



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

October 13, 2011

Mr. Skip Tarr
Tarr LLC
P.O. Box 12570
Portland, Oregon 97212

Re: Opinion on Proposed Cleanup of the following Site:

- **Site Name:** Tarr LLC Vancouver Cardlock
- **Site Address:** 7208 Northeast St. Johns Road, Vancouver, Washington 98665
- **Facility/Site No.:** 82645316
- **VCP Project No.:** SW1174

Dear Mr. Tarr:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your proposed independent cleanup of the Tarr LLC Vancouver Cardlock 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

Upon completion of the proposed cleanup, will further remedial action likely be necessary to clean up contamination at the Site?

NO. Ecology has determined that, upon completion of your proposed cleanup, no further remedial action will likely be 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:

- Total petroleum hydrocarbons (TPH) in the gasoline-range (TPH-G) and TPH in the diesel-range (TPH-D) into the Soil and Groundwater.
- Benzene, ethylbenzene, and total xylenes into the Soil and Groundwater.



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

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:

1. Ash Creek Associates, Inc., **RI/FS and Cleanup Action Plan, Tarr, LLC Vancouver Cardlock Site, Vancouver, Washington**, dated June 6, 2011.
2. Ash Creek Associates, Inc., **Phase II Environmental Site Assessment, 7208 NE St. Johns Road, Vancouver, Washington, 1821-00**, dated March 28, 2011.

Those documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

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, upon completion of your proposed cleanup, **no further remedial action** will likely be 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 and select a cleanup action. The Site is described above and in **Enclosure A**.

In June 2011, Ash Creek Associates, Inc. (Ash) submitted a Remedial

Investigation/Feasibility Study (RI/FS) and Cleanup Action Plan of the Site to Ecology for review and approval. The Site operates three underground storage tanks (USTs), a 3,000-gallon gasoline UST, a 5,000-gallon gasoline UST, and a 10,000-gallon diesel UST, and three aboveground storage tanks (ASTs) with capacities of 6,000 gallons for diesel fuel and 250 gallons each for two smaller ASTs used to store used and new oil.

In 2010, a Phase I Environmental Site Assessment (ESA) was completed for the Site. The assessment concluded there were no observable signs of contamination. The USTs were identified as Recognized Environmental Concerns (RECs) and concluded that there should be a follow on Phase II ESA. The 2010 ESA was not in the Ecology file and was not reviewed by Ecology. Personal communication with Ash confirmed that the previous consultant did consider the ASTs in the Phase I ESA and dismissed them as RECs based on the use of secondary containment and field observations.

In March 2011, Ash conducted a Phase II ESA of the UST locations and fuel dispenser areas (see Figure 2). Ash advanced eight exploratory borings using push probe technology. The borings were advanced to 20 feet below ground surface (bgs) and nine soil samples were collected from the eight borings at depths ranging from 3 to 14 feet bgs. Groundwater was observed to be between 10 and 15 feet bgs. The soil was analyzed for TPH using hydrocarbon identification analysis and only one sample analytical result indicated detections in all three hydrocarbon ranges (borings SB-5 at 3.0 feet bgs). Another other sample (SB-6 at 13.5 feet bgs) indicated TPH-G and TPH-D. These samples were further analyzed for quantitative levels of TPH-G and TPH-D and were found to be above the MTCA Method A Soil Cleanup Levels (CULs) for unrestricted land uses for TPH-G. SB-5 was also analyzed for polycyclic aromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs) (see Figure 4). Only naphthalene, 1,2,4-trimethylbenzene (1,2,4-TMB), and 1,3,5-trimethylbenzene (1,3,5-TMB) results were above their respective MTCA CULs or practical quantitation limit; however, per Ecology's *Draft Guidance for Remediation of Petroleum Contaminated Sites*, the toxicity of these compounds are already accounted for in the MTCA Method A CULs and need not be further evaluated.

Beginning in April 2011, Ash began remedial investigation activities by installing three monitoring wells on the Site and advanced an additional six push probe borings to further investigate the Site. The borings were advanced to between 10 and 20 feet bgs and the soil was evaluated for TPH-G, TPH-D, TPH in the oil-range (TPH-O), and lead; analysis indicated no constituents of concern (COCs) were above their respective CUL in any of the borings (see Figure 4).

The monitoring wells were installed to a maximum depth of 18 feet bgs. The monitoring wells were installed around the lone gasoline UST on the west side of the warehouse where soil analytical results indicated soil contamination (see Figure 4). The groundwater was analyzed for TPH-G, TPH-D, TPH-O, PAHs, VOCs, and total lead. Groundwater analytical results indicated TPH-G, TPH-D, benzene, ethylbenzene, and total xylenes were the only COCs above their respective MTCA Method A Groundwater CUL in monitoring well MW-1 (see Figure 5 and Table 3).

In June 2011, during the review of the remedial investigation report, Ecology requested additional groundwater data. Ash conducted another round of groundwater sampling and analyzed the groundwater for VOCs, ethylene dibromide (EDB) using EPA Method 8011, and total lead. In July 2011, Ash provided the requested information and the contaminants were either not detected or not detected above their respective MTCA CULs (see Table 3).

Ecology considers the Site soil petroleum contamination to be sufficiently delineated; however, Ecology thinks it would be beneficial to further characterize groundwater as part of your proposed cleanup (see Section 3).

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 RI/FS and Cleanup Action Plan had proposed MTCA Method B CULs for 1,2,4-TMB and 1,3,5-TMB; however, MTCA does not allow for the mixing of MTCA Method A and Method B CULs within the same media. If no Method A CUL has been established for a COC then the appropriate state or federal media *applicable or relevant and appropriate requirements* (ARAR) or practical quantitation limit should be used instead. If that option is not desirable or achievable then Method B CULs must be established and used for all COCs within that media.

The soil will be evaluated against the MTCA Method A Soil CULs for unrestricted land uses. The Site soil will be evaluated for TPH-G, TPH-D, TPH-O, benzene, toluene, ethylbenzene, and total xylenes (BTEX), and lead.

The Site groundwater will be evaluated against the MTCA Method A Groundwater CULs. The Site groundwater will be evaluated for TPH-G, TPH-D, TPH-O, BTEX, EDB (via EPA Method 8011), 1,2-dichloroethane (EDC), methyl tertiary-butyl ether (MTBE), and total lead (see Ecology comment number 1 in Section 3 for applicability).

Standard points of compliance have been established for the Site. The point of compliance for protection of groundwater is established in the soil throughout the Site. For soil cleanup levels based on human exposure via direct contact or other exposure pathways where contact with the soil is required to complete the pathway, the point of compliance is established in the soil throughout the Site from the ground surface to 15 feet bgs. In addition, the point of compliance for the groundwater is established throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth that could potentially be affected by the Site.

3. Selection of cleanup action.

Ecology has determined the cleanup action you proposed for the Site meets the substantive requirements of MTCA.

As part of the RI/FS, potential cleanup alternatives and a disproportionate cost analysis of those alternatives were provided to Ecology for review. The FS proposed five alternatives:

1. Soil vapor extraction (SVE) and groundwater treatment.
2. Excavation of the soil at the dispenser and 3,000-gallon UST and in-situ enhanced bioremediation for groundwater around the UST.
3. Excavation of the soil at the dispenser and 3,000-gallon UST and monitored natural attenuation for groundwater around the UST.
4. Excavation of the soil at the dispenser and 3,000-gallon UST, capping the soil around the fuel dispenser, and monitored natural attenuation for groundwater around the UST.
5. SVE for soil and groundwater treatment at the 3,000-gallon UST and capping the fuel dispenser area.

The alternatives were evaluated for protectiveness, permanence, cost, long-term effectiveness, short-term risks, implementability, and public concerns. Upon evaluation, the recommended alternative was alternative number 1: SVE combined with excavation at the dispenser and groundwater treatment (see Figure 8).

Based on a review of the available information, Ecology has the following comments:

1. Since the source of the SB-5 soil contamination appears to be a separate source from the MW-1 soil and groundwater contamination, Ecology recommends that the groundwater below SB-5 be evaluated for TPH-G, TPH-D, TPH-O, PAHs, BTEX, EDB, EDC, MTBE, and total lead. If contamination is identified, then this area will need to be incorporated into your cleanup action, and the installation of additional permanent wells to monitor compliance may be needed.
2. Since TPH-G soil concentrations were 10,700 milligrams per kilogram at MW-1, Ecology recommends a vapor intrusion preliminary assessment be completed for impacts to indoor air at the Site per WAC 173-340-740(3)(C)(I). Also, benzene groundwater concentrations at MW-1 of 940 micrograms per liter ($\mu\text{g/L}$) exceeded the MTCA Method B groundwater screening level of 2.4 $\mu\text{g/L}$ identified in Table B-1.

in Ecology's *Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action*. If a screening level is exceeded, the guidance recommends a preliminary assessment of the soil vapor intrusion (VI) pathway be conducted where indoor air may reasonably be expected to be affected. Since warehouse and office spaces are within 50 feet of the contamination source, Ecology considers hydrocarbon contamination a reasonable and potential impact to the VI pathway and indoor air. The soil vapor intrusion guidance can be found at: <http://www.ecy.wa.gov/programs/tcp/policies/VaporIntrusion/vig.html>.

3. Please note that Ecology requires at least four consecutive quarters of clean groundwater monitoring analytical results to demonstrate compliance with the MTCA cleanup regulations. The reason for this is to determine any seasonal variations in the contaminant concentrations, so that Ecology can determine whether the implemented remedy is permanent.
4. Once the consultant has determined the SVE system to have remediated the Site media to comply with the MTCA cleanup regulations, Ecology will require that confirmation soil sample results demonstrate the affected media concentrations are below the applicable MTCA CULs before a no further action opinion will be provided.
5. According to the Clark County Geographic Information System (found at: http://gis.clark.wa.gov/imfnol/imf.jsp?site=pub_mapsonline), the Site is located within a Critical Aquifer Recharge Area and may be subject to minimum buffer standards, please check with the county for any required permits.
6. In accordance with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840 (Data Submittal Requirements), all data generated for Independent Remedial Actions shall be submitted simultaneously in both a written and electronic format. For additional information regarding electronic format requirements, see the website <http://www.ecy.wa.gov/eim>. Be advised that according to the policy, any reports containing sampling data that are submitted for Ecology review are considered incomplete until the electronic data has been entered. Please ensure that data generated during on-site activities is submitted pursuant to this policy. **Data must be submitted to Ecology in this format for Ecology to issue a No Further Action determination.** Please be sure to submit all soil and groundwater data collected to date, as well as any future data, in this format. Data collected prior to August 2005 (effective date of this policy) is not required to be submitted; however, you are encouraged to do so if it is available. Be advised that Ecology requires up to two weeks to process the data once it is received.

Ecology believes the above recommended actions can be completed before or simultaneously with the selected remedial alternative, and based on the findings; the alternative can be modified if needed.

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 proposed will be substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. Opinion is limited to proposed cleanup.

This letter does not provide an opinion on whether further remedial action will actually be necessary at the Site upon completion of your proposed cleanup. To obtain such an opinion, you must submit a report to Ecology upon completion of your cleanup and request an opinion under the VCP.

4. 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).

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Contact Information

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). As you conduct your cleanup, please do not hesitate to request additional services. 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 (360) 407-7404 or e-mail at erad461@ecy.wa.gov.

Sincerely,



Eugene Radcliff, L.G.
VCP Site Manager
SWRO Toxics Cleanup Program

GER/ksc:Tarr Inc Proposed Site Cleanup Likely NFA

Enclosures (6):

A – Description and Diagram of the Site	
Figure 1	Site Location Map
Figure 2	Site Plan and Phase II ESA Summary
Figure 4	Soil Concentrations
Figure 5	Groundwater Concentrations
Figure 8	Remedial Action Areas
Table 3	Groundwater Analytical Results: TPH, VOCs, and Lead

By certified mail: (7009 3410 0000 1272 3816)

cc: Mr. John Foxwell, Ash Creek Associates, Inc.
Scott Rose – Ecology
Paul Turner – Ecology
Dolores Mitchell – Ecology (without enclosures)

Enclosure A

Description and Diagrams of the Site

Enclosure A
Site Description, Figures and Tables

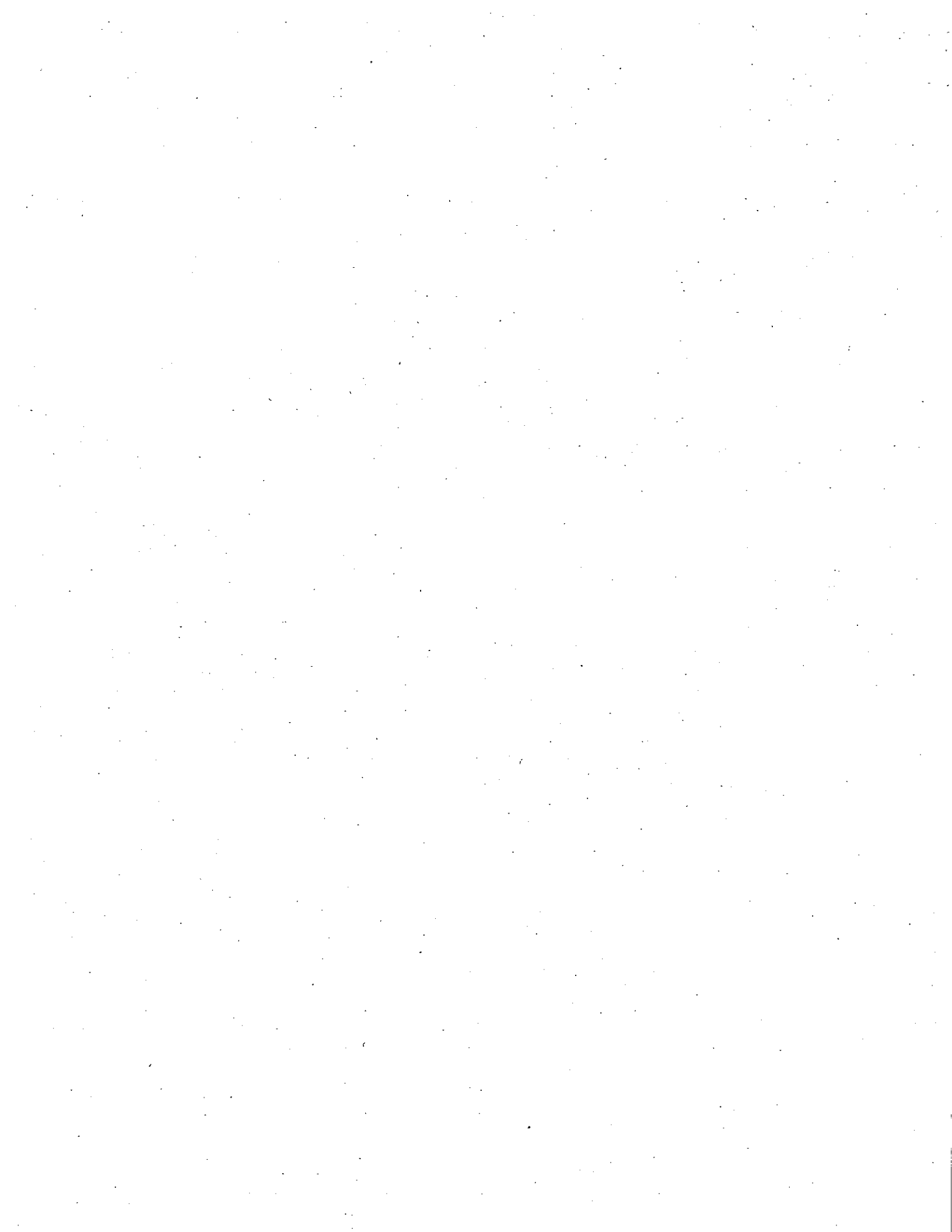
Media of Concern: Soil, Soil Vapor, and Groundwater

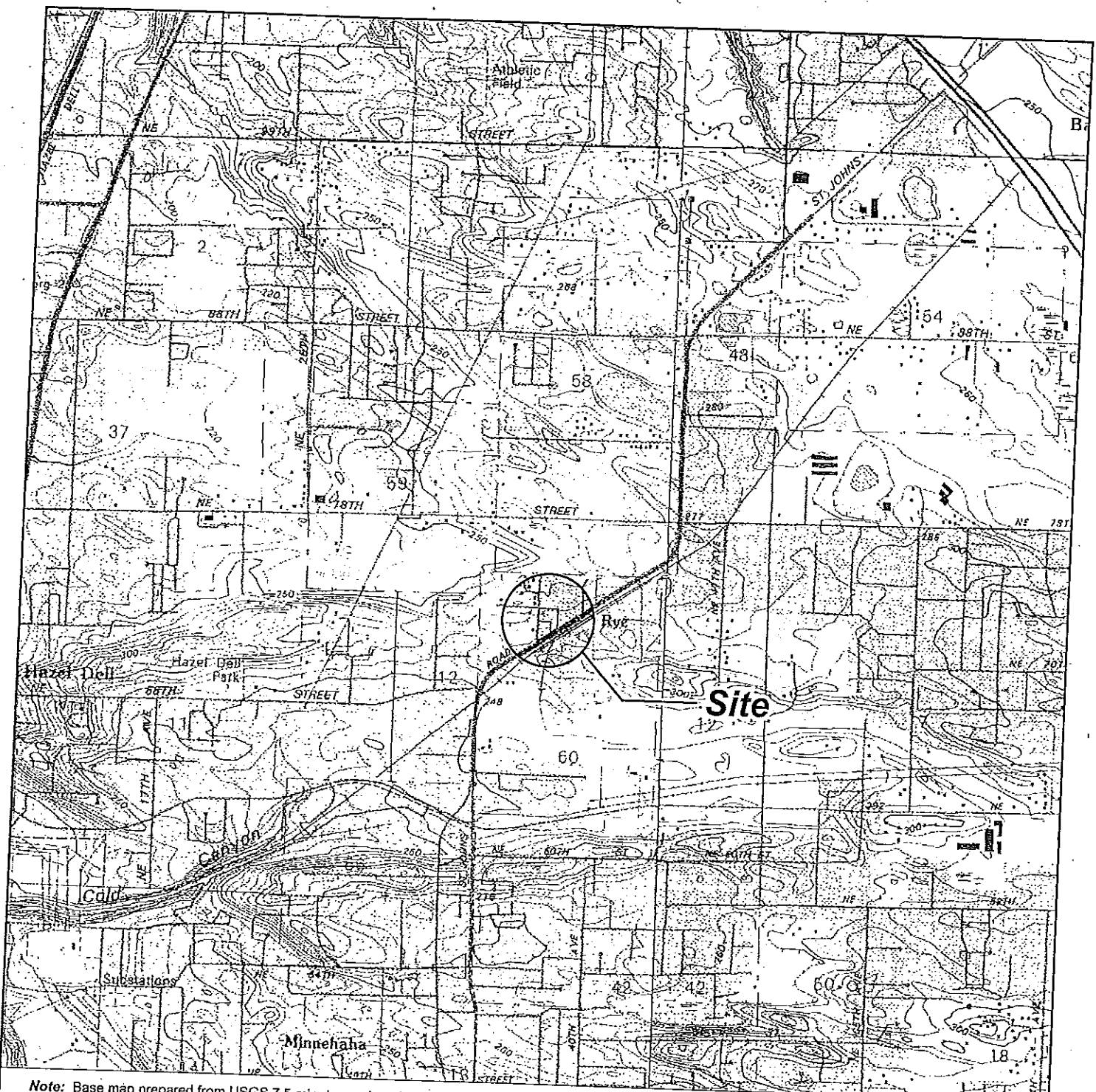
The Tarr LLC Vancouver Cardlock (Site) is located at 7208 NE St. Johns Road, Vancouver, Clark County, Washington (see Figure 1). The Cardlock operation is comprised of two parcels; however, only one parcel is affected by the contamination. The Site and surrounding parcels are zoned light industrial with NE St. Johns Road bordering the south margin of the Site; commercial parcels border the Site on the north and east; and commercial and residential parcels as well as NE 37th Avenue border the Site on the west. A residential parcel is down-gradient approximately 240 feet west-northwest of the identified soil and groundwater contamination source areas (see Figure 8).

Approximately two-thirds of the 1.54-acre Site is covered by asphalt pavement, with the affected area underlying the pavement in the middle of the parcel; the area down-gradient of the source is covered by gravel. The Clark County Assessor's office notes the Site as being comprised of two separate parcels with the affected parcel having an assigned tax parcel number of 149264000.

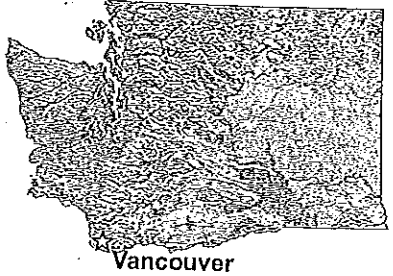
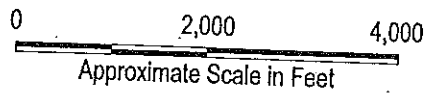
The Site soil and groundwater has been impacted by a discharge of gasoline into the surrounding soil. The Site is approximately 260 feet above sea level. Site boring logs indicate the Site is underlain by layers of silt, sand with silt, silt with clay and sand, and silty sand down to 20 feet below ground surface (bgs). The Clark County Geographic Information System indicates both hydric and non-hydric soils are present on the parcel. The surface soil in the area is underlain by Quaternary alluvium and then by Quaternary/Tertiary conglomerate.

The Site is located within a Critical Aquifer Recharge Area (CARA) and may be subject to minimum buffer standards. A Category II CARA is listed as a primary critical aquifer recharge area. The Site lies within the Lower Burnt Bridge Creek Sub Watershed, which is part of the Burnt Bridge Creek Watershed. The parcel is designated as a low risk for flooding, a low risk during an earthquake, and a low risk for liquefaction. County records also indicate the Site is within an area with a high archeological probability. Analytical data indicates soil contamination is above 15 feet bgs. Area groundwater well logs and on-Site data indicate the static water level for the area ranges from approximately 7 feet to 10 feet bgs.





Note: Base map prepared from USGS 7.5-minute quadrangle of Vancouver, WA-OR, dated 1990 as provided by MSR Maps.com.



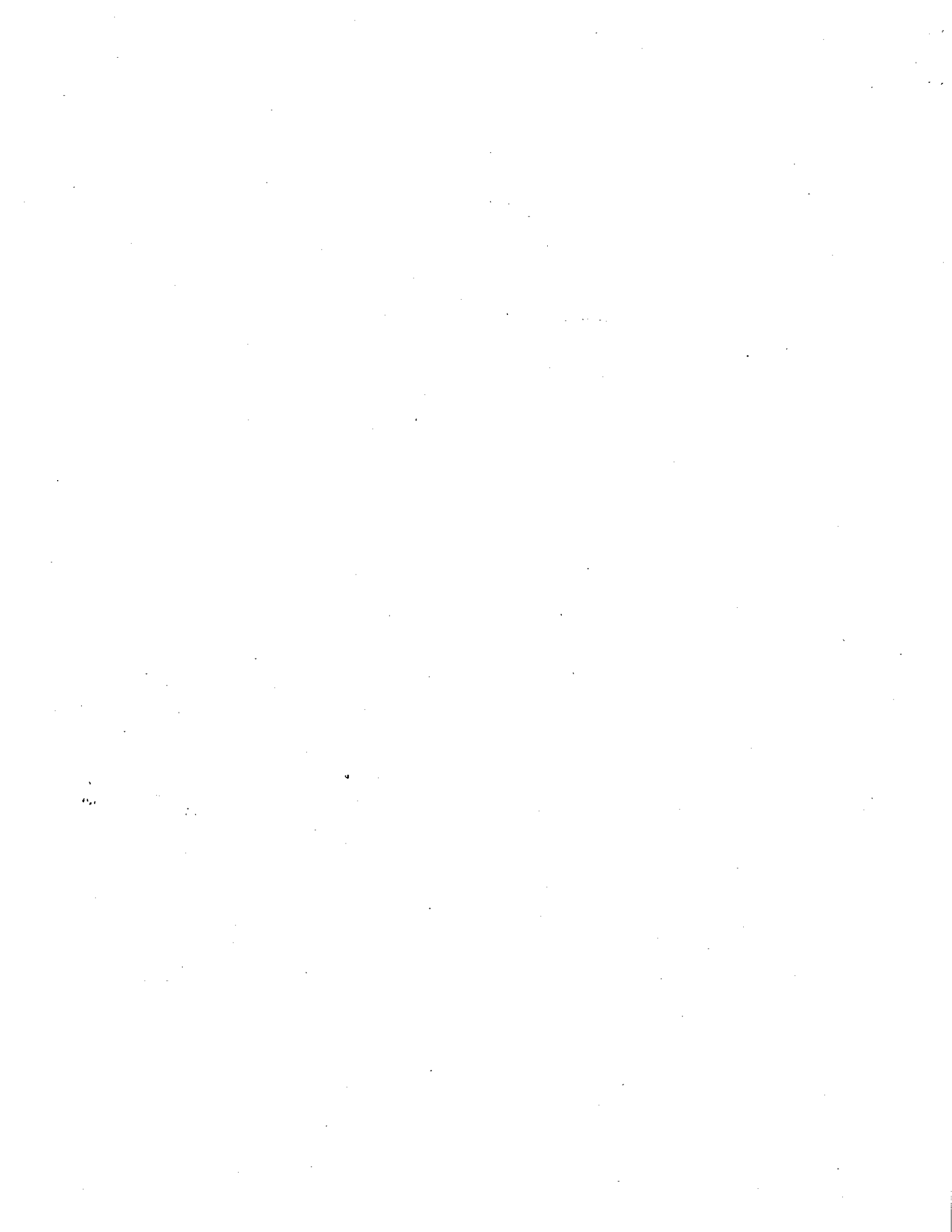
Vancouver

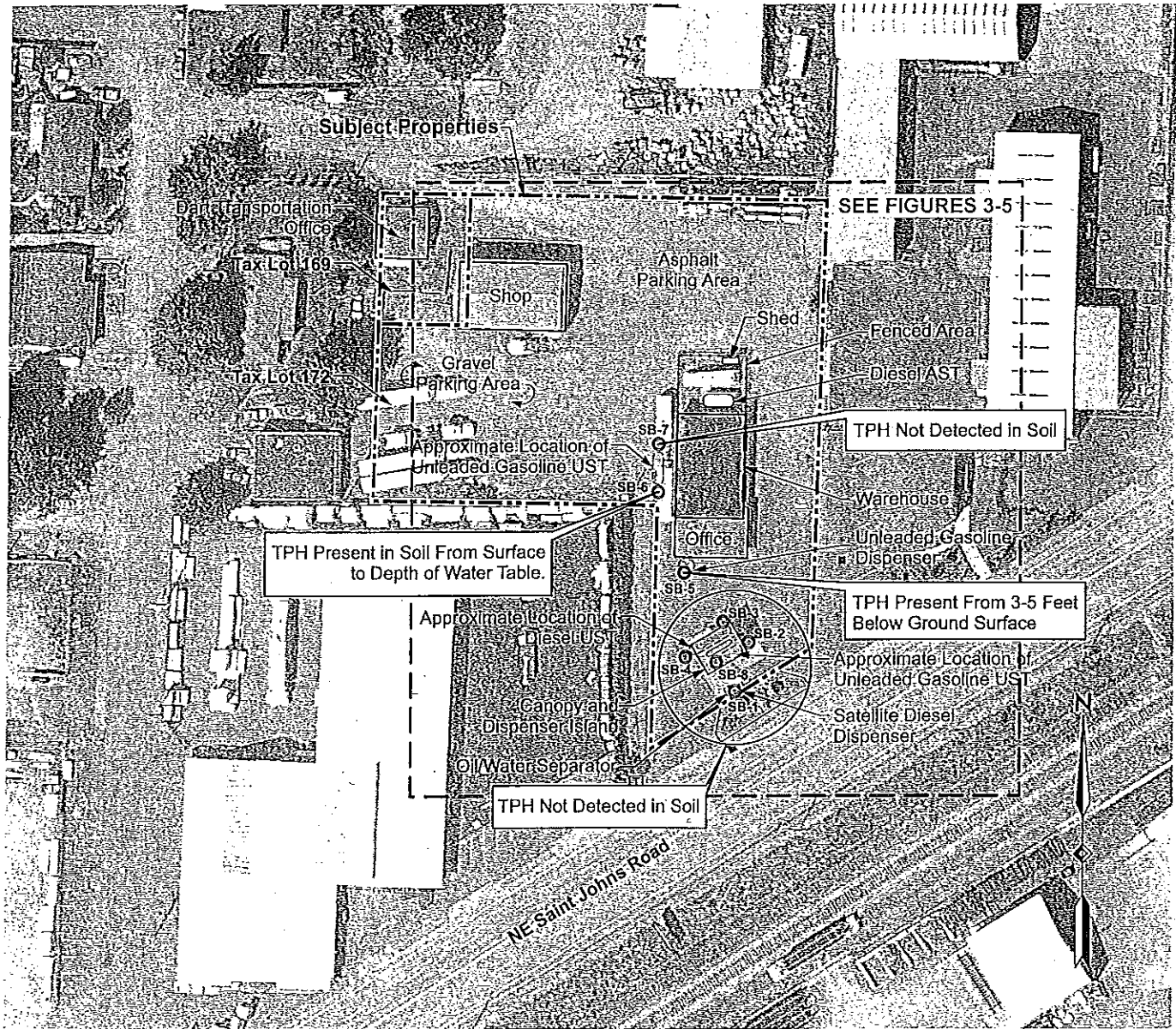


Site Location Map

Tarr, LLC Vancouver Cardlock
7208 NE St. Johns Road
Vancouver, Washington

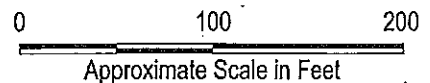
Ash Creek Associates, Inc. <small>Environmental and Geotechnical Consultants</small>	Project Number 1821-00	Figure <div style="text-align: center; font-size: 2em;">1</div>
May 2011		





Legend:

- SB-1 Soil Boring Location
- Approximate Area
- Transformer Location
- Catch Basin Location



- Notes:**
- 1) Base map prepared from 2011 - Google Imagery and site reconnaissance by Ash Creek personnel.
 - 2) Site feature locations and dimensions are approximate.

Site Plan and Phase II ESA Summary

Tarr, LLC Vancouver Cardlock
 7208 NE St. Johns Road
 Vancouver, Washington

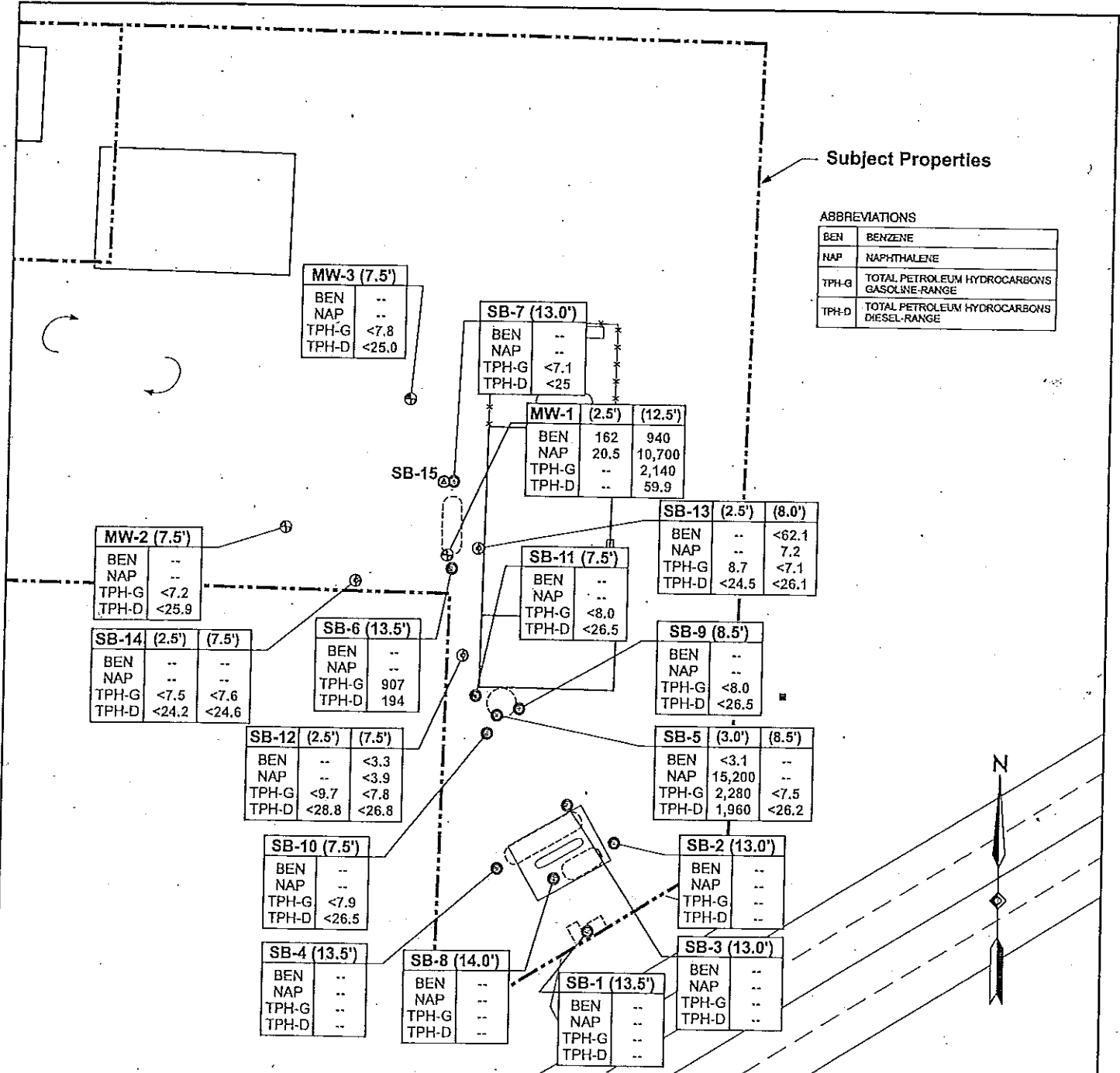


Project Number	1821-00	Figure
May 2011		2

Subject Properties

ABBREVIATIONS

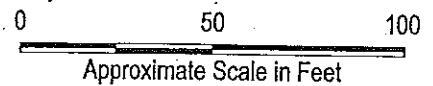
BEN	BENZENE
NAP	NAPHTHALENE
TPH-G	TOTAL PETROLEUM HYDROCARBONS GASOLINE-RANGE
TPH-D	TOTAL PETROLEUM HYDROCARBONS DIESEL-RANGE



Legend:

- MW-1 ⊕ Monitoring Well Location
- SB-15 ⊙ Groundwater Exploration
- SB-12 ⊙ Soil and Groundwater Exploration
- SB-1 ⊙ Soil Boring Location (Ash Creek 2011)
- Approximate Area
- ⊞ Transformer Location
- Catch Basin Location

MW-1 (2.5')		Sampling Identification and (Depth in Feet)
BEN	162	Concentration in µg/kg
NAP	20.5	
TPH-G	--	Analyte Sampled
TPH-D	--	(- = Not Analyzed)



Notes: 1) Base map prepared from 2011 - Google Imagery and site reconnaissance by Ash Creek personnel.
2) Site feature locations and dimensions are approximate.

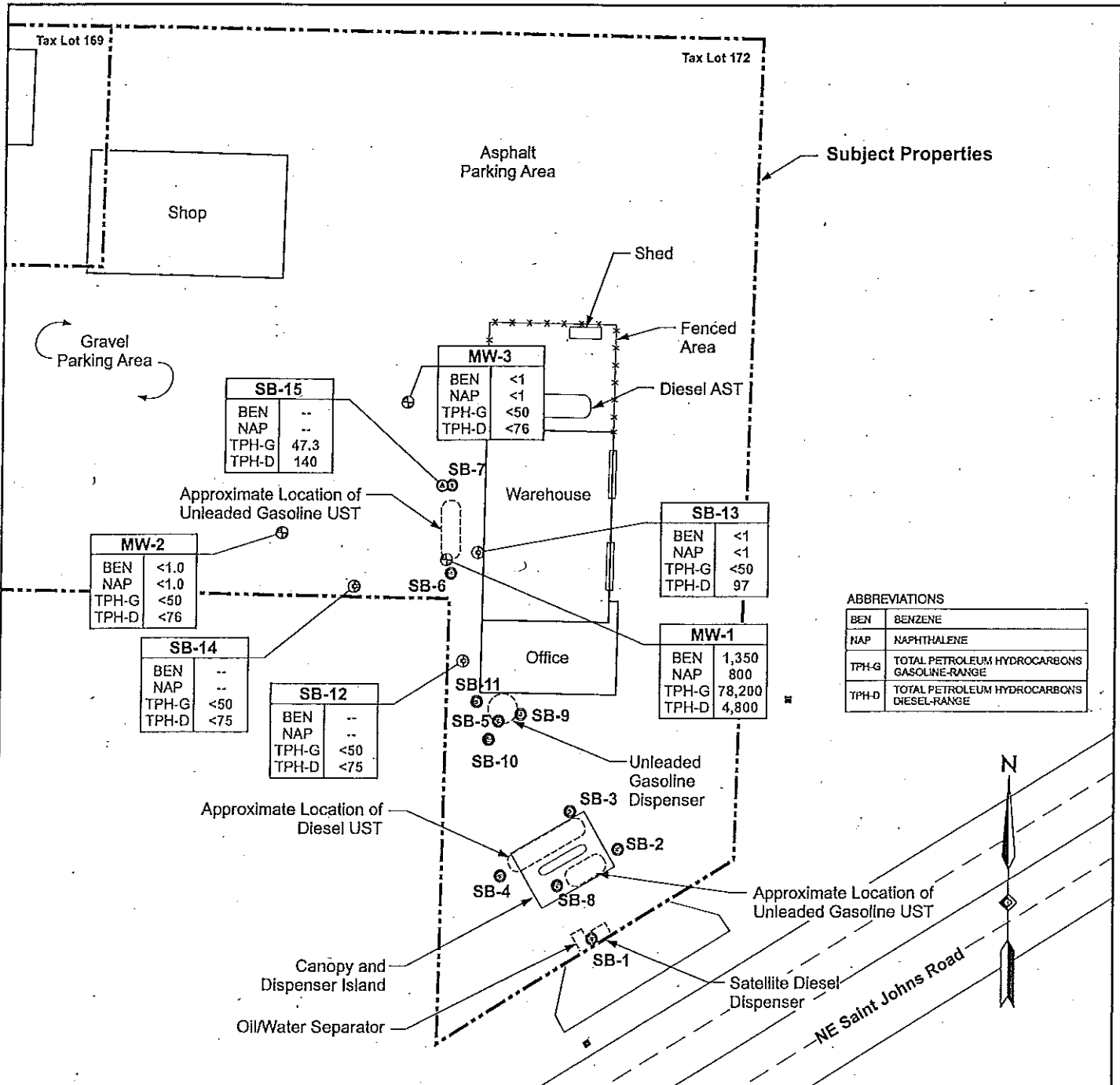
Soil Concentrations

Tarr, LLC Vancouver Cardlock
7208 NE St. Johns Road
Vancouver, Washington

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1821-00
May 2011	

Figure
4

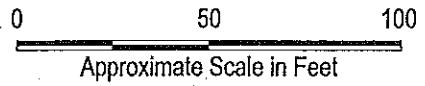


Legend:

- MW-1 ⊕ Monitoring Well Location
- SB-15 ⊙ Groundwater Exploration
- SB-12 ⊕ Soil and Groundwater Exploration
- SB-1 ⊕ Soil Boring Location (Ash Creek 2011)

- ⬭ Approximate Area
- ⊠ Transformer Location
- Catch Basin Location

MW-1		Sampling Identification
BEN	1,350	Concentration in µg/L
NAP	800	
TPH-G	78,200	
TPH-D	4,800	
		Analyte Sampled (-- = Not Analyzed)

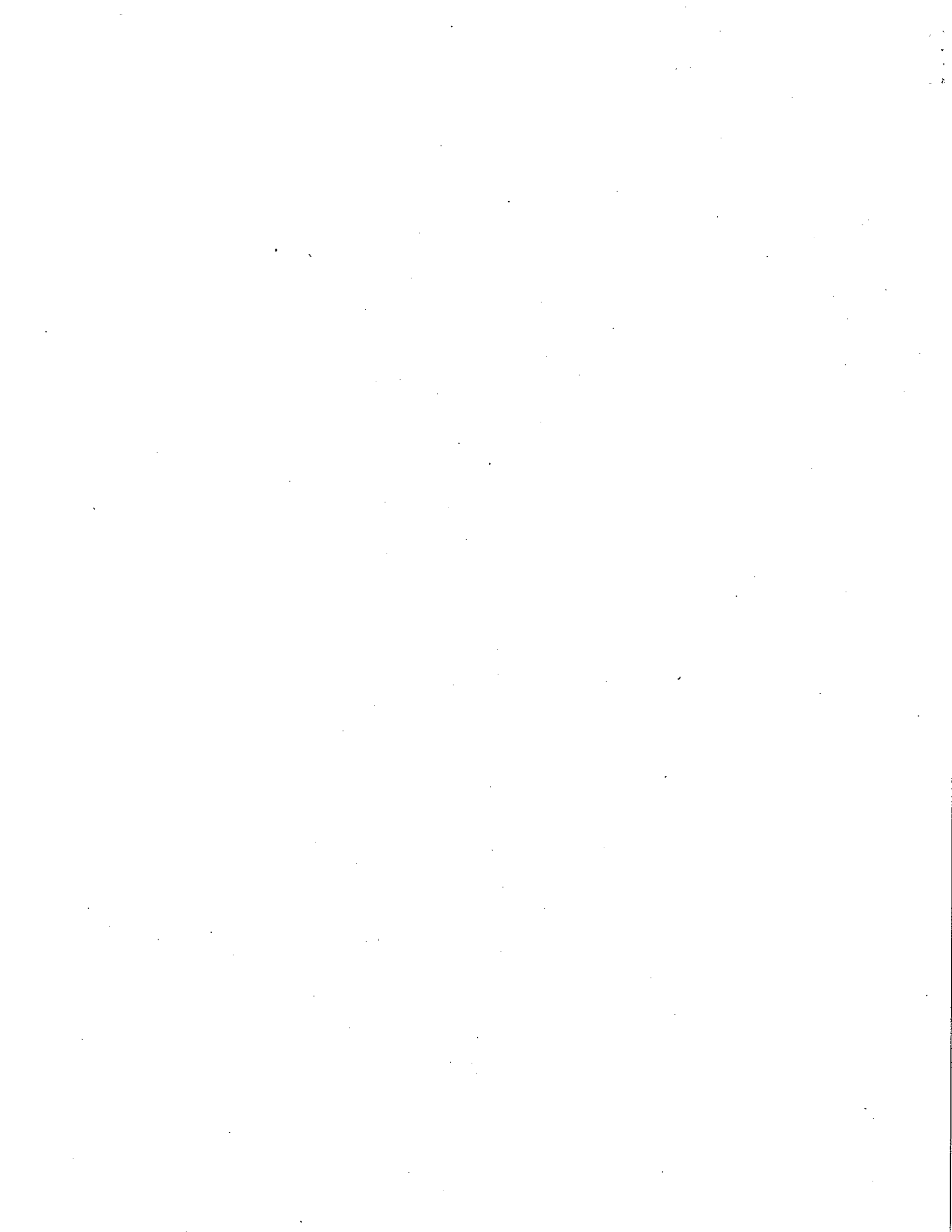


Notes: 1) Base map prepared from 2011 - Google Imagery and site reconnaissance by Ash Creek personnel.
 2) Site feature locations and dimensions are approximate.

Groundwater Concentrations

Tarr, LLC Vancouver Cardlock
 7208 NE St. Johns Road
 Vancouver, Washington

Ash Creek Associates, Inc. <small>Environmental and Geotechnical Consultants</small>	Project Number	1821-00	Figure 5
	May 2011		





Legend:

- MW-1 ⊕ Monitoring Well Location
- SB-15 ⊙ Groundwater Exploration
- SB-12 ⊙ Soil and Groundwater Exploration
- SB-1 ⊙ Soil Boring Location (Ash Creek 2011)
- ⊖ Approximate Area
- ⊞ Transformer Location
- Catch Basin Location

Notes: 1) Base map prepared from 2011 - Google Imagery and site reconnaissance by Ash Creek personnel.
 2) Site feature locations and dimensions are approximate.

Remedial Action Areas

Tarr, LLC Vancouver Cardlock
 7208 NE St. Johns Road
 Vancouver, Washington

