, sandy GRAVEL, rounded, coarse, dry.		
								TD = 25'	25.0	
					30				30.0	

15' 1305

21' 1310

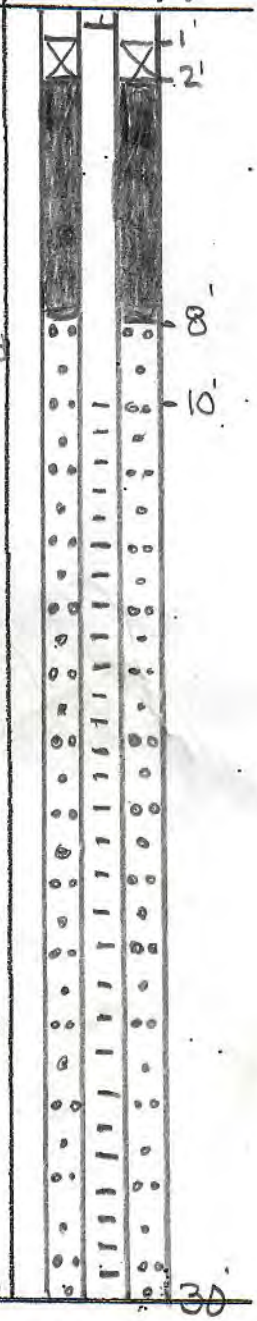


BORING/WELL CONSTRUCTION LOG

Project Number	E2023/0407
Project Name	Additional SI - May 2023
Location	1201 S. 1st Street, Yakima, WA 98901
Drilling Method	Terra Sonic
Sampling Method	Core Barrel / Sample Bag (Continuous)
Ground Elevation	
Top of Casing Elevation	
Logged by	Brent Bergeron, LHG
Remarks	
Boring/Well Number	MW-3A
Date Drilled	5/18/23
Casing Type/Diameter	6" OD
Screen Type/Slot	Schedule 40 PVC/0.010" PVC 2" dia
Gravel Pack Type	Silica Sand
Grout Type	Bentonite
Depth to Water/Date	19.00' btoc 6/13/23
Ground Water Elevation/Date	
Drilling Co.	Anderson Environmental Contracting (AEC)

PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL.)	U.S.C.S	Graphic Log	Lithologic Description	Contact Depth
1	NA	20			5			NO RECOVERY	5.0
0.5					10			8-10': Brown, coarse gravelly SAND, some silt, well-round loose, dry	10.0
0.5					15			10-20': Brown-gray, SAND & GRAVEL, coarse, well-rounded, loose, dry	15.0
0.3					20				20.0
0.2				X	25			20-30': Brown SAND, little coarse, well-rounded gravel, little silt, little clay, Wet to V. wet, loose	25.0
0.1					30				30.0
0				X					

Well Diagram MW3A



TD = 30'

20' 1445
30' 1450

BORING/WELL CONSTRUCTION LOG

Project Number	E2023/0407
Project Name	Additional SI - May 2023
Location	201 S. 1st Street, Yakima, WA 98901
Drilling Method	Terra Sonic
Sampling Method	Core Barrel / Sample Bag (Continuous)
Ground Elevation	
Top of Casing Elevation	
Logged by	Brent Bergeron, LHG
Remarks	
Boring/Well Number	MW-7
Date Drilled	5/19/23
Casing Type/Diameter	6" OD
Screen Type/Slot	Schedule 40 PVC / 0.010" PVC 2" dia
Gravel Pack Type	Silica Sand
Grout Type	Bentonite
Depth to Water/Date	19.17' btoc 6/13/23
Ground Water Elevation/Date	
Drilling Co.	Anderson Environmental Contracting (AEC)

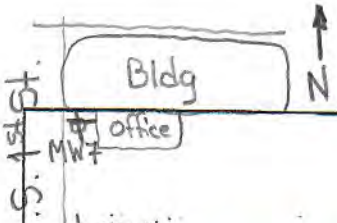
PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL.)	U.S.C.S	Graphic Log	Lithologic Description	Contact Depth
0.4	NA	100				ML		0-2": Asphalt 2"-2.5': Brown SILT, trace gravel, trace v. fine sand, firm, moist.	
0.1						GP		2.5-10': Gray, Sandy, coarse GRAVEL & COBBLES, well-rounded, little silt, dry, loose	
0.1					5				5.0
0									
0									
0									
0.1						GP			
0									
0									
0.4					10				10.0
0.4		100				GP		10-12': SAA	
0.3						SP/GP		12-20': Brown, SAND & GRAVEL, coarse, well-rounded, little cobbles, loose, wet @ 18'	
0					15				15.0
0									
0									
0						SP/GP			
0	MW7-5/19/23-18'			X					
0					20				20.0
0		100				SP/GP		20-21.5': SAA	
0								21.5-25': Gray-brown, sandy, coarse GRAVEL, little cobbles, saturated, loose.	
0						GP			
0					25				25.0
0	MW7-5/19/23-25'			X				TD=25'	
					30				30.0

6/13/23

Well Diagram: MW-7

1'
2
8'
10'
25'

0900 18'
0905 25'

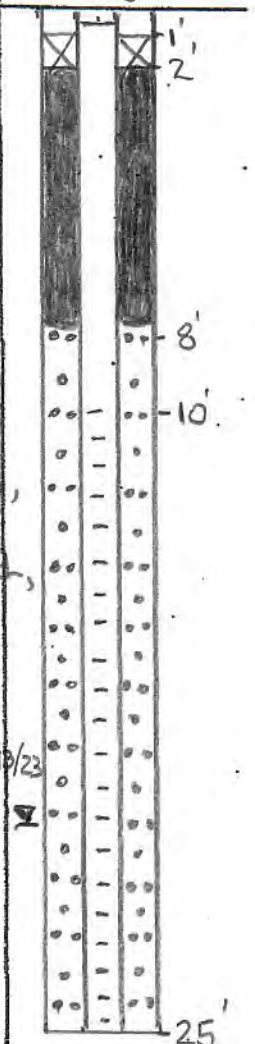


BORING/WELL CONSTRUCTION LOG

Project Number E2023/0407	Boring/Well Number MW 8
Project Name Additional SI - May 2023	Date Drilled 5/19/23
Location 1201 S. 1st Street, Yakima, WA 98901	Casing Type/Diameter 6" OD
Drilling Method Terra Sonic	Screen Type/Slot Schedule 40 PVC/0.010" PVC 2" dia
Sampling Method Core Barrel / Sample Bag (Continuous)	Gravel Pack Type Silica Sand
Ground Elevation	Grout Type Bentonite
Top of Casing Elevation	Depth to Water/Date 19.58 btoc 6/13/23
Logged by Brent Bergeron, LHG	Ground Water Elevation/Date
Remarks	Drilling Co. Anderson Environmental Contracting (AEC)

PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL.)	U.S.C.S	Graphic Log	Lithologic Description	Contact Depth
0.5	NA	80				ML		0-3": Asphalt	
0.3								3"-1': Brown SILT, loose, damp, trace gravel	
0.4						GP		1-2.5': Brown silty, coarse GRAVEL, well-rounded.	
0.4					5			2.5-10': Brown-gray, sandy, coarse GRAVEL, little cobbles, well-rounded, trace silt, loose, damp.	5.0
0.8									
0.3						GP			
0.3									
0.2					10				
0.1		100						10-13': Brown-gray, silty, coarse GRAVEL, well-rounded, little cobbles, little fine sand, loose, damp.	10.0
0.2						GP			
0.6								13-20': Brown-gray, sandy, coarse GRAVEL, well-rounded, little cobbles, little silt, damp, loose.	
0.3					15				15.0
0.4									
0.2									
0.2						GP			
0.5									
0.2	MW8-5/19/23-18'			X					6/13/23
0.2					20				& COBBLES 20.0 ▼
0.1		100				GP		20-22': Brown, silty, coarse GRAVEL, well-rounded, little fine sand, loose, moist.	
0.9									
0.2						SP		22-25': Brown, gravelly SAND, coarse, well-rounded, trace cobbles, trace silt, V. wet, loose.	
0.1					25				25.0
0.1	MW8-5/19/23-25'			X				TD = 25'	
					30				30.0

Well Diagram MW 8



18' 1115
25' 1120

BORING/WELL CONSTRUCTION LOG

Project Number	E2023/0407	Boring/Well Number	MW9
Project Name	Additional SI - May 2023	Date Drilled	5/18/23
Location	1201 S. 1st Street, Yakima, WA 98901	Casing Type/Diameter	6" OD
Drilling Method	Terra Sonic	Screen Type/Slot	Schedule 40 PVC/0.010" PVC 2" dia
Sampling Method	Core Barrel / Sample Bag (Continuous)	Gravel Pack Type	Silica Sand
Ground Elevation		Grout Type	Bentonite
Top of Casing Elevation		Depth to Water/Date	19.32' btoc 6/13/23
Logged by	Brent Bergeron, LHG	Ground Water Elevation/Date	
Remarks		Drilling Co.	Anderson Environmental Contracting (AEC)

PID (ppm)	Blow Counts	Recovery (%)	Sampling Method	Sample	Depth (ft. BGL)	U.S.C.S	Graphic Log	Lithologic Description	Contact Depth	Well Diagram
1	NA	0			5			NO RECOVERY	5.0	MW9
		50			10				10.0	
					15				15.0	
0.3								15-18': Gray-brown, sandy, coarse GRAVEL, well-rounded, loose, damp to moist.		
0.5										
0.3										
0.2	MW9-5/19/23-18'			X				18-20': Brown SAND & GRAVEL, coarse, well-rounded, loose., wet @ 18'		
0.2					20				20.0	
0.1		100						20-26': Gray, pulverized, silty, coarse GRAVEL, dry, loose		
0.2										
0.1										
0.1									6/13/23	
0					25				25.0	
0								26-27': Brown, medium SAND, little cobble, wet		
	MW9-5/19/23-27			X				TD = 27'		
					30				30.0	

18' 1315

27' 1320