PRELIMINARY REMEDIAL INVESTIGATION AND FEASIBILITY STUDY

NORTH CASCADE FORD PROPERTY
SEDRO-WOOLLEY, WASHINGTON

Prepared for
VSF PROPERTIES, LLC
December 9, 2015
Project No. 0747.01.05

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ACRONYMS AND ABBREVIATIONS

AOC	area of concern
ARI	Analytical Resources, Inc.
AST	aboveground storage tank
AT	Eurofins Air Toxics, Inc.
bgs	below ground surface
BNSF	Burlington Northern Santa Fe Railway Company
City	City of Sedro-Woolley, Washington
COC	chemical of concern
COI	chemical of interest
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CSM	conceptual site model
CUL	cleanup level
CVOC	chlorinated volatile organic compound
Ecology	Washington State Department of Ecology
EPH	extractable petroleum hydrocarbons
ESA	environmental site assessment
FSDS	field sampling data sheet
GCW	groundwater circulating well
heavy oils	diesel- and lube-oil-range (i.e., motor-oil-range) TPH
IHS	indicator hazardous substance
ISCO	in situ chemical oxidation
ISGS	in situ geochemical stabilization
MFA	Maul Foster & Alongi, Inc.
mg/kg	milligrams per kilogram
MNA	monitored natural attenuation
MTCA	Model Toxics Control Act
NAPL	Non-aqueous phase liquid
NFA	No Further Action
NPV	net present value
ORC-A	Oxygen Release Compound Advanced®
ORP	oxygen reduction potential
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PID	photoionization detector
POC	point of compliance
ppm	parts per million
Property	North Cascade Ford property at 116 West Ferry Street, Sedro-Woolley, Washington
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
RI/FS	remedial investigation and feasibility study
Sanborn	Sanborn fire insurance map
SIM	selective ion monitoring

Site	North Cascade Ford Ecology cleanup site
SL	screening level
SVOC	semivolatile organic compound
TEE	terrestrial ecological evaluation
TOC	total organic carbon
TPH	total petroleum hydrocarbons
ug/L	micrograms per liter
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VCP	voluntary cleanup program
VOC	volatile organic compound
VPH	volatile petroleum hydrocarbons
VSF	VSF Properties, LLC
WAC	Washington Administrative Code
Whatcom Environmental	Whatcom Environmental Services

1 INTRODUCTION

On behalf of VSF Properties, LLC (VSF), Maul Foster & Alongi, Inc. (MFA) has prepared this preliminary remedial investigation and feasibility study (RI/FS) report for the North Cascade Ford property at 116 West Ferry Street in Sedro-Woolley, Washington (the Property) (see Figure 1-1). This RI/FS will be submitted to the Washington State Department of Ecology (Ecology) for review, along with a Voluntary Cleanup Program (VCP) application and a data gap investigation work plan, in accordance with Ecology's request.

The Property and an adjacent property owned by the Burlington Northern Santa Fe Railway Company (BNSF) are included in the North Cascade Ford Ecology cleanup site (the Site) (facility site identification number 58313566, cleanup site identification number 12075).

1.1 BNSF Property Access Negotiations and Restrictions

Although the Site includes portions of the BNSF property (see Figure 1-2), environmental investigation work conducted in support of this preliminary RI/FS did not include areas of the BNSF property, with one exception (see Section 4). MFA submitted multiple requests for access to the BNSF property for environmental characterization and cleanup activities, and BNSF has agreed to permit access to its property under liability terms to which MFA can agree; therefore, MFA is coordinating execution of an environmental access agreement with BNSF for environmental investigation activities on its property. Investigation on the BNSF property will be conducted as part of a data gap investigation that will include other areas of the Site.

The access agreement negotiated with BNSF allows for sampling and analysis of only those chemicals of concern (COCs) that were detected above preliminary cleanup levels (CULs) on the Property. The nature and extent of COCs known to exceed preliminary CULs on only the BNSF property portion of the Site have not yet been characterized, and sampling and analysis for those COCs is not allowed under the work plan approved by BNSF. Therefore, following completion of the data gap investigation, the nature and extent of contamination originating on the Property may be adequately characterized, but contamination originating on the BNSF property, and hence the entire "Site," may not be adequately characterized. Based on this limitation, this preliminary RI/FS has been conducted in support of pursuing property-specific No Further Action (NFA) determinations under Ecology's VCP for each parcel included in the Property.

Although BNSF has not given MFA access to conduct a full site characterization on its property, MFA anticipates that BNSF will allow MFA access to its property for targeted cleanup activities following completion of the proposed data gap investigation; therefore, this preliminary RI/FS includes cleanup options that address known and suspected areas of contamination on the BNSF property portion of the Site, as well as areas of contamination located on the Property (see Section 11). These cleanup options will be reviewed following completion of the data gap investigation.

At VSF's request, MFA will continue to pursue opportunities to collect the data needed to support a full characterization of the Site (e.g., during future supplemental data gap investigation or remedial activities, as permitted by BNSF) so that a full "Site NFA" may be pursued in the future, but given the current sampling and analysis constraints on the BNSF property, VSF anticipates pursuing "property-specific NFA" determinations for each parcel of the Property.

1.2 Regulatory Framework and Ecology Interaction

Under a previous contract (MFA project number 0747.01.04), MFA prepared a VCP application and a historical data technical memorandum for Ecology review. During a meeting between MFA and Ecology at the Property on June 18, 2015, Ecology indicated that they would not approve the VCP application and requested that MFA prepare a preliminary RI/FS report and data gap investigation work plan for their review, and then resubmit the VCP application with those documents and a request for a "property-specific NFA likely" opinion. MFA prepared a data gap investigation work plan for Ecology review concurrent with this preliminary RI/FS report.

The RI/FS conclusions will be used to support partial cleanup of the Site, with the goal of obtaining property-specific NFA determinations under Ecology's VCP for each parcel included in the Property. This preliminary RI/FS was conducted consistent with guidance put forth in the Model Toxics Control Act (MTCA) (Washington Administrative Code [WAC] 173-340) and the site investigation work plans (MFA, 2012a,b,c; 2014).

1.3 Remedial Investigation and Feasibility Study Objectives

MFA prepared this preliminary RI/FS report to synthesize the findings of previously completed environmental assessment activities, identify data gaps in its current understanding of the nature and extent of contamination at the Site, and identify preliminary remedial options. Ecology may use this preliminary RI/FS report to increase its understanding of the Site in order to provide an opinion on MFA's data gap investigation work plan, to be submitted for Ecology review concurrent with this preliminary RI/FS report.

Specific RI/FS objectives included the following:

- Identify features of concern that potentially contributed to environmental contamination at the Property and evaluate the presence or absence of contamination associated with those features.
- Develop a preliminary conceptual site model (CSM) and data quality objectives for characterization of environmental impacts on the Property.
- Characterize the nature and extent of hazardous substances present in environmental media at the Property at concentrations above MTCA CULs.
- Evaluate potential exposure pathways and associated health risks to current and reasonably likely future human and ecological receptors on the Site from chemical impacts originating on the Property.
- Develop preliminary remedial options to partially address confirmed areas of contamination at the Site.

2 BACKGROUND

Property background information was obtained from Phase I environmental site assessments (ESAs) conducted by GeoEngineers, Inc. and Whatcom Environmental Services (Whatcom Environmental), included in Appendix A. MFA also obtained background information through review of additional historical records, as discussed in Appendix B.

2.1 Property Description

The physical address for the Property is 116 West Ferry Street in Sedro-Woolley, Washington (see Figure 1-1). The Property comprises nine tax parcels and is bisected by West Ferry Street (see Figure 1-2); two of the parcels share the same parcel identification number (P109239), but are separate parcels that are divided by the West Ferry Street right-of-way. The Property is bordered by the BNSF rail line, Eastern Avenue, and commercial properties to the east. The parcels north of West Ferry Street are bordered by a rail line and an industrial property to the north, and a gasoline station and automobile parts store to the west. The parcels south of West Ferry Street are bordered by Rita Street to the west, Woodworth Street to the south, and an electrical substation and residential properties to the west and south. The Property is zoned for retail trade (automotive, marine craft, aircraft, and accessories) and is bordered by single- and multifamily housing, retail, and industrial land uses.

The Property is located in section 24 of township 35 north and range 4 east of the Willamette Meridian. The Property parcels cover approximately 3.5 acres.

An automobile sales and service building ("auto repair shop") is located on the northern half of the Property and a small loan services building is located on the southern half of the Property.

2.2 Property History

Historical Sanborn fire insurance maps ("Sanborns") and aerial photographs associated with the Property were reviewed as part of the Phase I ESAs (see Appendix A) and MFA's historical records review (see Appendix B). The Sanborns, from as early as 1903, identify a variety of land-use activities on the Property. Former activities include residential use, a gasoline station, a hospital, a feed mill and storage facility, a hotel, railroad depots, a veterinary office, a fuel and transfer station, an electric plant, and an automobile dealership.

The Sanborns indicate that a building used for battery servicing and tire vulcanizing that also contained "gas and oils" was located on the southern portion of parcel number P77410 from 1925 to 1953 (see Figure 1-2). This historical feature is referred to herein as "the former gasoline station," consistent with references to this same feature in previous reports (see Appendix A); however, that terminology is somewhat of a misnomer since the presence of gas and oils does not necessarily indicate that a gasoline station was present, and no information has been located that indicates that a gasoline station formerly operated at that location. The Whatcom Environmental Phase I ESA indicates that, based on review of aerial photographs, a gasoline station may have been present on the Property until as late as the 1980s (see Appendix A); however, the previous owners (Dan and Vern Sims of VSF) worked at the Property since the mid-1960s, prior to Vern Sims's 1981 purchase of a portion of the Property, and have no recollection of a gasoline station being located in that area of the Property (Sims, 2013).

Railroad depots, with associated coal-storage sheds (former coal shed numbers 1 to 3; see Figure 1-2), were located on the two parcels numbered P109239 from approximately the early 1900s to the 1950s.

The 1907 Sanborn identifies an electric plant, powered by steam and fuel oil, located on the northern portion of parcel number P77451, which was replaced by a woodshed and wood yard in the 1920s. The wood yard was replaced by the original automobile dealership in the 1950s, which was expanded to its current size in the 1970s. From 1979 through the 1990s, the remaining Property parcels were converted to parking areas supporting the automobile dealership. The loan services building located on parcel number P77493 was constructed in 2007.

2.3 Features of Environmental Concern

The Phase I ESAs (see Appendix A) identified a number of recognized environmental conditions (RECs) at the Property. Additional features identified in the reports were not categorized as RECs, but MFA considered them potential sources of environmental impacts (MFA, 2012a). Collectively, these "features of environmental concern" were investigated as part of this preliminary RI and are shown in Figure 1-2.

The following features of environmental concern were identified at the Property:

- **Former steam- and fuel-powered electric plant**—an electric plant powered by steam and fuel, formerly located at the north end of the Property, in the current auto repair shop location, during the early 1900s.
- **Active 500-gallon waste-oil aboveground storage tank (AST)**—an existing 500-gallon waste-oil AST located at the north end of the automobile repair shop; during the Phase I ESA, no secondary containment or stains on the concrete flooring beneath the AST and on the concrete floor between the AST and the gravel driveway to the north of the building (on the adjacent BNSF property) were observed; puddles with an oily sheen were observed on the adjacent BNSF property.
- **Waste-oil spill**—Ecology's Environmental Report Tracking System database indicates that waste oil from drums formerly stored on the BNSF right-of-way property was spilled on the ground surface; during the Phase I ESA, surface staining and puddles with an oily sheen were observed in this area.
- **Former 10,000-gallon oil AST**—a 10,000-gallon AST, containing an unknown type of oil; formerly located at the north end of the Property. This AST may have been associated with the electric plant in operation during the early 1900s.

- **Former gasoline station**—a building formerly located on the west end of the Property from the 1920s to at least the 1950s, used for battery servicing, tire vulcanizing, and gas and oil storage.
- **Former coal-storage sheds**—historically, coal was stored in three coal sheds (former coal shed numbers 1 to 3) formerly located on the east end of the Property; these were associated with the former train depots.
- **Underground hydraulic hoists**—four hoists (three active and one abandoned) located in the main service bay on the west side of the auto repair shop; no leaks have been reported. Three underground hoists may also have been located in the southeastern section of the service bay and one may have leaked hydraulic fluid (Straathoff, 2012).
- **Former automobile shop and oil house**—a former automobile shop and oil house were located in the central area of the Property, within the footprint of the existing auto repair shop, before the dealership was expanded to its current size in the 1950s.
- **Former gasoline and heating oil underground storage tanks (USTs)**—a 100- to 200-gallon gasoline UST and a 200-gallon heating-oil UST located southeast of the auto repair shop were reportedly backfilled and abandoned in place.
- **Former 500-gallon waste-oil AST**—a former 500-gallon waste-oil AST likely was located on the southeast exterior of the auto repair shop.
- **Contamination from off-Property sources**—dissolved-phase contamination associated with Ecology cleanup sites (an aboveground bulk lube-oil storage facility and muffler and tune-up center) located to the west of the Property has the potential to migrate onto the Property via groundwater transport.

In addition to the features of environmental concern listed above, which were evaluated as part of the Phase II ESA and preliminary RI activities, a feature of concern was identified in Ecology's UST database: a 111- to 1,100-gallon unleaded gasoline UST associated with the former Lentz Supply, Inc., that was closed in place on the Property. The UST may have been northeast of the auto repair shop. This potential feature of concern was not evaluated as part of this preliminary RI, but has been identified as a data gap (see Section 10).

2.4 Phase II Environmental Site Assessment

Whatcom Environmental conducted a Phase II ESA on the Property in 2011 to evaluate the presence or absence of environmental contamination associated with the RECs identified in their Phase I ESA. The Phase II ESA report is provided in Appendix A. Phase II ESA sample locations are shown in Figure 1-2.

Soil and groundwater samples were analyzed for one or more of the following:

- Gasoline-range total petroleum hydrocarbons (TPH).
- Diesel- and lube-oil-range (i.e., motor-oil-range) TPH (in this report, results for each of these constituents are summed and referred to as "heavy oils").

- Benzene, toluene, ethylbenzene, and xylenes.
- Polychlorinated biphenyls (PCBs).
- Metals (arsenic, cadmium, chromium, lead, and mercury).
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs).

Analytical results from the Phase II ESA were compared to MTCA Method A CULs (see Appendix A); CUL exceedances are summarized in Figure 2-1.

MTCA A CUL exceedances were detected in soil and groundwater on the Property and on an adjoining property owned by BNSF (see Figure 2-1); an active BNSF rail line operates on the BNSF property. CUL exceedances were detected in association with the following RECs and other features (see Figure 2-1):

- Former coal storage sheds—cPAHs in soil (borings B-8 and B-9)
- Former gasoline and heating-oil USTs—gasoline-range TPH and heavy oils in soil (borings B-4 and B-5)
- Former gasoline station—benzene and gasoline-range TPH in soil and gasoline-range TPH in groundwater (boring B-7)
- Former 10,000-gallon oil AST—gasoline and heavy oils in soil and groundwater (boring B-2)
- Former waste-oil storage area (i.e., the area where puddles with sheen were observed and waste oil reportedly was spilled from drums formerly stored there)—gasoline-range TPH, heavy oils, PCBs, lead, and cPAHs in soil (boring B-1)

No MTCA Method A CUL exceedances were detected in soil in a boring near the former automobile shop and oil house (boring B-3); however, no borings were completed directly within the footprint of this historical feature.

During the Phase II ESA, some soil samples were collected below the water table and analyzed, and the results were compared to MTCA A CULs for soil. However, analytical results from saturated soil samples are considered to be representative of combined soil and groundwater concentrations and not directly comparable to MTCA A CULs for soil, which are based on a direct-contact exposure pathway. Therefore, MTCA A CUL exceedances reported in the Phase II ESA for soil samples collected below the water table may not be representative of a human health concern; these samples are flagged with an asterisk in Figure 2-1.

Other features of environmental concern, as listed in the previous section, were not evaluated during the Phase II ESA.

3 PHYSICAL SETTING

3.1 Topographic Setting

The Property is located in a relatively flat alluvial plain between the nearby Skagit River and Lyman Hill to the northeast. The Property is mostly flat, graded, and covered by buildings or pavement; the ground surface elevation is approximately 56 feet above sea level. The rail lines on the adjacent BNSF property to the north and the property to the east are built on slightly raised berms.

3.2 Surface Water

Brickyard Creek is approximately 2,800 feet north of the Property and flows from the northeast toward the southwest. The Skagit River is approximately 7,000 feet south of the Property and flows toward the west (see Figure 1-1).

3.3 Geology

The surficial geology in the area is mapped as consisting of Holocene to Pleistocene Age lahar deposits included in the Kennedy Creek assemblage, which likely were deposited by eruptions from Mount Baker (Washington State Department of Natural Resources, 2000). This unit is characterized by moderately to poorly sorted sands and gravels with cobbles, gravels, silt, and clay. Surficial material at the Property may also include alluvial deposits from the Skagit River. No nonnative fill is known to exist at the Property, with the exception of approximately 1.5 feet of gravelly sand fill that was observed under the asphalt pavement, concrete building foundation, and gravel driveways during preliminary RI investigations, as discussed below.

Subsurface geology was observed during drilling activities conducted as part of the preliminary RI (see Section 4), and observations were recorded on boring logs, included as Appendix C. The following discussion is based on those observations.

Underlying the surficial cover and fill is a geologic unit consisting of generally brown to gray sand, with varying amounts of silt, extending to approximately 10 feet below ground surface (bgs). At approximately 10 feet bgs, a layer of well-sorted sand with trace woody debris, gravel, and orange mottling or staining, extending down to 25 feet bgs, was encountered. At 25 feet bgs, a poorly sorted gray sand, extending to 32.9 feet bgs, the maximum depth observed in any boring, was encountered. An approximately 2-foot-thick lens of clay and silt was encountered in some locations at approximately 15 feet bgs. A 1-foot-thick layer of woody debris was encountered at 8 feet bgs at boring location GP11 (see Figure 1-2).

At the western end of the northern property, the material encountered below the sand unit generally consists of layers of poorly sorted sand, silty clayey sand, and clayey silt extending to approximately 15 feet bgs. At the eastern end of the Property, a 2- to 5-foot-thick layer of coal-like material and gravelly sand with coal fragments was encountered in the former coal-storage shed areas. A clayey silt layer was encountered at 5 feet bgs, extending to approximately 14 feet bgs. At approximately 14 feet bgs, a silty sand was encountered.

3.4 Hydrogeology

During drilling conducted as part of the RI (see Section 4 and Appendix C), soil was observed to be generally fully saturated from the top of the water table down to the clay and silt unit, which was observed as being moist, but not fully saturated. The soil below the clay and silt unit was observed as being fully saturated down to the maximum depth drilled (35 feet bgs). This suggests that there is an unconfined groundwater unit consisting of silty sand and sand, underlain by a potentially semi-confining silt and clay unit at approximately 15 feet; however, this unit is not continuous throughout the Property. A semi-confined sand unit underlies the silt and clay.

During groundwater monitoring activities conducted as part of the RI, groundwater was typically encountered between approximately 5 and 10 feet bgs (see Section 4). Water levels measured in monitoring wells installed on the Property indicate that shallow groundwater flow beneath the Property is primarily toward the southeast; however, flow toward the northeast was observed during the groundwater monitoring event conducted in October 2012 (see groundwater elevation contour maps provided as Appendix D).

Groundwater elevations were approximately 1 to 2 feet lower in all three monitoring wells during the October 2012 event than during any of the seven other monitoring events conducted during the preliminary RI, which began in May 2012 (see Appendix D and Section 4). Given the variation in soil type observed across the Property and the cohesive nature of the native soils, it is possible that groundwater infiltration was variable between the monitoring well locations during this low-water event and that the groundwater elevations measured during the event were not in hydrostatic equilibrium and therefore were not representative of a continuous water-table surface.

Groundwater levels are not expected to be influenced by pumping from wells, as no water wells were identified within 0.5 mile downgradient of the Property (see Section 6.5).

3.5 Terrestrial and Aquatic Life

The Property is largely paved, with the exception of a gravel driveway that runs along the eastern side of the Property, with no vegetation (see Figure 1-2). There is substantial on-site human disturbance and no important resources for wildlife (see Section 6.3). Brickyard Creek, north of the Property, may support aquatic organisms, but no surface water bodies are present on the Property.

4 INVESTIGATION ACTIVITIES

MFA has conducted multiple rounds of investigation at the Property to assess potential environmental impacts associated with the RECs identified during the Phase I ESAs, as well as other features of concern identified by MFA (see Section 2.3), to further investigate CUL exceedances detected during the Phase II ESA (see Section 2.4) and to characterize the nature and extent of contamination on the Property. Investigation activities conducted by MFA as part of this preliminary RI are summarized in Table 4-1. RI activities were not conducted on BNSF property, given the previous access limitation discussed in Section 1.1, with the exception of one boring (GP01).

MFA collected soil and/or groundwater samples from 32 temporary boreholes and three monitoring wells, and a soil vapor sample from a sub-slab soil vapor probe; features of concern and sample locations are shown in Figure 1-2. Soil and groundwater samples were analyzed for chemicals of interest (COIs) associated with the features of concern identified at the Property. Samples collected and the laboratory analytical testing conducted are summarized in Table 4-2.

Field investigation, sample collection, and laboratory analytical activities were conducted in accordance with industry standard operating procedures and in accordance with the Property investigation work plans (see MFA, 2012a,b,c; 2014), and are summarized below.

4.1 Soil Sampling

A direct-push drilling rig was used to advance continuous soil cores at 35 boring locations from the ground surface up to 35 feet bgs; three of the boreholes were completed as monitoring wells. Boring logs are included in Appendix C. Most borings were advanced up to 10 to 15 feet bgs to evaluate potential soil impacts and to collect shallow groundwater reconnaissance samples; however, four borings (GP10 to GP12, and GP16) were advanced to 20 to 35 feet bgs to collect deeper groundwater reconnaissance samples and observe subsurface geologic conditions. Fifteen 5-foot-bgs borings were also completed in the former coal-shed areas to evaluate the extent of coal associated with coal-storage activities.

Generally, soil samples were collected from directly above the water table or from unsaturated soils with observed impacts (see Table 4-2 for sample depths). Soil conditions and visual and olfactory observations were recorded during drilling by a Washington-state-licensed geologist.

Boring locations from the preliminary subsurface investigation conducted in May 2012 (see Table 4-1) were surveyed by a licensed surveyor; boring locations from the additional subsurface investigation conducted in December 2012 (see Table 4-1) were recorded using a hand-held global positioning system device (Trimble™ 6000) with sub-meter accuracy.

4.2 Groundwater Sampling

Monitoring wells were installed in three of the boreholes (MW01 to MW03) and developed for collection of representative groundwater samples and water level measurements. Well installation logs are included in Appendix C and well development forms are included as Appendix E. Monitoring well locations, including water level measurement point elevations, were surveyed by a licensed surveyor.

Reconnaissance groundwater samples were collected from borings, using 5- to 10-foot-long, 1-inch-diameter, polyvinyl chloride or stainless steel, temporary well screens. Reconnaissance groundwater samples were collected from all borings except GP03, GP13, and GP18 to GP32.

Well screens were set at or near the water table surface in order to capture shallow groundwater and evaluate for the presence of light non-aqueous phase liquid (NAPL). In some cases, the high silt content of the soil at the water table was clogging the wells screens; therefore the screens were set below the top of the water table where coarser material was encountered. In order to collect samples of deeper groundwater, well screens were also set above the semi-confining unit at location GP10 (14 to 19 feet bgs) and 23 to 28 feet bgs at location GP12; no confining or semi-confining unit was encountered in boring GP12. The deeper groundwater samples were collected to evaluate potential density-driven impacts characteristic of chlorinated volatile organic compounds (CVOCs), which may be associated with waste oil.

Groundwater samples were collected using industry standard, low-flow sampling techniques and disposable tubing. Groundwater-sampling details were recorded on field sampling data sheets (FSDSs), included as Appendix F. Water level and field water quality measurements were collected prior to sample collection and are summarized in Tables 4-3 and 4-4, respectively.

4.3 Soil Vapor Sampling

One soil vapor sample was collected from below the slab of the auto repair shop (from soil vapor probe location SV1) to evaluate the potential for vapor intrusion in association with the volatile organic compound (VOC) impacts detected in soil and groundwater in that area (see Section 5.2).

MFA installed a semipermanent vapor probe in the concrete floor of the washroom at the north end of the auto repair shop in order to collect a sub-slab soil vapor sample in accordance with Tier I sub-slab soil vapor screening guidelines (Ecology, 2009). The probe was installed generally consistent with the methodology recommended by the U.S. Environmental Protection Agency (USEPA) (USEPA, 2006), as described below:

- A 1.5-inch-diameter outer hole was drilled approximately 2 inches into the concrete slab and then a 0.25-inch-diameter inner hole was drilled in the center of the outer hole through the slab to the sub-slab material (approximately 3 to 4 inches thick). Drilling dust was removed with a vacuum during drilling.
- A vapor probe was inserted into the inner hole so that the cap on the probe was flush with the top of the slab.
- The outer hole was filled with fast-setting Sakrete® cement (a blend of fine and coarse aggregates and special cements for quick setting) and allowed to dry for 24 hours prior to sampling.

Following installation of the vapor probe, a sub-slab soil vapor sample was collected in a laboratory-provided stainless steel Summa canister through a post-run tubing system with a helium-containing shroud (i.e., the helium was used as a gaseous tracer) around the sampling apparatus to provide a leak check, consistent with Ecology-recommended sub-slab soil vapor sampling procedures (Ecology, 2009). The atmosphere beneath the shroud was charged with a pressurized cylinder of helium, which typically results in atmospheric helium concentrations of 70 to 75 percent (Eurofins Air Toxics, Inc. [AT], 2014). A 24-hour composite indoor air sample was also collected from the washroom to provide background concentrations for comparison to the sub-slab soil vapor sample results.

4.4 Laboratory Analysis

Soil and groundwater samples were stored on ice and submitted to Analytical Resources, Inc. (ARI) of Tukwila, Washington, for analysis under standard chain-of-custody procedures. Specific chemical analyses were chosen for each location, based on the chemicals of interest for that area (see Table 4-2). Follow-up analyses were requested for some samples, based on the initial analytical results. Specific analyses performed are summarized in Table 4-2, but in general, samples were analyzed for TPH, chemicals associated with TPH and/or waste oil (e.g., VOCs, semivolatile organic compounds [SVOCs], polycyclic aromatic hydrocarbons [PAHs], PCBs, and metals), and/or chemicals associated with coal (e.g., PAHs and metals). One sample was analyzed for leachable metals by the toxicity characteristic leaching procedure to provide information for potential future soil disposal. Selected samples were analyzed for total organic carbon (TOC) and dissolved ferrous iron to provide additional information for solute fate-and-transport modeling.

Soil vapor samples were submitted to AT of Folsom, California, for analysis under standard chain-of-custody procedures. The soil vapor sample from SV1 was analyzed for selected VOCs by USEPA Modified Method TO-15 and for helium by the American Society for Testing and Materials Modified Method D-1946. The indoor air sample was submitted for potential analysis pending the results of the sub-slab sample, but was not analyzed (see Section 5.2.3).

5 INVESTIGATION RESULTS

5.1 Field Observations

Field observations include photoionization detector (PID) readings, visual (e.g., staining, sheen, or NAPL) and olfactory observations, and NAPL thickness and water quality parameter measurements. Field observations were recorded on the boring and well installation logs included in Appendix C and the FSDSs included in Appendix F. NAPL thickness and water quality data are included in Tables 4-3 and 4-4, respectively.

5.1.1 Coal

Coal was encountered in subsurface soil during drilling in borings associated with the former coal sheds located on Property parcels P109239 (both of the parcels with this parcel number), P77452, and P77493 (see Figure 1-2 and boring logs in Appendix C). Coal is generally present as fine- to medium-gravel-sized fragments mixed with soil and as an approximately 0.5-foot-thick layer at a depth of approximately 0.5 to 2.5 feet bgs. Medium-gravel-sized fragments of coal-like material were also encountered in an approximately 0.5-foot-thick seam from 1.9 to 2.3 feet bgs at GP06, located in the vicinity of the former gasoline station.

5.1.2 Woody Debris

Trace woody debris and large-gravel-sized wood fragments were observed in surficial fill material, mixed with coal material (as described above), and in native soil at depths below approximately 10 feet bgs. A layer of woody debris was also encountered in boring GP11 from 8 to 8.9 feet bgs, located in the footprint of the former electric plant (see Figure 1-2). This woody debris likely is associated with a woodshed and wood yard, which replaced the electric plant in this location in the 1920s (see Section 2.2).

5.1.3 Petroleum-related Impacts

Apparent petroleum-related impacts were observed in borings during drilling and recorded on boring logs (see Appendix C). Petroleum-related impacts are generally described as follows:

- Soil in the vicinity of the former gasoline-station location exhibited staining above the water table (borings GP07 and GP08) and petroleum-like odors (borings GP07 and MW03); a sheen was also observed in groundwater during drilling at MW03.
- A petroleum-like odor, but no sheen, was observed in groundwater at MW03 during groundwater-sampling events conducted from 2012 to 2014 (see Appendix F).
- Staining and low-level organic vapors (1.3 parts per million [ppm]), measured with a PID, were observed above the water table in boring GP08, located in the Ferry Street right-of-way south of the former gasoline-station location.
- A petroleum-like odor (at and below the water table) and sheen (in groundwater) were observed at MW02, which is located in the vicinity of the historical waste-oil AST and former abandoned-in-place heating-oil and gasoline USTs.
- A petroleum-like odor, but no sheen, was observed in groundwater at MW02 during groundwater sampling events conducted from 2012 to 2014 (see Appendix F).
- Apparent petroleum-related impacts were observed in the area north of the auto repair shop: staining was observed above the water table, petroleum-like odors and a sheen were observed in groundwater, and elevated organic vapors were detected with the PID (at approximately 2.5 feet bgs [513.6 ppm] and 6.5 feet bgs [34.4 ppm]) at location GP01.
- A petroleum-like odor and sheen were observed in groundwater and NAPL was encountered below the water table during drilling at MW01; a PID reading indicated the presence of low-level organic vapors (0.5 ppm) at approximately 1 foot bgs.
- NAPL was encountered in MW01 during groundwater-sampling events conducted in April, June, September, and December 2014 (see Table 4-3).
- Soil and groundwater samples from borings advanced inside the auto repair shop exhibited minimal to no petroleum-related impacts: in the underground hydraulic hoist service bay area, staining was observed above the water table at location GP03; no visual impacts or odors were observed at location GP02; no visual impacts or odors were observed and PID readings indicated no organic vapors present at location GP04, which

was positioned in an active service bay and the former location of the historical automobile shop and oil house.

5.2 Analytical Results

Laboratory analytical reports from the preliminary RI are provided in Appendix G. Analytical data and the laboratory's internal quality assurance and quality control data were reviewed to assess whether they meet project-specific data quality objectives. This review was performed consistent with accepted USEPA procedures for evaluating laboratory analytical data (USEPA, 2004, 2008, 2014) and appropriate laboratory and method-specific guidelines (ARI, 2014; AT, 2014). Data validation memoranda summarizing data evaluation procedures, usability of data, and deviations from specific field and/or laboratory methods for the preliminary RI data are presented as Appendix H. The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

Chemicals detected in soil, groundwater, and/or soil vapor in association with each feature of concern investigated, as discussed in Section 2.3, are discussed below. Sample locations and COIs, including the methods used to analyze samples for each COI associated with each feature of concern, are summarized in Table 4-2. The analyses performed are summarized in Table 4-2; analytical results are summarized in Tables 5-1, 5-2, and 5-3; and sample locations are shown in Figure 1-2.

5.2.1 Soil

5.2.1.1 Total Petroleum Hydrocarbons

Seven samples associated with the underground hydraulic hoists, former coal sheds, former USTs, and former waste-oil AST (from borings GP02, GP03, GP05, GP09, and MW02) were analyzed for identification of hydrocarbons. The presence of diesel- and motor-oil-range TPH was detected in one of the samples associated with the former coal sheds (GP05); therefore, this sample was also analyzed for heavy oils (i.e., the sum of the diesel- and motor-oil-range fractions), which were detected at 1,170 milligrams per kilogram (mg/kg) at 2 feet bgs. A sample associated with the former automobile shop and oil house (from boring GP17) was also analyzed for heavy oils, which were detected at 64 mg/kg at 9.5 feet bgs.

Five samples associated with the former electric plant, the waste-oil spill (i.e., puddles with sheen), the active waste-oil AST, and the former oil AST (from borings GP01, GP10, GP11, GP13, and MW01), located at the north end of the auto repair shop (GP01 is located on the BNSF property), were analyzed for gasoline-range TPH and heavy oils. Heavy oils were detected in all but the sample from GP13 (collected at 1.6 feet bgs) at a maximum concentration of 14,000 mg/kg (in the sample from GP01). The samples with heavy oils detections were collected from depths ranging from 1.6 to 3.1 feet bgs. Gasoline-range TPH was detected only in the samples from borings GP01 and GP11 at a maximum concentration of 1,400 mg/kg (in the sample from GP01) and at 2.5 and 1.25 feet bgs, respectively.

Four samples associated with the former gasoline station were analyzed only for gasoline-range TPH (from borings GP06, GP07, GP08, and MW03). Gasoline-range TPH was not detected in any of the samples.

Extractable petroleum hydrocarbons (EPH) and volatile petroleum hydrocarbons (VPH) were also analyzed in selected samples to determine the type of petroleum product present and to evaluate whether or not to calculate a site-specific TPH CUL. Two samples associated with the former electric plant, waste-oil spill, active waste-oil AST, and former oil AST, collected at the north end of the auto repair shop (from borings GP01 and MW01), were analyzed for EPH and VPH.

EPH was detected in both samples; VPH was detected only at GP01. The highest EPH concentrations were detected at GP01; therefore, this sample was used to calculate a site-specific CUL (see Section 7.1).

Four samples associated with the former gasoline station (from borings GP06, GP07, GP08, and MW03) were also analyzed for VPH. VPH was not detected in any of the samples.

5.2.1.2 Metals

Nine samples associated with the waste-oil spill, active waste-oil AST, former oil AST, former USTs, former waste-oil AST, former coal sheds, and underground hydraulic hoists (from borings GP01, GP02, GP03, GP05, GP09, MW01, and MW02) were analyzed for the Resource Conservation and Recovery Act (RCRA) list of eight metals (i.e., arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). Four or more metals (primarily arsenic, barium, cadmium, chromium, lead, and mercury) were detected in each of the samples. The highest metals concentrations were detected in the sample collected from location GP05 at 2 feet bgs; in particular, arsenic, cadmium, and lead concentrations were elevated in this sample at 26.4, 1.9, and 452 mg/kg, respectively. Selenium was not detected in any of the samples. Silver was detected in only one sample (GP05) at 0.3 mg/kg at 2 feet bgs.

Ten additional samples were collected from the former coal shed areas and analyzed for arsenic, cadmium, and lead (from borings GP19, GP22 to GP26, and GP29 to GP32). With one exception (cadmium was not detected in the sample from location GP19), all three metals were detected in all the samples, and concentrations of cadmium and lead were elevated at 3.3 mg/kg and 334 mg/kg in the samples from GP24 at 0.8 feet bgs and GP31 at 0.9 feet bgs, respectively.

Four samples associated with the former gasoline station were analyzed for lead. Lead was detected in all the samples at a maximum concentration of 3.5 mg/kg in the sample from MW03 at 1.9 feet bgs.

5.2.1.3 Volatile Organic Compounds

Nine samples associated with the former gasoline station, former electric plant, waste-oil spill, active waste-oil AST, and former oil AST (from borings GP01, GP06, GP07, GP08, GP10, GP11, GP13, MW01, and MW03) were analyzed for VOCs. Acetone was detected in all the samples, with the maximum concentration of 0.53 J ("J" represents an estimated value) mg/kg at GP11 at 1.25 feet bgs. Some or all of the following VOCs were detected at relatively low concentrations (equal to or less than 0.16 mg/kg) in seven of the samples (from locations GP06, GP07, GP08, GP10, GP13, MW01, and MW03): acetone, methylene chloride, toluene, and 2-butanone. Thirteen and 16 VOCs were detected in the samples from locations GP01 and GP11, respectively, which are both located at the north end of the auto repair shop.

5.2.1.4 Semivolatile Organic Compounds

Nineteen samples associated with the former electric plant, waste-oil spill, active waste-oil AST, former oil AST, and former coal sheds (from borings GP01, GP05, GP09, GP10, GP11, GP13, GP19, GP22 to GP26, and GP29 to GP32) were analyzed for PAHs by the USEPA 8270 selective ion monitoring (SIM) method. Naphthalenes were detected in all the samples and cPAHs were detected in all but two of the samples (from borings GP09 and GP13), with the maximum concentrations of 20 mg/kg (from GP01 at 2.5 feet bgs) and 12 mg/kg (from GP05 at 2 feet bgs), respectively. Multiple other PAHs were detected in most of the samples, with the highest concentrations detected in the samples collected from the former coal shed areas (from borings GP05, GP09, GP19, GP22 to GP26, and GP29 to GP32).

Three samples associated with the waste-oil spill, active waste-oil AST, former oil AST, and former coal sheds (from borings GP01, GP05, and MW01) were also analyzed for the full suite of SVOCs by the USEPA 8270 method. No SVOCs were detected by this method in the sample collected from boring MW01 at 3.1 feet bgs. PAHs and other SVOCs, including 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene, were detected in the sample collected from boring GP01 at 2.5 feet bgs. PAHs and carbazole were the only SVOCs detected by this method in the sample collected from boring GP05 at 5.6 feet bgs.

5.2.1.5 Polychlorinated Biphenyls

Six samples associated with the former electric plant, waste-oil spill, active waste-oil AST, former oil AST, and former coal sheds (from borings GP01, GP05, GP10, GP11, GP13, and MW01) were analyzed for PCB Aroclors. PCBs were detected in three of the samples (from borings GP01, GP05, and GP11) at a maximum total PCB concentration of 1.4 mg/kg in the sample from GP01 at 2.5 feet bgs.

5.2.1.6 Total Organic Carbon

Three samples collected from borings installed at the north end of the auto repair shop, associated with the former electric plant, waste-oil spill, active waste-oil AST, and former oil AST (from borings GP10, GP11, and GP12), were analyzed for TOC to evaluate in situ treatment as a cleanup option (see Section 11) and to evaluate natural attenuation conditions for TPH (see Section 6.2.1). TOC concentrations in these samples, collected from depths ranging from 2.0 to 12.0 feet bgs, ranged from 0.34 to 3.78 percent.

5.2.2 Groundwater

5.2.2.1 Total Petroleum Hydrocarbons

Two samples associated with the former coal sheds (from borings GP05 and GP09) were analyzed for identification of hydrocarbons. TPH was not detected in either sample; therefore, these samples were not analyzed for gasoline-range TPH or heavy oils.

Twenty samples associated with the former automobile shop and oil house, former electric plant, former gasoline station, potential off-Property dissolved-phase contamination, underground hydraulic hoists, former USTs, waste-oil spill, active waste-oil AST, and former oil AST (from borings GP01, GP02, GP04, GP06, GP07, GP08, GP10, GP11, GP12, GP16, GP17, and MW01 to MW03) were analyzed for gasoline-range TPH. Gasoline-range TPH was detected in the sample from boring GP01 at a concentration of 1,800 micrograms per liter (ug/L) and in two samples (a parent sample and a field duplicated sample) collected from monitoring well MW01 on May 15, 2012, at a maximum concentration of 400 ug/L. Two samples (a parent sample and a field duplicated sample) were subsequently collected at MW01 on April 10, 2014, and analyzed for gasoline-range TPH; gasoline-range TPH was not detected in either sample.

Thirty-five samples associated with the former automobile shop and oil house, former electric plant, former gasoline station, potential off-Property dissolved-phase contamination, underground hydraulic hoists, former USTs, waste-oil spill, active waste-oil AST, and former oil AST (from borings GP01, GP02, GP04, GP10, GP11, GP12, GP14, GP15, GP16, GP17, and MW01 to MW03) were analyzed for heavy oils. Heavy oils were detected in the samples from borings GP01, GP11, and GP12, with the maximum concentration of 4,400 ug/L at GP01, and in 18 samples collected from monitoring wells MW01 to MW03 from May 15, 2012, to December 10, 2014, at maximum concentrations of 3,800 ug/L at MW01 on December 10, 2014, 12,300 ug/L at MW02 on April 10, 2014, and 710 ug/L at MW03 on April 10, 2014.

Analysis for EPH was also conducted on three samples collected from monitoring wells MW01 (associated with the waste-oil spill, active waste-oil AST, and former oil AST), MW02 (associated with the former USTs), and MW03 (associated with the former gasoline station and potential off-Property dissolved-phase contamination) on April 10, 2014, to determine the type of petroleum product present and to evaluate whether to calculate a site-specific TPH CUL. EPH compounds were not detected in the samples from MW01 or MW03, and only two EPH compounds were detected at low concentrations in the sample from MW02. Given the absence of detections in the two samples and the minimal detections in the third, these results were not used to calculate site-specific CULs (see Section 7.2).

5.2.2.2 Metals

Eight samples associated with the former coal sheds, former automobile shop and oil house, underground hydraulic hoists, former USTs, waste-oil spill, active waste-oil AST, and former oil AST (from borings GP01, GP02, GP04, GP05, and GP09 and monitoring wells MW01 and MW02) were analyzed for dissolved metals, including arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury. Metals were detected in each of the samples, including arsenic at a maximum concentration of 3.6 ug/L at GP01; barium at a maximum concentration of 137 ug/L at GP01; lead at a concentration of 0.1 ug/L at GP01 and GP02; cadmium at a concentration of 0.1 ug/L at GP05; and chromium at a maximum concentration of 1 ug/L at MW01 (collected on May 15, 2012). Mercury, selenium, and silver were not detected in any of the samples.

Four samples associated with the former gasoline station and potential off-Property dissolved-phase contamination (from borings GP06, GP07, and GP08 and monitoring well MW03) were also analyzed only for dissolved lead. Lead was not detected in any of the samples.

Six samples associated with the former electric plant, waste-oil spill, active waste-oil AST, and former oil AST (from borings GP10 to GP12) were also analyzed for dissolved ferrous iron. Dissolved ferrous iron was detected in all of the samples, with the maximum concentration of 22,800 ug/L at GP11. Dissolved ferrous iron results are used to evaluate natural attenuation conditions for TPH (see Section 6.2.1).

5.2.2.3 Volatile Organic Compounds

Nineteen samples associated with the former coal sheds, former automobile shop and oil house, former electric plant, underground hydraulic hoists, former USTs, former gasoline station, potential off-Property dissolved-phase contamination, waste-oil spill, active waste-oil AST, and former oil AST (from borings GP01, GP02, GP04, GP06, GP07, GP08, GP10, GP11, and GP12, and monitoring wells MW01 to MW03) were analyzed for VOCs. VOCs were detected in 16 out of 19 samples; VOCs were not detected in the samples from locations GP02, GP04, and MW02. Acetone was the only VOC detected in the samples associated with the former coal sheds (from borings GP06, GP07, and GP08); the maximum concentration detected was 2.9 J ug/L at GP08. Multiple VOCs were detected in the other samples. The largest number of VOCs and highest concentrations were detected in the sample from GP01.

5.2.2.4 Semivolatile Organic Compounds

Sixteen samples associated with the former electric plant, underground hydraulic hoists, former automobile shop and oil house, former USTs, former coal sheds, former gasoline station, potential off-Property dissolved-phase contamination, waste oil spill, active waste oil AST, and former oil AST (from borings GP01, GP02, GP04, GP05, GP09, GP10, GP11, and GP12, and monitoring wells MW01 to MW03) were analyzed for the full suite of SVOCs by the USEPA 8270 method and/or for PAHs by the USEPA 8270 SIM method. SVOCs were detected in 11 out of the 16 samples. Naphthalenes, phenanthrene, acenaphthene, and fluorene were detected in the samples. Dibenzofuran, 2-chlorophenol, diethyl phthalate, and 1,2-, 1,3-, and 1,4-dichlorobenzene were also detected in the sample from GP01.

5.2.2.5 Polychlorinated Biphenyls

Two samples associated with the former gasoline station, potential off-Property dissolved-phase contamination, waste oil spill, active waste oil AST, and former oil AST (from boring GP01 and monitoring well MW03) were analyzed for PCBs. Only one PCB compound was detected (Aroclor 1248), at a concentration of 0.009 J ug/L at GP01.

5.2.3 Soil Vapor

One sub-slab soil vapor sample (from soil vapor probe SV1) was analyzed for VOCs and helium.

Helium was detected in the sub-slab soil vapor sample at 0.13 percent. Detection of helium indicates leakage of ambient air into the sample, but given that helium concentrations in the shroud likely were between 70 and 75 percent (see Section 4.3), a 0.13 percent helium detection indicates that between 0.17 and 0.18 percent leaked into the sample. For gaseous tracers, a sub-slab soil vapor is generally not considered compromised or unreliable if less than 5 to 10 percent of the starting concentration (i.e., the concentration under the shroud) is detected in the sample (DEQ, 2010; ITRC, 2007); therefore, the sub-slab soil vapor sample is considered reliable and the results are acceptable and usable.

Thirteen VOCs were detected in the sample, generally corresponding to the VOCs detected in soil and groundwater in boring locations GP01 and GP11.

An indoor air sample was also collected and submitted to the laboratory, but was not analyzed. The helium concentration detected in the sub-slab sample indicates minimal leakage of ambient air, and the VOC detections were similar to those detected in the subsurface samples from borings GP01 and GP11; therefore, the indoor air quality was not assessed for potential contribution to the sub-slab sample.

6 PRELIMINARY CONCEPTUAL SITE MODEL

6.1 Source Characterization

Chemicals detections indicate that multiple hazardous substance releases have occurred at the Property. COIs were detected in association with several of the features of environmental concern, as identified in Section 2.3 and as discussed in Section 5.2. The following sources of environmental contamination at the Property were identified based on chemical detections and the Property history:

- Coal released from coal sheds associated with the train depots formerly located on both parcels numbered P109239 is a source of metals, PAH, naphthalene, and heavy oils contamination. Coal likely was released to the ground surface in association with historical operations at the train depots and later covered with fill material and paved in sections.
- Petroleum (i.e., generator fuel) and waste oil potentially were released to the ground surface as leaks, spills, or runoff from the former 10,000-gallon fuel AST associated with the former electric plant; a waste-oil spill; and the active, 500-gallon waste-oil AST in the area at the north end of the auto repair shop. These potential releases are a source of NAPL and heavy oils, gasoline-range TPH, metals, VOC, and SVOC (including naphthalenes and PAHs) contamination. Detected chemical concentrations were

generally highest in the samples collected from GP01, located on the BNSF property, which suggests that the source of one or more releases was located on the BNSF property. Releases likely migrated into the subsurface in unpaved areas and through cracks in the pavement and concrete building slab, and into nearby stormwater drains.

- Tire vulcanizing, battery servicing, and gasoline- and oil-storage operations associated with the former gasoline station are potential sources of lead, VOC, naphthalene, and heavy oils contamination. No evidence of former USTs in this area was located, but given the absence of historical information related to the former gasoline station, it is unknown whether hazardous substances were released to the surface or subsurface or if USTs potentially remain in this area.
- Potential leaks of heating oil from the former heating-oil UST may have resulted in metals, naphthalene, fluorene, and heavy oils contamination. Analyses for gasoline-range TPH and VOCs were conducted on a groundwater sample from this area (from monitoring well MW02), associated with the former USTs and former 500-gallon waste-oil AST, but these analytes were not detected; therefore, these features are not considered to be a source of widespread impacts. However, samples were not collected within the footprint of these former features, so they cannot be ruled out as potential sources of localized chemical impacts. It is unknown whether USTs remain, closed in place, in this area.

Given that the woodshed and wood yard were located within the footprint of the former electric plant after the electric plant was removed, and that woody debris present in this location likely is associated with the former woodshed and wood yard (see Section 5.1.2), the fill material present above the woody debris likely was emplaced after the electric plant, woodshed, and wood yard operations ceased. Therefore, the shallow soil samples collected from within the footprint of the former electric plant (from borings GP11 and GP13) and subsequently analyzed likely are representative of the fill material, and chemical detections likely are associated with the petroleum and waste-oil releases discussed above; soil samples were not collected below the woody debris layer. During drilling, a petroleum-like odor was observed in saturated soil collected below the wood debris layer (see Appendix C), and chemicals were detected in a groundwater sample collected from below the woody debris layer at GP11 (see Table 5-2). Chemical detections at GP11 are similar to those detected at GP01; this indicates they are associated with the petroleum and waste-oil releases discussed above. No other evidence of contamination was observed in soil collected below the wood debris layer during drilling; therefore, the former electric plant is not considered a likely source of contamination.

Analyses for VOCs, SVOCs, and TPH were conducted on the sample associated with the former automobile shop and oil house, but these analytes were not detected. Analysis for TPH was conducted on samples associated with the underground hydraulic hoists, but TPH was not detected in these samples. Therefore, these features are not considered to be sources of environmental contamination.

Analyses for lead, VOCs, and gasoline-range TPH were conducted on groundwater samples collected from borings near the western Property boundary (GP06, GP07, and GP08; see Figure 1-2) located hydraulically upgradient of the former gasoline station and downgradient of potential off-Property sources (see Section 3.4 for a discussion of groundwater flow directions). Acetone was the only compound detected in those samples, which indicates that dissolved-phase contamination from off-Property cleanup sites located to the west of the Property is not migrating onto the Property.

6.2 Fate and Transport of Contaminants

The primary mechanisms likely to influence the fate and transport of chemicals at the Property include natural biodegradation of organic chemicals, sorption to soil, advection and dispersion in groundwater, volatilization of volatile chemicals from soil or groundwater to air, and leaching of chemicals from soil to groundwater. The relative importance of these processes varies, depending on the chemical and physical properties of the released contaminant. The properties of soil and the dynamics of groundwater flow also affect contaminant fate and transport.

The Property is unvegetated and mostly paved; an unpaved, gravel driveway runs along the eastern perimeter of the Property. The soil-to-groundwater migration pathway is potentially complete because of the potential for infiltration of precipitation through unpaved areas and through cracks in the pavement or in stormwater piping at the Property into the vadose-zone soil. Leaching of near-surface soil impacts during precipitation events could result in impacts to shallow groundwater at the Property.

Volatile contaminants may partition to the vapor phase in the source areas or downgradient of the source areas via groundwater transport of dissolved-phase contamination. Contaminant vapors partitioning from contaminated soil or groundwater could result in impacts to indoor and outdoor air quality.

The nearest downgradient surface water body is the Skagit River, which is approximately 7,000 feet south of the Property. Given the river's distance from the Property, it is not likely that dissolved-phase contamination migrating downgradient of the source area will impact surface water in the Skagit River.

Given that groundwater consistently flows southeast from the BNSF property toward the Property (see Section 3.4), dissolved-phase contamination present on the BNSF property, as detected in groundwater samples from boring GP01 (see Section 5.2.2) and Phase II ESA borings B-1 and B-2 (see Section 2.4), has the potential to migrate onto the Property.

6.2.1 Natural Biodegradation

Natural biodegradation is one of multiple naturally occurring processes that may contribute to the natural attenuation of chemicals in soil and/or groundwater at the Property. Soil and groundwater samples from the north end of the auto repair shop (from borings GP10, GP11, and GP12) were analyzed for parameters indicative of the natural biodegradation of petroleum and chlorinated solvent compounds, including TOC (in soil) and ferrous iron (in groundwater). Other parameters include pH, temperature, conductivity, turbidity, dissolved oxygen, and oxygen reduction potential (ORP); analyses for these were conducted on all groundwater samples collected at the Property (see Table 4-4).

Natural attenuation results indicate the following:

- Dissolved-oxygen concentrations (up to 3.58 milligrams per liter) indicate that conditions are not favorable for anaerobic microorganisms.
- Favorable pH for microbial populations (ranges from 6.67 to 9.18 pH units).
- The elevated dissolved ferrous iron concentrations (up to 22,800 ug/L) suggest that anaerobic degradation of petroleum compounds may be occurring naturally.
- The high turbidity concentrations (up to 722 nephelometric turbidity units) indicate that there may be interference from the aquifer material, and natural attenuation parameter results may not be representative of aquifer conditions.
- Temperatures (less than 20 degrees Celsius) are favorable for acceleration of microbial activity.
- Conductivity (222 to 984 microsiemens per centimeter) measurements are moderate, which indicates that dissolved ions (i.e., electron acceptors that may interfere with the natural anaerobic reduction of contaminants) may be present, but likely are not elevated.
- ORP measurements indicate that conditions are favorable for reduction of ferric iron to ferrous iron; this is consistent with the elevated ferrous iron detections.
- TOC measurements (up to 3.78%) indicate that organic carbon is available to support metabolic reactions for aerobic organisms, which, if present, may consume the aquifer matrix material before metabolizing any contaminants present

Additional data are required to make a conclusive determination of whether natural biodegradation processes alone could support the breakdown of petroleum and chlorinated-solvent contaminants at the Property, but these preliminary results indicate that conditions are highly favorable for anaerobic reduction of ferric iron.

6.3 Terrestrial Ecological Evaluation

A simplified terrestrial ecological evaluation (TEE) was completed for the Property; it was determined that the site does not pose a substantial threat to potential ecological receptors (see Appendix I). Therefore, soil analytical results will not be compared to ecological screening values.

6.4 Beneficial Water Use Determination

According to MTCA, groundwater CULs shall be based on estimates of the highest beneficial use and the reasonable maximum exposure expected to occur under both current and potential future Site use conditions (WAC 173-340-720[1][a]). The highest beneficial use of groundwater is discussed in this section. Potential exposure scenarios are discussed in Section 6.5.

Based on hydrogeological conditions observed on the Property and on regional topography, the following surface water and shallow groundwater conditions are present in the 0.5-mile radius surrounding the Property (the region of study):

- Shallow groundwater consistently flows toward the southeast.

- Shallow groundwater may discharge to Brickyard Creek, but it is unlikely, given that the creek is more than a 0.5 mile from the Property toward the northeast and that groundwater flow has been consistently toward the southeast, except during one monitoring event.

The region of study for the beneficial water use determination was defined as a 0.5-mile radius from the Property. This region of study is considered conservative, given that chemical concentrations detected in groundwater on the Property were observed to attenuate to undetectable levels over relatively short distances (typically less than approximately 130 feet, as observed between boring locations GP01 and GP04, for example) along the groundwater flow direction. The current, historical, and reasonably likely future beneficial water uses were evaluated for groundwater and surface water in the region of study.

6.4.1 Current and Historical Beneficial Water Uses

There is no known use of groundwater at the Property. The Property and surrounding area are supplied with water from the City of Sedro-Woolley (the City). The current groundwater use is likely to continue in the future. Three water wells were identified in the study area (see Figure 6-1). As discussed below, the current beneficial use listed for one of the three water wells found in the study area is irrigation. No water use information was provided for the other two water wells.

Likely historical beneficial uses of groundwater in the region of study are drinking water, irrigation, industry, and livestock watering. Groundwater right claims identified in the study area are discussed below.

There are no surface water bodies on the Property. Brickyard Creek is approximately 2,500 feet to the northwest of the Property, at the Creek's nearest point. No other surface water bodies are present within 0.5 mile of the Property. No surface water rights were located in the study area.

6.4.1.1 Contact with Municipal, Public, and Private Water Supplies

The City provides the area (including the region of study) with its municipal water supply from surface water sources. The primary water source is the Judy Reservoir, which collects water from the Skagit River and multiple tributary streams in the Cultus Mountains (WPUDA, 2007). No surface water diversions or collection points are located in the region of study.

6.4.1.2 Well Record Review for Groundwater

Logs for water wells in the region of study were obtained from Ecology's Washington State Well Log Viewer database, which allows the user to access well log reports for a specific township, range, and section (Ecology, 2012). Well log reports typically include information such as well location, well type, installation date, depth, depth-to-water measurements, and use. The study area included parts of sections 13, 14, 23, 24, 25, and 26 (township 35 north, range 4 east of the Willamette Meridian); and sections 18, 19, and 30 (township 35 north, range 5 east of the Willamette Meridian). Water well logs for wells located in these sections were evaluated and are included in Appendix J.

Water well information was obtained from the Washington State Well Log Viewer for all water wells located in the sections included in the area of study. These wells were plotted using the Washington State Plane location coordinates provided, and three were identified as being in the area of study (see Figure 6-1). One of the three wells is identified as an irrigation well (well no. 1). Water use information was not provided for the other two wells (well nos. 2 and 3).

The three wells were drilled to depths between 17 feet and 27 feet bgs and likely are completed in the sand unit. All three wells are located crossgradient to the Property.

The nearest well is located approximately 450 feet west of the Property. The well search did not identify any drinking-water wells that could be impacted by contaminants in shallow groundwater on or downgradient of the Site.

6.4.1.3 Water Right Review

Ecology Water Resources is responsible for apportioning water rights in Washington State and maintains a database of water rights (Ecology, 2012). The water right database was queried for water rights in the region of study. No surface water right diversion areas or collection points were identified in the region of study. Thirty-four potentially active groundwater water rights and one groundwater right certificate were identified in the study area, as summarized in Table 6-1. Copies of the water rights and the water right certificate are provided in Appendix K.

The water rights identified within 0.5 mile of the Property are designated for the following water uses: domestic, irrigation, stock watering, and industrial. However, Site-related impacts are not likely to affect groundwater withdrawals for these water rights. As discussed above, the analytical data indicate that the extent of groundwater impacts originating from the Property is limited (approximately 130 feet or less downgradient of the boring location with the highest detected chemical concentrations). The groundwater rights identified in the 0.5-mile radius search were mapped relative to the Property, and it was determined that only two of the rights are located within a 0.25-mile radius from the Property (the H.F. Cingmars irrigation claim and the Skagit Corporation industrial cooling claim). The withdrawal location information for these two claims was reviewed; both claims are approximately located more than 1,000 feet from the Property; therefore, dissolved-phase contamination originating on the Property is not likely to impact water resources covered under these claims.

6.4.2 Reasonably Likely Future Beneficial Water Uses

6.4.2.1 Surface Water

There are no surface water bodies on the Property. No surface water rights associated with nearby Brickyard Creek were identified and no other known surface water bodies are present within 0.5 mile of the Property. Drinking water in the area is supplied by the City from surface water diversions and collection points in the Skagit River and its tributaries in the Cultus Mountains, located approximately more than 1.5 miles south of the Property. It is unlikely that surface water from Brickyard Creek will be used as a drinking-water source in the future, given that it receives stormwater runoff from multiple surrounding industrial and commercial properties (City, 2010) and given the availability of the Skagit River and its tributaries as local drinking-water sources. However, Brickyard Creek is known for recreational fishing and is a salmon-bearing stream (City, 2010).

6.4.2.2 Groundwater

Groundwater under and near the Site is not currently used or anticipated to be used as a source of drinking water. The city's water is supplied by the Skagit River and its tributaries. The city is in an area of the Skagit River basin where groundwater withdrawals are subject to the WRIA 3 Instream Resources Protection Program rule (WAC 173-503), which provides restrictions on current and future groundwater use (Ecology, 2012). Under this rule, limited reserves of groundwater are available for new withdrawals, and therefore new water rights are difficult to obtain. Therefore, it is highly unlikely that any new domestic or commercial potable groundwater wells will be developed in the area.

Based on this information, it is not likely that dissolved-phase contamination originating from the Property is affecting or will affect area groundwater that may be used for drinking.

6.5 Potential Receptors and Exposure Pathways

The Property is currently used for commercial purposes, including office space, sales of new and used vehicles, and automobile maintenance, repair, painting, and washing. Adjoining property use includes commercial, residential, and industrial. The current Property and adjoining property uses are expected to continue into the foreseeable future. Based on these property uses, human receptors may include construction workers, occupational workers, and residents.

Brickyard Creek, located approximately 2,800 feet north of the Property, provides habitat that may attract recreational fishers. Therefore, recreational fishers are also potential receptors in the vicinity of the Property. Aquatic ecological receptors in Brickyard Creek could also potentially be exposed to chemicals originating on the Property.

The TEE indicates that the Site does not pose a substantial threat to terrestrial ecological receptors (see Appendix I).

The following pathways are potentially complete for human health and aquatic ecological receptors (see Figure 6-2):

Occupational Workers—Occupational workers currently occupy the Property and adjoining properties for incremental amounts of time for activities related to the operation of the automobile dealership and repair shop and other commercial businesses in the area. The pathways by which current or future occupational workers could potentially be exposed to chemicals in environmental media on the Property include:

- Direct skin contact with and incidental ingestion of chemically impacted shallow soil on the Property
- Inhalation of windborne particulates from chemically impacted shallow soil on the Property or migrating off-Property

- Inhalation of indoor or outdoor air vapors emanating from soil or groundwater with volatile chemical impacts on or migrating off the Property
- Direct skin contact with, ingestion of, and inhalation of volatizing chemically impacted, potable groundwater on or migrating off the Property

Off-Property Residents—The residential properties adjoining the Property are currently occupied. The pathways by which current or future off-Property residents could potentially be exposed to chemicals originating at the Property include:

- Inhalation of windborne particulates migrating off-Property from chemically impacted shallow soil
- Inhalation of indoor or outdoor air vapors emanating from soil or groundwater with volatile chemical impacts migrating off-Property
- Direct skin contact with, ingestion of, and inhalation of volatizing chemically impacted, potable groundwater migrating off-Property

Construction Workers—No construction workers (e.g., excavation workers, trench workers) are currently on the Site. However, construction activities may be performed as part of Site redevelopment or future maintenance or improvement activities. Future construction workers could potentially be exposed to chemicals in environmental media on the Property by the following pathways:

- Direct skin contact with and incidental ingestion of chemically impacted soil in excavations on the Property
- Inhalation of wind-borne particulates on or migrating off-Property from chemically impacted soil in excavations on the Property
- Inhalation of outdoor air vapors emanating from soil or groundwater with volatile chemical impacts on or migrating off the Property
- Dermal contact with, incidental ingestion of, or inhalation of vapors emanating from chemically impacted, shallow groundwater on or migrating off the Property as encountered in excavations below the water table, or ingestion of groundwater if used for potable purposes

Recreational Fishers—Brickyard Creek may be used by recreational fishers. Recreational fishers could potentially be exposed to chemicals migrating to Brickyard Creek by the following pathways:

- Direct skin contact with and incidental ingestion of surface water or sediment in Brickyard Creek that has been chemically impacted via discharges of chemically impacted groundwater migrating off-Property
- Ingestion of chemicals bioaccumulated in the tissue of fish from chemically impacted surface water or sediment in Brickyard Creek

Aquatic Ecological Receptors—Aquatic ecological receptors may be exposed to chemically impacted shallow soil, surface water, sediment, and/or fish tissue at the Site by the following pathways:

- Direct contact with and ingestion of surface water or sediment in Brickyard Creek that has been chemically impacted via discharges of chemically impacted groundwater migrating off-Property
- Ingestion of chemicals bioaccumulated in the tissue of fish from chemically impacted surface water or sediment in Brickyard Creek

Soil vapors were detected at relatively low concentrations in a sample collected below the slab of the current auto repair shop, adjacent to the boring with the highest detected VOC concentrations (GP01); therefore, exposure pathways that include inhalation of chemically impacted indoor or outdoor air vapor are considered insignificant.

Given that groundwater is not currently used as a drinking water source, and that it is highly unlikely to be so used in the foreseeable future, exposure pathways that include direct skin contact with, ingestion of, and inhalation of volatizing, chemically impacted potable groundwater extracted from drinking water wells are considered insignificant.

Groundwater contamination was observed to attenuate over relatively short distances (approximately 130 feet) at the Property (see Section 6.4). Therefore, exposure pathways that include discharges of chemically impacted groundwater to surface water and sediment in Brickyard Creek, which is approximately 2,800 feet from the Property, are considered insignificant.

The only potentially complete exposure pathways identified at the Property are releases of chemicals from near-surface soil and subsurface soil or groundwater in excavations (see Figure 6-2). No immediate exposure concerns were identified at the Property, given that the Property is mostly paved and that no excavation work is imminent.

7 PRELIMINARY CLEANUP STANDARDS

According to MTCA, the cleanup standards for a particular site have two primary components: chemical-specific CULs and points of compliance (POCs). The CUL is the concentration of a chemical in a specific environmental medium that will not pose unacceptable risks to human health or the environment. The POC is the location where the CUL must be met.

MTCA provides three different options for establishing CULs for human health: Method A, Method B, and Method C. MTCA Method A is designed for cleanups at relatively simple sites, such as small sites that have only a few hazardous substances. Method B can be used at any site. Method C is used primarily for industrial sites.

Preliminary CULs were developed for screening purposes, as discussed below. These CULs are not considered final CULs for the Property; CULs may be redeveloped following additional investigation and characterization of the identified impacts on the Property.

7.1 Soil

Relatively few contaminants were detected in soil at the Property. Therefore, soil was screened to MTCA Method A CULs for unrestricted land use. The Method A values are for protection of human health via the direct-contact or ingestion pathways and protection of groundwater via the leaching-to-groundwater pathway.

For certain constituents, MTCA Method A CULs are not available and Method B CULs were applied. Method B CULs are calculated concentrations that are estimated to result in no acute or chronic toxic effects on human health for noncarcinogens, and concentrations for which the upper bound on the estimated excess cancer risk is less than or equal to one in one million (1×10^{-6}) for carcinogens.

As discussed in Section 6.3, the site does not pose a substantial threat to potential ecological receptors; therefore, soil analytical results will not be compared to ecological screening values.

Soil CULs for the protection of potable groundwater (leaching-to-groundwater pathway) are not currently recommended as potential cleanup targets for soil on the Property. The leaching-to-groundwater criteria are helpful in providing an initial screening of soil data to assess the potential for impacts to groundwater; however, because empirical groundwater data are available, groundwater data are used to evaluate groundwater conditions.

As discussed in Section 5.2.1.1, EPH and VPH were analyzed in selected soil samples for evaluation of site-specific MTCA B CULs for TPH. No VPH was detected in the former gasoline station area. EPH and VPH were detected in soil from GP01 and EPH was detected in soil from MW01. Results from samples collected from both locations were used to calculate site-specific MTCA B CULs (see Appendix L). The site-specific CULs are less than the MTCA A CUL for both samples; therefore, the MTCA A CUL was used.

7.1.1 Point of Compliance in Soil

The soil POC is the depth at which soil CULs shall be attained. The standard POC in soil for human direct contact is from the ground surface to 15 feet bgs throughout the entire site. This standard POC is applied to soil on the Property.

7.2 Groundwater

Groundwater was screened to MTCA Method A CULs. Given that exposure pathways that include discharge of groundwater to surface water and/or sediment are considered insignificant (see Section 6.5), groundwater was not screened to surface water CULs. For certain constituents, Method A CULs were not available and Method B CULs were used.

VOCs detected in groundwater were not compared to groundwater screening levels (SLs) for vapor intrusion, since a sub-slab soil vapor sample was collected to evaluate the potential for vapor intrusion.

Selected groundwater samples were analyzed for EPH, as discussed in Section 5.2.2.1. EPH results were inconclusive as to the type of petroleum product present; therefore, a site-specific MTCA B CUL was not calculated for TPH.

7.2.1 Point of Compliance in Groundwater

For groundwater, the POC is the point or points where the groundwater CULs must be attained for a site to be in compliance with the cleanup standards. The standard POC is groundwater throughout the site from the uppermost level of the saturated zone extending vertically to the lowest depth that could potentially be affected by the site. Groundwater CULs shall be attained in all groundwater from the POC to the outer boundary of the hazardous-substance plume. A conditional POC may be established if it is not practicable to meet the CULs throughout the site within a reasonable restoration time frame (WAC 173-340-720(8)(c)). A conditional POC at the Property boundary is proposed for this property-specific cleanup.

7.3 Soil Vapor

Soil vapor concentrations were compared to MTCA Method B sub-slab soil vapor SLs for protection of indoor air (Ecology, 2015). The most stringent of the carcinogenic and noncarcinogenic SLs was selected. These SLs are protective of indoor air, given attenuation of soil gas concentrations migrating through the foundation (i.e., slab) of a building.

Soil vapor was not compared to SLs for protection of outdoor air, as this exposure pathway is considered insignificant (see Section 6.5).

7.3.1 Point of Compliance for Soil Vapor

For soil vapor collected beneath the foundation of existing buildings (i.e., sub-slab soil vapor), the standard POC is immediately below the foundation of the building. The standard POC is applied to sub-slab soil vapor at the Property.

8 PRELIMINARY CLEANUP LEVEL EXCEEDANCES

Analytical results from the MFA investigation work were compared to preliminary CULs (see Tables 5-1 through 5-3). CUL exceedances are summarized in Figures 8-1 and 8-2. CUL exceedances were detected in soil and groundwater on the Property and on an adjoining property owned by BNSF (boring GP01).

The following sums were calculated for comparison to CULs; one-half the method reporting limit was used in the calculations for non-detect values:

- Total naphthalenes: sum of 1- and 2-methylnaphthalene and naphthalene
- cPAH toxic equivalency quotient: sum of the toxic equivalency factors (as defined in MTCA Table 708-2, WAC173-340-900) multiplied by the result values for cPAH compounds
- Total xylenes: sum of m-, p-, and o-xylene
- Heavy oils: sum of diesel- and motor-oil-range TPH
- Total PCBs: sum of the PCB Aroclors

Chemical exceedances detected during the Phase II ESA are discussed in Section 2.4 and summarized in Figure 2-1.

8.1 Soil

CUL exceedances were detected in unsaturated soil samples from borings associated with the former coal sheds, located along the eastern perimeter of the Property (GP05, GP22, GP24, GP25, GP26, GP30, GP31, and GP32; see Figure 8-1 and Table 5-1). Exceedances were detected in soil samples collected from depths ranging from 0.3 to 2.6 feet bgs and included the following compounds: naphthalenes, metals (arsenic, lead, and cadmium), and cPAHs.

In general, soil samples collected from borings associated with the coal sheds included coal material in the sample; however, some samples with no visible coal material were collected and analyzed (from borings GP23, GP29, and the samples collected from 5 feet bgs and deeper at GP05 and GP09). The absence of CUL exceedances in those samples indicates that CUL exceedances are associated with the coal material; soil material that does not contain coal has not been impacted. Therefore, CUL exceedances associated with the former coal sheds can generally be correlated with the visual presence of coal.

Based on visual observations, the vertical extent of coal is delineated at approximately 5 feet bgs (see logs for borings GP05, GP09, and GP18 to GP32 in Appendix C). The off-Property horizontal extent of coal has not been delineated to the north, east, or south, or in the West Ferry Street right-of-way. The horizontal extent of coal on the portion of the Property north of West Ferry Street has been delineated to the west by the absence of coal observed in borings GP12 and GP17. The horizontal extent of coal on the portion of the Property south of West Ferry Street has not been fully delineated.

CUL exceedances were also detected in unsaturated-soil samples collected from borings associated with the waste-oil spill, the active waste-oil AST, and the former oil AST (GP01, GP10, and GP11; see Figure 8-1 and Table 5-2). Exceedances detected in samples collected on the Property (GP10 and GP11) ranged from 0.5 to 2.8 feet bgs and included cPAHs, gasoline-range TPH, and heavy oils. Exceedances detected in a sample collected from 1.0 to 3.4 feet bgs from a boring located on the adjacent BNSF property (GP01) included cPAHs, gasoline-range TPH, heavy oils, methylene chloride, naphthalenes, and PCBs. Gasoline-range TPH and heavy oils concentrations detected at GP01 were almost twice the concentrations detected at GP11, indicating that the source of the release was located on the BNSF property. The off-Property, vertical and horizontal extent of CUL exceedances (at GP01) has not been delineated.

On the Property, the horizontal extent of gasoline-range TPH and heavy oils has been delineated to the south, west, and east by the absence of TPH exceedances at GP02, GP03, GP13, GP10, and MW01; the vertical extent has not been delineated, but soil generally becomes saturated at approximately 5 to 10 feet bgs (see Section 3.4).

The on-Property horizontal extent of cPAH exceedances in soil has been delineated to the south and east by the absence of exceedances at GP02, GP03, GP13, and MW01. The on-Property extent of cPAH exceedances has not been delineated vertically or horizontally to the west of GP10.

8.2 Groundwater

Groundwater CUL exceedances in samples collected on the Property (GP10, GP11, GP12, MW01, MW02, and MW03) included dissolved ferrous iron and heavy oils. Groundwater CUL exceedances in the sample collected off-Property (boring GP01) included VOCs (1,2,3-trichloropropane, 1,4-dichlorobenzene, and chlorobenzene), gasoline-range TPH, and heavy oils. Most groundwater samples were collected at or near the top of the water column, but deeper groundwater samples were also collected from borings GP10, GP11, GP12, and GP16.

CUL exceedances were detected in reconnaissance groundwater samples collected from temporary borings (GP01, GP10, GP11, and GP12) and from a monitoring well (MW01) associated with the former electric plant, waste-oil spill, the active waste-oil AST, and the former oil AST (see Figure 8-2 and Table 5-2). Dissolved ferrous iron exceedances (GP10 and GP11) and a heavy oils exceedance at GP11 were detected in groundwater samples collected from 14 to 20 feet bgs, below the top of the water table, which was observed at approximately 6 to 10 feet bgs during drilling at these locations. A shallower groundwater sample was collected from the top of the water column (from 5 to 10 feet bgs) at GP10 and analyzed for dissolved ferrous iron; the dissolved ferrous iron concentration detected in that sample did not exceed its CUL (see Table 5-2). The elevated dissolved ferrous iron concentrations likely ae associated with the naturally occurring anaerobic degradation of petroleum compounds (see Section 6.2.1). Iron is not a COI associated with any of the features of environmental concern identified at the Property (see Section 2.3).

With the exception of the heavy oils exceedance detected in deeper groundwater at GP11, as discussed above, heavy oils exceedances in groundwater were generally detected in samples collected at or near the top of the water column from locations associated with the former gasoline station (MW03), the former USTs (MW02), and the former electric plant, the waste-oil spill, the active waste oil AST, and the former oil AST (MW01, GP01, GP11, and G12).

At the north end of the Property, the on-Property horizontal extent of heavy oils exceedances associated with the former electric plant, the waste-oil spill, the active waste-oil AST, and the former oil AST are delineated by the absence of TPH detections at GP10 to the west; GP02, GP04, GP16, and GP17 to the south; and GP05 to the east-southeast. The groundwater flow direction is consistently toward the southeast (see Section 3.4). The off-Property extent of heavy oils exceedances detected at GP01 has not been delineated. Quarterly sampling conducted at MW01 in

2014 indicates that heavy oils concentrations may be increasing in this area of the Property (see Figure 8-2.

Heavy oils exceedances associated with the former USTs (MW02) are delineated by the absence of TPH detections at GP04, GP16, and GP17 to the north. The horizontal extent has not been delineated to the east, west, or south; however, given that groundwater flow is toward the southeast, heavy oils exceedances are not expected in crossgradient or upgradient areas to the west and east of MW02. Heavy oils exceedances may extend off-Property into the West Ferry Street right-of-way to the southeast, but additional investigation would be needed to confirm the extent in that direction. Quarterly sampling conducted at MW02 in 2014 indicates that heavy oils concentrations may be decreasing over time in this area of the Property (see Figure 8-2).

Heavy oils exceedances associated with the former gasoline station (MW03) are delineated by the absence of TPH detections at GP14 and GP15 to the north; GP06 and GP07 to the west; and GP08 to the south (located in the West Ferry Street right-of-way). The horizontal extent has not been delineated to the east of MW03; however, given that groundwater flow is toward the southeast, heavy oils exceedances are not expected in that crossgradient direction. Heavy oils exceedances may extend off-Property into the West Ferry Street right-of-way to the southeast, but additional investigation would be needed to confirm the extent in that direction. Quarterly sampling conducted at MW03 in 2014 indicates that heavy oils concentrations may be relatively stable in this area of the Property (see Table 5-2 and Figure 8-2).

The extent of gasoline-range TPH and VOC exceedances detected on BNSF property (GP01) has not been delineated. VOC and gasoline-TPH concentrations detected on the Property in locations GP11 and MW01, located to the south and east of GP01, respectively, did not exceed their respective CULs. However, gasoline-range TPH and VOC exceedances may extend onto the Property in a localized area between GP11 and MW01, in the direction of groundwater flow (i.e., toward the southeast), but additional investigation would be needed to confirm the extent in that direction.

8.3 Soil Vapor

The VOC concentrations detected in the sub-slab soil vapor sample collected from soil vapor probe SV1 (see Figure 1-2) do not exceed their vapor SLs (see Table 5-3). These results indicate that VOC contamination in soil and groundwater in this area of the Property is not adversely impacting the quality of indoor air in the auto repair shop building.

8.4 Indicator Hazardous Substances

COIs that exceeded a preliminary CUL at least once were selected as preliminary indicator hazardous substances (IHSs), with the exception of dissolved ferrous iron in groundwater. Dissolved ferrous iron was not selected as an IHS because it is likely a by-product of anaerobic biodegradation of petroleum compounds and is not associated with any features of environmental concern identified on the Property, and therefore characterization and cleanup of petroleum contamination likely will resolve any dissolved ferrous iron exceedances.

IHSs detected within the boundaries of the Property include the following:

- Soil: cPAHs, gasoline-range TPH, heavy oils, arsenic, cadmium, lead, and naphthalenes
- Groundwater: heavy oils

IHSs detected on the BNSF property include the following:

- Soil: cPAHs, gasoline-range TPH, heavy oils, methylene chloride, naphthalenes, and PCBs
- Groundwater: 1,2,3-trichloropropane, 1,4-dichlorobenzene, chlorobenzene, gasoline-range TPH, and heavy oils

9 AREAS OF CONCERN

IHSs were generally detected in four separate and distinct areas of the Property that are referred to herein as "areas of concern" (AOCs) and discussed separately for purposes of evaluating cleanup options in the FS portion of this report. Features of concern and CUL exceedances associated with each AOC are discussed below and are shown in Figure9-1. Phase II ESA sample results are included in this evaluation, but CUL exceedances in soil samples collected below the water table during the Phase II ESA are not considered representative for the soil direct-contact exposure pathway (as discussed in Section 2.4) and were not included in this evaluation.

Chemical impacts associated with the following features of environmental concern were not identified, and therefore these features are no longer considered potential environmental concerns and are not included in the characterization of AOCs:

- Former electric plant
- Underground hydraulic hoists
- Former gasoline UST
- Former 500-gallon waste oil AST
- Off-property dissolved-phase contamination from cleanup sites to the west of the Property
- Former automobile shop and oil house

The following discussion is based on the current understanding of site conditions; however, as discussed in Section 8, the extent of chemical exceedances in the AOCs has not been fully delineated and data gaps remain. Data gaps are identified in Section 10.

9.1 AOC 1: Auto Repair Shop

The auto repair shop AOC is defined by chemically impacted soil and groundwater at the north end of the auto repair shop associated with the waste-oil spill, active waste-oil AST, and former oil AST, and includes borings GP01 (located on the BNSF property), GP10, GP11, GP12, and GP13; monitoring well MW01; and Phase II ESA borings B-1 and B-2 (located on the BNSF property).

Chemical impacts in this AOC include the following:

- Gasoline-range TPH, heavy oils, and cPAH in shallow soil (at depths less than approximately 5 feet bgs) on the Property
- Gasoline-range TPH, heavy oils, cPAH, methylene chloride, naphthalenes, and PCBs in shallow soil (at depths less than approximately 5 feet bgs) on the BNSF property
- Heavy oils in groundwater on the Property
- VOCs (1,2,3-trichloropropane, 1,4-dichlorobenzene, and chlorobenzene), gasoline-range TPH, and heavy oils in groundwater on the BNSF property
- Presence of NAPL in the smear zone and at the water table on both the Property and the BNSF property

In general, the highest contaminant concentrations were detected at GP01, indicating that the source of the release may have been located on the BNSF property. The extent of CUL exceedances in soil and groundwater on the Property is generally well defined, with the exception of the vertical and horizontal (to the west of GP10) extent of cPAH exceedances in soil. The extent of CUL exceedances on the BNSF property has not been delineated and is included in the data gaps discussed in Section 10 of this report.

In addition to the chemical impacts described above, this AOC may include a former (closed-in-place) unleaded gasoline UST associated with the former Lentz Supply, Inc., operations. This UST was identified as a potential feature of environmental concern following completion of the preliminary RI activities (see Section 2.3); therefore, it has not been evaluated for the presence or absence of associated environmental contamination. This feature has been included in the data gaps discussed in Section 10 of this report.

9.2 AOC 2: Former USTs

The former USTs AOC is defined by chemically impacted groundwater to the southeast of the auto repair shop associated with the former heating oil UST and includes borings GP16 and GP17; monitoring well MW02; and Phase II ESA borings B-4 and B-5.

Chemical impacts in this AOC include the following:

- Heavy oils exceedances in groundwater

The extent of heavy oils exceedances in groundwater has not been defined in the downgradient (i.e., southeast) direction and may extend off-Property into the West Ferry Street right-of-way. Records indicate that the USTs were closed in place and may remain in the subsurface. Soil impacts may be present in localized areas around any remaining USTs.

9.3 AOC 3: Former Coal Storage Sheds

The former coal-storage sheds AOC is defined by chemically impacted, coal-containing soil along the eastern perimeter of the Property associated with these features and includes borings GP05, GP09, and GP18 through GP32 and Phase II ESA borings B-8 and B-9.

Chemical impacts in this AOC include the following:

- Naphthalenes, metals (arsenic, lead, and cadmium), and cPAHs in coal-containing, shallow soil (at depths less than approximately 5 feet bgs)

No groundwater exceedances were detected in association with the coal impacts.

Chemical exceedances were detected only in soil with visible coal material; therefore, impacts are associated with the presence of coal. The horizontal extent of coal has not been delineated on the portion of the Property south of West Ferry Street (to the west of borings GP30 through GP32); and outside the Property boundaries to the north on the BNSF property and east, south, and in the Ferry Street right-of-way. The vertical extent of coal material is well defined and is delineated at less than approximately 5 feet bgs.

9.4 AOC 4: Former Gasoline Station

The former gasoline station AOC is defined by chemically impacted groundwater at the westernmost end of the Property associated with this feature and includes borings GP06, GP07, GP08, GP14, and GP15; monitoring well MW03; and Phase II ESA borings B-6 and B-7.

Chemical impacts in this AOC include the following:

- Heavy oils exceedances in groundwater

The extent of heavy oils exceedances in groundwater has not been defined in the downgradient (i.e., southeast) direction and may extend off-Property into the West Ferry Street right-of-way. No records confirming that USTs were located in this area were found, but the potential remains, given the historical use. Soil impacts may be present in localized areas around any remaining USTs.

9.5 Summary

The nature and extent of contamination within the boundaries of the Property, as presented in this preliminary RI/FS, are sufficiently characterized for development of preliminary cleanup options for partial cleanup of the Site, including areas of contamination located on the Property and the adjoining BNSF property, in pursuit of property-specific NFA determinations. However, data gaps related to the Site remain, as discussed in the next section. MFA recommends addressing data gaps relevant to the selection of cleanup actions in support of property-specific NFA determinations on the Property, and as allowed on the BNSF property under the access agreement, before the final selection and implementation of those cleanup actions.

Where data gaps exist, conservative assumptions were made in order to develop the preliminary cleanup options discussed in the FS portion of this report (Section 11).

10 DATA GAPS

As discussed above, MFA has identified data gaps at the Site. However, MFA recommends addressing only those data gaps relevant to the selection of cleanup actions in support of property-specific NFA determinations. MFA recommends that data gaps considered relevant only to a full "Site NFA" need not be addressed in order to pursue property-specific NFA determinations.

MFA recommends that the following data gaps, listed by AOC, be addressed before finalization of the RI/FS and selection of cleanup options for property-specific NFA determinations. These recommendations address data gaps associated with the nature and extent of contamination originating on the Property, regardless of whether it has come to lie on the Property or on other properties, and potential contamination on only the Property originating from contamination unique to the BNSF property (i.e., those COCs that were detected only on the BNSF property). Additional investigation activities may also be recommended to provide information needed for remedial selection and design.

- AOC 1: Auto Repair Shop
  - Horizontal and vertical extent of cPAHs, gasoline-range TPH, and heavy oils in soil; and heavy oils in groundwater on the Property and BNSF properties
  - Horizontal extent of gasoline-range TPH in groundwater on the Property
  - Potential presence of VOCs in soil and groundwater on the Property downgradient of GP01
  - Potential presence of a closed-in-place, former unleaded gasoline UST to the northeast of the auto repair shop and associated, localized soil and/or groundwater impacts
- AOC 2: Former USTs
  - Horizontal extent of heavy oils in groundwater to the southeast of MW02 on the Property and in the City right-of-way
  - Potential presence of closed-in-place former gasoline and heating-oil USTs on the Property and associated, localized soil and/or groundwater impacts
- AOC 3: Former Coal-Storage Sheds
  - Horizontal extent of IHS-containing coal material to the west of GP30, GP31, and GP32 on the portion of the Property south of West Ferry Street
  - Refinement of the horizontal extent of IHS-containing coal material to the west of GP24 and GP25 on the portion of the Property north of West Ferry Street

- AOC 4: Former Gasoline Station
  - Horizontal extent of heavy oils in groundwater to the southeast of MW03 on the Property and in the City right-of-way
  - Potential presence of an abandoned UST on the Property and associated, localized soil and/or groundwater impacts

MFA will prepare a data gap investigation work plan to address these data gaps. The work plan will also include recommendations for additional data collection needed to further develop cleanup options.

In addition to the data gaps listed above, and based on detected CUL exceedances, the following data gaps are considered relevant only to a full "Site NFA" and need not be addressed in order to pursue property-specific NFA determinations:

- AOC 1: Auto Repair Shop
  - Horizontal extent of VOCs and gasoline-range TPH in groundwater on the BNSF property
  - Horizontal and vertical extent of VOCs and PCBs in soil on the BNSF property
- AOC 3: Former Coal-Storage Sheds
  - Horizontal and vertical extent of IHS-containing coal material outside the Property boundaries in the vicinity of the former coal sheds

11 PRELIMINARY FEASIBILITY STUDY

MFA prepared this preliminary FS to provide cleanup options for addressing IHS exceedances in support of property-specific NFA determinations. BNSF has agreed to access conditions that would allow MFA limited access to its property adjacent to and north of the Property. There are constraints regarding the specific chemicals allowed for analysis in the soil and groundwater located on BNSF property that limit the ability to delineate all IHSs of the Site. Additional characterization of specific IHSs on the BNSF property will aid in the delineation of petroleum hydrocarbons and PAHs in AOC 1, but will not provide information regarding any other constituent that may be present on the BNSF property. Given that BNSF has denied full access to its property, characterization of the entire Site is not feasible at this time. Remedial options are provided in this report that would address known contamination and suspected contamination on the Property and the BNSF property. Information collected during the data gap investigation will be used to further evaluate remedial options, but since the remedy development will be based on a limited understanding of the nature and extent of contamination on the BNSF property, the remedial actions may not address the entire Site. However, it is anticipated that the remedial actions developed in this report will meet the requirements for property-specific NFA determinations. At

VSF's request, MFA will look for opportunities to gather the information needed to remediate the entire Site (e.g., during a supplemental data gap investigation or during remedy implementation).

MFA will require BNSF's approval to conduct any additional environmental activities on the BNSF property (e.g., supplemental data gap investigation or remedy implementation), beyond the already approved data gap investigation, but MFA anticipates that BNSF will allow access for these activities in the future under the access agreement between BNSF and MFA.

11.1 Cleanup Option Development

The cleanup options developed in this report combine technologies for remediation of metals, TPH, NAPLs, PCBs, and PAHs in soil and groundwater. To the greatest extent possible, while still meeting the MTCA threshold criteria, the cleanup options were developed to avoid the removal of or impediment to adjacent buildings, structures, and vegetation. MTCA threshold criteria are discussed in more detail in Section 11.1.3.

11.1.1 Remedial Technology Screening

This section provides a general discussion of the remedial technologies from which the cleanup options were developed. Detailed descriptions of each cleanup option are provided in Section 11.2.

Accepted remedial technologies for managing IHS-containing soil and groundwater were considered, including containment by capping, soil removal and off-site landfill disposal, in situ treatment, and monitored natural attenuation (MNA). Institutional controls are included in the cleanup options where appropriate to further reduce risk to human health and the environment.

Candidate remedial technologies best suited for each AOC were identified and screened for further evaluation in the development of cleanup options. Remedial technologies applicable to impacted groundwater and soil are identified in many sources, including compilations such as those discussed in the Web-based Federal Remediation Technology Roundtable, and screened for expected implementability, reliability, and relative cost. Physical conditions that limit or support particular technologies, and contaminant characteristics that limit the effectiveness or feasibility of a technology, were considered. Screening was consistent with MTCA evaluation criteria, as described in Section 11.1.3.

The implementability of a technology (i.e., the relative ease of installation and the time required to achieve a given level of performance) was assessed based on site conditions. Implementability considers: (1) the technology's constructability (i.e., ability to build, construct, or implement the technology under actual site conditions); (2) the time required to achieve the required level of performance as defined by the CULs and POCs; (3) whether the technology can be permitted; (4) the availability of the technology; and (5) other technology-specific factors.

The USEPA states that, to assess the reliability of prospective technologies, an evaluator should identify the level of technology development; its performance record; and the inherent construction, operation, and maintenance problems of each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated should be eliminated (USEPA, 1988).

The remedial technologies identified and screened for a cleanup in support of property-specific NFA determinations are briefly summarized below.

- **Soil.** The remedial technologies considered for impacted soil include: engineered capping, removal with off-site disposal, and biological and chemical remediation. Other technologies, such as soil vapor extraction, thermal treatment, and soil flushing, were considered but not retained for further evaluation because of difficult implementability and/or high long-term operation and maintenance requirements and costs.
- **Groundwater.** The remedial technologies considered for impacted groundwater include: containment (e.g., capping, hydraulic barriers), biological and chemical remediation, and MNA. Other technologies, such as physical and chemical treatment options (i.e., air sparging and vapor extraction), were considered but not retained for further evaluation because of potentially low cost effectiveness, difficulty of implementation, and/or high long-term operation and maintenance requirements and costs.

11.1.2 Potential Exposure Routes

Preliminary cleanup options were developed to address potentially complete exposure pathways for contamination present on the Property that might affect on- and/or off-Property receptors. The following potentially complete exposure routes were identified in the CSM (see Section 6.5 and Figure 6-2):

- Direct contact and incidental ingestion by on-Property receptors of chemically impacted, on-Property, near-surface soils and subsurface soils exposed during excavation
- Inhalation by both on- and off-Property receptors of wind-borne particulates or vapors emanating from chemically impacted, on-Property, shallow soil
- Dermal contact with, ingestion of, or inhalation by on-Property receptors of vapors emanating from chemically impacted, on-Property, shallow groundwater exposed during excavation

The remediation technologies that have been retained for development of the cleanup options include soil removal, off-site landfill disposal, containment via capping, in situ bioremediation and geochemical stabilization, groundwater circulating wells (GCW), MNA, and institutional controls. These cleanup options are described in more detail in Section 11.2.

11.1.3 Criteria for Cleanup Option Selection

The required criteria used to evaluate cleanup alternatives are defined in the MTCA regulation (WAC 173-340-360). The specific criteria are grouped into three sets in the decision-making process:

- Threshold requirements:
  - Protect human health and the environment.
  - Comply with cleanup standards (WAC 173-340-700 through 173-340-760).

- Comply with applicable state and federal laws (WAC 173-340-710).
- Provide for compliance monitoring (WAC 173-340-410 and 173-340-720 through 173-340-760).

- Other requirements:
  - Use permanent solutions to the maximum practicable extent. If a disproportionate cost analysis is used, then evaluate:
    * Protectiveness
    * Permanence
    * Cost
    * Effectiveness over the long term
    * Management of short-term risks
    * Technical and administrative implementability
  - Consideration of public concerns
- Restoration time frame

No immediate exposure concerns were identified at the Property; therefore, no interim actions are proposed at this time. The cleanup options for each AOC presented in the following sections were selected to meet MTCA threshold requirements, but were not evaluated with a disproportionate-cost analysis, which is outside the scope of this report. However, the evaluation criteria considered as part of a disproportionate-cost analysis were generally considered in the selection of cleanup options. Additionally, feasibility-study-level cost estimates for each AOC are provided in Tables 9-1 through 9-5.

11.2 Preliminary Cleanup Options

MFA combined appropriate technologies for soil and groundwater remediation in the development of preliminary cleanup options for each AOC. The details of each cleanup option are discussed below and preliminary treatment areas and well locations are shown in Figure 11-1. These cleanup options address IHSs in soil and groundwater on the Property and on a portion of the BNSF property (in AOCs 1 and 3) and are based on the preliminary understanding of the nature and extent of contamination, as described in the preliminary RI (Sections 1 through 10 of this report); infrastructure constraints; and conservative assumptions where data gaps exist. These preliminary cleanup options will be reviewed and revised, as needed, following the data gap investigation and before selection of the final cleanup options for each AOC.

The primary goal is to effectively eliminate existing exposure risks, as identified in Section 11.1.2. The most likely set of cleanup options (multiple options were included when appropriate) and associated costs are provided for each AOC.

It should be noted that the remedial treatments described below represent an aggressive approach and assume that treatment will be successful through a single event or application. The associated cost estimates reflect this assumption. All cleanup actions will be followed by a single post-treatment groundwater monitoring event, and then four quarters of groundwater monitoring. This is the minimum possible time frame required for monitoring. It is assumed that CULs will be attained within this time frame. All quantities described below were conservatively developed.

The provided cost estimates should be refined following completion of the data gap investigation. The costs described below do not include contingencies, which would include costs added to cover unknowns, unforeseen circumstances, or unanticipated conditions related to construction or installation of the remedial action. For budgeting purposes, MFA recommends that VSF include or add a contingency to each selected remedy before implementing that cleanup action (contingency is typically added as a percentage to the total cost of construction activities). As with any construction or cleanup project, contingencies are useful when encountering unanticipated conditions or events, and although the data gap investigation will help us further refine the selected remedy and associated costs, MFA recommends adding a contingency to the selected remedies to account for possible cost overruns.

11.2.1 Groundwater Monitoring

Under MTCA, all cleanup actions require compliance monitoring. Compliance groundwater monitoring includes protection monitoring, performance monitoring, and confirmational monitoring. Performance monitoring is required to evaluate the effectiveness of the treatment, whether it is an active treatment (e.g., in situ bioremediation) or a passive treatment (e.g., natural attenuation).

Groundwater monitoring will be conducted to meet the following objectives: (1) protection monitoring to ensure protection of human health and the environment during remedy implementation, (2) performance monitoring to evaluate the effectiveness of the treatment following implementation, and (3) confirmation monitoring in order to make a determination of compliance with CULs at POC monitoring wells located on the Property to obtain property-specific NFA determinations.

The cost estimate includes the following assumptions: monitoring will be conducted at 12 on-site monitoring wells (three existing and nine new wells) during one post-treatment monitoring event to be conducted a minimum of two months following treatment, and a minimum of four quarterly monitoring events to confirm attainment of CULs. Note that this designated number and frequency of groundwater monitoring events is based on the assumption that the treatment is effective and that additional rounds of treatment and monitoring will not be required. The preliminary remedial actions for each AOC include groundwater monitoring; therefore, the groundwater monitoring component for each AOC remedial action was combined for cost-estimating purposes in order to simplify the cost estimates and avoid duplicating costs.

A cost estimate for groundwater monitoring activities is provided in Table 9-1. The net present value (NPV) for the total cost of groundwater monitoring (including installation of new wells and sampling as described above) is approximately $99,000.

11.2.2 AOC 1: Auto Repair Shop

The preliminary cleanup options proposed for AOC 1 are in situ treatment (via in situ geochemical stabilization [ISGS] technology), GCWs, and soil excavation and off-site disposal. All options also include groundwater monitoring.

11.2.2.1 Option 1: In Situ Geochemical Stabilization and Groundwater Monitoring

In Situ Treatment. ISGS technology uses a permanganate-based solution to geochemically stabilize NAPL in the aquifer. Permanganate and other proprietary reagents are mixed into an aqueous solution that can be injected into the aquifer either through existing wells or by direct-push technology. As the solution migrates through the treatment area, it oxidizes contaminants, yielding partial mass removal. The ISGS solution also reacts with contaminants in the treated area, thereby coating NAPL surfaces with stable mineral precipitates that reduce mass flux. ISGS technology can represent an effective and cost-efficient alternative to conventional cement stabilization, since the aqueous solution can be injected into an aquifer where it will follow preferred flow paths.

It is recommended that additional characterization of the nature and distribution of subsurface NAPL and geology, installation of NAPL recovery and groundwater monitoring wells (costs are included in the groundwater monitoring estimate), and development of an implementation work plan be completed before implementation of this cleanup action. These activities would be followed by the ISGS reagent injection.

The treatment volume for ISGS was conservatively estimated in order to develop a preliminary cost estimate (see Figure 11-1). The estimated treatment area is approximately 25,300 square feet and the treatment zone depth is assumed to be the saturated thickness, which is approximately 10 feet. Therefore, the treatment volume is approximately 9,370 cubic yards.

The NPV for the total cost of designing and conducting an in situ treatment (ISGS) option is approximately $801,000.

Groundwater Monitoring. Groundwater monitoring, as described in Section 11.2.1, would be conducted to verify the performance of the in situ treatment.

11.2.2.2 Option 2: Groundwater Circulating Wells and Groundwater Monitoring

GCWs. GCWs provide subsurface remediation by creating a three-dimensional circulation pattern of the groundwater. GCWs treat groundwater and soil contaminated with hydrocarbons by pumping groundwater to the surface and aerating it, which removes most of the volatile vapors. The aerated groundwater is distributed over an area of contaminated soil and carries oxygen to the subsurface soil, promoting biodegradation. The combined process of biological treatment and physical extraction can reduce the time required to achieve remediation goals and lowers contaminant concentrations.

To be effective, GCWs require a well-defined contaminant plume to prevent the spreading or smearing of the contamination. Contaminant mobility can be increased as a result of increased water in the soil, and therefore additional monitoring wells may be necessary. Potential limitations and concerns include the following:

- Vapors that are stripped off must be evaluated (and may require treatment) before being discharged to the atmosphere.
- Subsurface heterogeneity can interfere with uniform flow in the aquifer around the well.
- GCW systems can sometimes cause smearing of NAPL, depending on site conditions.

The cost estimate includes the assumption that four GCWs will be installed in AOC 1, as shown in Figure 11-1. A cost estimate for installation and operation of the four GCWs is provided in Table 9-2. The NPV for the total cost of designing and implementing four GCWs, with annual operation and maintenance costs for ten years, is approximately $918,000.

Groundwater Monitoring. Groundwater monitoring would be conducted annually, in addition to the monitoring described in Section 11.2.1, to verify the performance of the GCWs and monitor for the potential mobilization of contaminants.

11.2.2.3 Option 3: Soil Excavation, Off-site Disposal, and In Situ Bioremediation Amended Backfill

Limited Soil Excavation. The soil excavation option would remove the contaminated soil in the AOC, to the north of the Property buildings and south of the BNSF rail line. Because of existing building structures on the Property and the railroad track (assuming a 10-foot offset) on BNSF's property, the amount of soil that can feasibly be removed is limited. As described below, shoring protection could be used to maximize the work area. Confirmational soil samples would be collected during the excavation to check or verify that all impacted soil is removed. If it is not feasible, because of infrastructure or access constraints, to remove all impacted soil through excavation, the backfill material will be mixed with an in situ bioremediation product and placed near the base of the excavation (as described below).

The cost estimate includes the assumption that the top foot of soil would be excavated at the identified areas in the AOC (see Figure 11-1), which includes approximately 1,912 cubic yards of soil. Excavation and staging of the soil would be conducted using best management practices, including sedimentation-control and erosion-prevention practices, such as installing silt fences at the perimeter of the work area and using a stabilized construction entrance and exit. Additionally, dust-suppression measures (such as wetting soil) would be implemented during construction activities to minimize any airborne transport of contaminated soil particulates from the site. Additional excavation, outside of what is included in this preliminary estimate, may be required. The need for additional excavation would be determined following additional characterization via confirmational soil sampling after or at the time of excavation. Following excavation, the area would be backfilled with clean fill material and subsequently repaved with asphalt.

Shoring Protection. Shoring protection likely will be required to maximize the footprint of the excavation area and prevent the sides from collapsing. This is necessary because of the close proximity of the existing buildings and railroad tracks in the AOC; is will not be possible to excavate the depth necessary while sloping back to the maximum allowable slope. Shoring will act as the support system to prevent movement of soil and foundations. For the purposes of this preliminary FS, it is assumed that some hydraulic shoring and sheeting will be required and that it will run for the length of the excavation adjacent to the railroad track offset and the building foundations.

Off-Site Disposal. The cost estimate includes the assumption that excavated contaminated soil will be disposed of as an F-listed waste.

In Situ Bioremediation Amended Backfill and Restoration. Following excavation, the area will be backfilled. Backfill material will be mixed with in situ bioremediation amendments to treat and reduce residual contamination beneath existing buildings or railroad tracks or in the groundwater. This will allow treatment of residual contamination even after backfilling is complete. For the purposes of this preliminary FS, it is assumed that an oxygen release compound will be mixed in with the clean backfill material in the smear zone of the AOC, and that only one application will be necessary to reduce any residual contaminants to below CULs.

Once excavation and backfilling have been completed, the Site will be restored. The AOC will be returned to a grade that is similar to current conditions, and the area will be paved with asphalt.

Estimated costs for this cleanup option are provided in Table 9-2. The NPV for the total cost to excavate source soil where possible and dispose of it off-site is approximately $1,047,000.

11.2.3 AOC 2: Former USTs

The possible cleanup options for AOC 2 include in situ treatment, MNA, groundwater monitoring, and institutional controls.

11.2.3.1 Option 1: Monitored Natural Attenuation, Groundwater Monitoring, and Institutional Controls

Monitored Natural Attenuation. MNA is a remediation methodology that employs naturally occurring physical, chemical, and biological processes that reduce the mobility and/or concentration of a contaminant. The purpose of monitoring is to verify that these processes are occurring. MNA is applicable in combination with other technologies in locations at the site where groundwater contamination would remain in place, and is a relatively low-cost remedial option.

The implementation and reliability of MNA depend on several factors:

- Contaminant characteristics
- Site chemical and biological mechanisms
- Site hydrogeologic conditions
- Contaminant source control
- Restoration time frame

Natural attenuation reduces the mobility and/or concentration of a contaminant through processes that destroy the contaminant or physically reduce contaminant concentration through hydrodynamic processes such as advection and diffusion. For these attenuation processes to be effective, the contaminant should have characteristics that allow it to degrade chemically (for example, through natural reductive or oxidative processes) or biologically (such as by microbial degradation), and site groundwater conditions supportive of these processes would be required.

Natural attenuation processes are typically slow, resulting in a long cleanup time frame. Thus, implementing MNA alone likely would not be sufficient to satisfy cleanup objectives. However, MNA would be applicable in combination with remedial technologies that reduce or eliminate the contaminant source but leave residual contamination in groundwater.

A cost estimate for the MNA option is provided in Table 9-3. The NPV for the total cost of implementing MNA for a length of 30 years is approximately $156,000.

Groundwater Monitoring. Groundwater monitoring will be conducted to monitor the effectiveness of natural attenuation, as described in Section 11.2.1 above.

Institutional Controls. A groundwater compliance monitoring plan will be developed and an environmental covenant placed on the affected properties to prevent the withdrawal and use of contaminated groundwater.

11.2.3.2 Option 2: In Situ Bioremediation and Groundwater Monitoring

In Situ Bioremediation. In situ biotreatment can be used to treat residual petroleum hydrocarbons. This remedial option involves the injection (or addition) of biostimulant amendments to the subsurface environment in order to increase bacterial populations that will metabolize the target contaminants (TPH). Petroleum hydrocarbon plumes are typically depleted of oxygen, limiting the ability of naturally occurring microorganisms to degrade the petroleum hydrocarbons.

The lateral extent, thickness of the affected zone, and total depth required to reach the contaminated areas strongly influence the selection of a remedial approach. The current target treatment area, at this preliminary stage of investigation, appears to be limited in horizontal and vertical extent, with low concentrations and limited potential for rebound; therefore, this area likely is an ideal site for direct injection and likely would have relatively low implementation costs.

Groundwater in areas with observed petroleum hydrocarbon and VOC concentrations above applicable cleanup levels could be treated in situ by one of two methods: bioremediation using Oxygen Release Compound Advanced® (ORC-A), or a combination of ORC-A and in situ chemical oxidation (ISCO) using PersulfOx®. Two options are provided because of the differences in cost and treatment time associated with a chosen method. Bioremediation is a lower-cost treatment, but nine to 12 months typically are required to achieve target concentrations. Therefore, a second alternative is provided: bioremediation with ISCO, which has a higher cost but is more effective over a shorter time frame—potentially on the order of weeks. A full ISCO treatment (no bioremediation) would provide the shortest time frame for achieving target concentrations, but was not considered because of the unreasonably high estimated cost (over $2 million for treatment alone). For cost-estimating purposes, it is assumed that the bioremediation option will be selected for this AOC.

Injection locations will be registered with Ecology's underground injection control program. A pilot study, including two rounds of groundwater monitoring (one pre-injection and one post-injection), will be conducted to evaluate the treatment's effectiveness before implementing the treatment on a full scale. If the pilot study results are favorable, treatment injections will be conducted on a full scale.

For cost-estimating purposes, three rounds of injection are assumed. A treatment area of 1,230 square feet in this AOC was assumed. A 10-foot-thick treatment depth was assumed for the entire treatment area. Injection treatment in areas outside the Property boundaries would require access permissions (i.e., public right-of-way area).

A cost estimate for the in situ treatment option is provided in Table 9-3. The NPV for the total cost of designing and conducting the in situ bioremediation treatment option is approximately $64,000.

Groundwater Monitoring. Groundwater monitoring would be conducted to verify the performance of the in situ treatment, as described in Section 11.2.1 above.

11.2.4 AOC 3: Former Coal-Storage Sheds

The possible cleanup options for AOC 3 include containment via capping with institutional controls and cap monitoring and maintenance, or excavation and off-site disposal.

11.2.4.1 Option 1: Capping with Institutional Controls and Cap Monitoring and Maintenance

Capping. The asphalt cap option would prevent human exposure to contaminated soil and protect against or prevent direct contact with rainfall runoff, and would not allow weathering or erosion of the contaminated soil beneath the cap. It is assumed that little to no excavation of contaminated soil would be required under this cleanup option.

This alternative assumes that, after preparation of the surface, coal-contaminated soil will be left in place; therefore, installation of a demarcation fabric before installation of the cap is included in the remedy. Demarcation fabric will provide a visual warning to future workers conducting work that requires penetration of the cap that potentially contaminated soil remains beneath the barrier. For cost-estimating purposes, it is assumed that an orange geotextile fabric will be used as a demarcation layer. Geotextile fabric is easy to install without damage by heavy equipment and it is permeable.

An asphalt pavement cap will cover on-Property areas in this AOC that require capping, as shown in Figure 11-1. The total area to be capped is approximately 52,400 square feet (5,820 square yards). In support of property-specific NFA determinations, the proposed cap area is limited to portions of this AOC that are within the boundaries of the Property. Based on the Ecology guidelines for property cleanups under the VCP (Ecology, 2015), "under certain conditions, Ecology may provide opinions on property-specific cleanups when the Property excludes right-of-way easements located on the perimeter of the tax parcels." Since the right-of-way is currently (and will remain) an impervious surface, MFA recommends requesting that Ecology exclude the right-of-way during cleanup. Additionally, MFA assumes that coal-impacted contamination will be addressed on only the Property for the purposes of pursuing property-specific NFA determinations. For cost-estimating purposes, it is assumed that the asphalt cap will be 9 inches thick and will be composed of a 3-inch-thick aggregate base course layer, 2 inches of asphalt base layer, 2 inches of an intermediate asphalt layer, and 2 inches of an asphalt wearing layer. A sealant will be applied to the surface of the asphalt. It is assumed that little to no excavation of contaminated soil will be required under this alternative.

Institutional Controls. Because impacted soil would be left in place, institutional controls would be required under this option. As described in the MTCA regulations (WAC 173-340-440), institutional controls are intended to limit or prohibit activities that may interfere with the integrity of a cleanup action and that would result in risk of exposure to contaminated soil at the Property. These institutional controls may include on-site features (e.g., signs), educational programs (e.g., worker training and public notices), legal mechanisms (e.g., land use restrictions, environmental covenant, zoning designations, and building permit requirements), maintenance requirements for engineered controls (e.g., containment caps), and financial assurances.

For cost-estimating purposes, it is assumed that an environmental covenant would be recorded against the Property and that worker training would be implemented.

Cap Monitoring and Maintenance. Annual inspections would be conducted to monitor the integrity of the cap. A long-term monitoring plan would be used to document long-term effectiveness and would conform to the general requirements of MTCA regulations (WAC 173-340-410). Maintenance and/or repairs would be conducted as necessary (i.e., the necessity determined through the annual inspections) to maintain the integrity of the cap.

Estimated costs for this cleanup option are provided in Table 9-4. The NPV for the total cost to construct an asphalt cap and perform cap maintenance and monitoring is approximately $814,000.

11.2.4.2 Option 2: Excavation with Off-Site Disposal

Excavation. The surface soil excavation option would remove the contaminated soil in the portion of the AOC within the Property boundary. Similar to the capping option, this option will exclude areas outside the Property boundaries that would require additional access permissions (i.e., public right-of-way area). The thin layer of coal impacting the soil would be excavated. Confirmational soil samples would be collected during the excavation to verify that all coal-impacted soil is removed.

For cost-estimating purposes, it is assumed that the top foot of soil will be excavated at the identified areas in the AOC (see Figure 11-1), which includes approximately 2,000 cubic yards of soil. Excavation and staging of the soil will be conducted using best management practices, including sedimentation-control and erosion-prevention practices, such as installing silt fences at the perimeter of the work area and using a stabilized construction entrance and exit. Additionally, dust-suppression measures (such as wetting soil) will be implemented during construction activities to minimize any airborne transport of contaminated soil particulates from the site. Additional excavation, outside of what is included in this preliminary estimate, may be required. The need for additional excavation will be determined following additional characterization via confirmational soil sampling after or at the time of excavation. Following excavation, the area will be backfilled with clean fill material and subsequently repaved with asphalt.

Off-Site Disposal. For cost-estimating purposes, it was assumed that excavated contaminated soil would be disposed of in the RCRA Subtitle D landfill as nonhazardous waste.

Estimated costs for this cleanup option are provided in Table 9-4. The NPV for the total cost to excavate near-surface soils and dispose of them off site is approximately $518,000.

11.2.5 AOC 4: Former Gasoline Station

The cleanup options for AOC 4 include the same technologies and methods described for AOC 2: in situ bioremediation, MNA, groundwater monitoring, and institutional controls.

11.2.5.1 Option 1: In Situ Bioremediation and Groundwater Monitoring

In Situ Bioremediation. For cost-estimating purposes, a single round of injections is assumed, followed by groundwater compliance monitoring as previously described. A treatment area of 2,640 square feet in this AOC was assumed for cost-estimating purposes; this area is shown on Figure 11-1. A 10-foot-thick treatment depth was assumed for the entire treatment area.

Estimated costs are provided in Table 9-5. The NPV for the total cost of designing and conducting the in situ bioremediation treatment option is approximately $100,000.

11.2.5.2 Option 2: Monitored Natural Attenuation, Groundwater Monitoring, and Institutional Controls

Monitored Natural Attenuation and Institutional Controls. MNA and institutional controls will be similar to those described for Option 1 (see Section 11.2.3.1).

12 RECOMMENDATIONS

Additional investigation is recommended to address the data gaps identified in Section 10, as well as to obtain additional data needed for final remedy selection and design.

It is recommended that further evaluation and analysis of the cleanup options be conducted before selection of a final remedy. MTCA regulation requires that all cleanup options be verified to meet threshold requirements, evaluated for a reasonable restoration time frame, and compared to the most practicable permanent solution as the baseline. This MTCA evaluation has not yet been completed. Following additional site characterization, remedial options can be further developed, compared with MTCA criteria, and analyzed to select a preferred alternative. A more detailed cost estimate can then be provided.

Based on the current understanding of site conditions, MFA recommends the following cleanup options for each AOC:

AOC 1: Auto Repair Shop—Soil excavation with in situ bioremediation-amended backfill and off-site disposal is the recommended cleanup option. Shoring or sheeting likely will be needed to maximize the amount of impacted soil material to be removed. Although this cleanup option is more costly than the ISGS and GCW options, there is a higher likelihood of greater chemical mass reduction and a shorter restoration time frame. Ideally, the bioremediation-amended backfill will address any contamination left in place beneath the buildings or railroad tracks. This cleanup option also includes quarterly groundwater monitoring to assess the treatment performance.

AOC 2: Former USTs—In situ bioremediation is the recommended cleanup option. It is cost effective, and if combined with the former gasoline station area (AOC 4), the costs could be reduced based on purchasing a larger quantity of amendment and saving on contractor mobilization and demobilization costs. This cleanup option also includes groundwater monitoring to verify the effectiveness of the treatment.

AOC 3: Former Coal-Storage Sheds—Excavation and off-site disposal is the recommended cleanup option. Assuming that coal material is limited to the upper few feet of soil, it would be more cost effective to excavate and backfill, rather than cap, the area.

AOC 4: Former Gasoline Station—MFA recommends performing an in situ bioremediation cleanup for this area, similar to the cleanup recommended for the former USTs AOC. It is a well-established method for treating petroleum hydrocarbon contamination in soil and groundwater, and can be very cost effective. This cleanup option also includes groundwater monitoring to verify the effectiveness of the treatment.

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

REFERENCES

ARI. 2014. Quality assurance manual. Analytical Resources, Inc., Tukwila, Washington.

AT. 2014. Eurofins Air Toxics helium shroud spec sheet. Eurofins Air Toxics, Inc., Folsom, California.

City. 2010. 2009 Stormwater management program. City of Sedro-Woolley, Public Works Department. March 16.

DEQ. 2010. Guidance for assessing and remediating vapor intrusion in buildings. Oregon Department of Environmental Quality, Environmental Cleanup Program, Portland, Oregon. March 25.

Ecology. 2009. Guidance for evaluating soil vapor intrusion in Washington State: investigation and remedial action. Washington State Department of Ecology Toxics Cleanup Program, Olympia, Washington. October.

Ecology. 2012. Washington State well log viewer on-line database. Washington State Department of Ecology. https://fortress.wa.gov/ecy/waterresources/map/WCLSWebMap/ (accessed December 13, 2012).

Ecology. 2015. Guidelines for property cleanups under the Voluntary Cleanup Program. Publication No. 08-09-044. Washington State Department of Ecology Toxics Cleanup Program, Olympia, Washington. Revised July 2015.

ITRC. 2007. Vapor intrusion pathway: a practical guidance. Interstate Technology & Regulatory Council, Washington, DC. January.

MFA. 2012a. Letter (re: proposal for site investigation and remediation activities, North Cascade Ford Property, Sedro-Woolley, WA) to B. Demorest, VSF Properties, LLC, from J. Darling, Maul Foster & Alongi, Inc., Bellingham, Washington. February 27.

MFA. 2012b. Letter (re: remedial investigation, 116 West Ferry Street, Sedro-Woolley, Washington) to L. Setchell, Helsell Fetterman LLP, from H. Hirsch and J. Maul, Maul Foster & Alongi, Inc., Bellingham, Washington. August 9.

MFA. 2012c. Letter (re: remedial investigation—change in scope of work, 116 West Ferry Street, Sedro-Woolley, Washington) to L. Setchell, Helsell Fetterman LLP, from H. Hirsch and J. Clary, Maul Foster & Alongi, Inc., Bellingham, Washington. November 16.

MFA. 2014. MFA work order authorization (re: Vern Sims Family, groundwater monitoring and IDW management, North Cascade Ford property, 116 West Ferry Street, Sedro-Woolley, Washington) to L. Setchell, Helsell Fetterman LLP, and VSF Properties, LLC, from J. Clary, Maul Foster & Alongi, Inc., Bellingham, Washington. February 10.

Sims, D., and V. Sims. 2013. Personal communication (re: history of North Cascade Ford property, Sedro-Woolley, Washington) with H. Good and J. Darling, Maul Foster & Alongi, Inc., Bellingham, Washington. January 14.

Straathoff. 2012. Personal communication (re: historical operations on the North Cascade Ford Property, Sedro-Woolley, WA) with H. Hirsch, Maul Foster & Alongi, Inc., Bellingham, WA. May 6.

USEPA. 1988. Guidance for conducting remedial investigations and feasibility studies under CERCLA. EPA/540/G-89/004, OSWER Directive 9355.3-01. October.

USEPA. 2004. USEPA contract laboratory program, national functional guidelines for inorganics data review. EPA 540/R-94/013. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. October.

USEPA. 2006. Assessment of vapor intrusion in homes near the Raymark superfund site using basement and sub-slab air samples. Document No. EPA/600/R-05/147. U.S. Environmental Protection Agency, Office of Research and Development. March.

USEPA. 2008. USEPA contract laboratory program, national functional guidelines for organics data review. EPA 540/R-08/01. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. June.

USEPA. 2014. USEPA contract laboratory program, national functional guidelines for Superfund organic methods data review. EPA 540/R-014/002. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. August.

Washington State Department of Natural Resources. 2000. Geologic map of the Bellingham 1:100,000 quadrangle, Washington. Open file report 2000-5.

WPUDA. 2007. Skagit PUD: providing water for a growing community. Connections. Vol. 1 No. 3:12-13 Washington Public Utility Districts Association. https://www.chelanpud.org/documents/Connections_Summer07.pdf.

TABLES

Table 4-1
Preliminary Remedial Investigation Summary
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Investigation Date	Activity	Sample Types Collected	Sample Locations
May 6 to May 8, 2012	Preliminary Subsurface Investigation	soil, reconnaissance groundwater	GP01 to GP09, MW01 to MW03
May 14 to 16, 2012	Spring Groundwater Monitoring Event	groundwater	MW01 to MW03
October 9, 2012	Fall Groundwater Monitoring Event	groundwater	MW01 to MW03
December 2 to 4, 2012	Additional Subsurface Investigation	soil, reconnaissance groundwater, soil vapor, indoor air	GP10 to GP32, SV01
April 10, 2014	Quarterly Groundwater Monitoring Event	groundwater	MW01 to MW03
June 18, 2014	Quarterly Groundwater Monitoring Event	groundwater	MW01 to MW03
September 10, 2014	Quarterly Groundwater Monitoring Event	groundwater	MW01 to MW03
December 10, 2014	Quarterly Groundwater Monitoring Event	groundwater	MW01 to MW03

NOTES:

GP = Geoprobe™.

MW = monitoring well.

SV = soil vapor.

Table 4-2
Sample and Analytical Summary
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

Features of Environmental Concern	Location ID	Sample ID	Sample Matrix	Sample Date	Sample Interval (ft bgs)	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	NWTPH-EPH	NWTPH-VPH	Metals (total)	Metals (dissolved)*	As and Cd (total)	Pb (total)	Pb (dissolved)	Fe (dissolved)**	VOCs	He	SVOCs	PAHs	PCBs	TOC
Active 500-gallon waste oil AST, former 10,000-gallon oil AST, waste oil spill, puddles with sheen	GP01	GP1-S-2.5	Soil	05/06/2012	1-3.4		X	X	X	X	X						X		X	X	X	
		GP1-W-7.5	Groundwater	05/06/2012	5-10		X	X				X					X		X	X	X	
	GP10	GP10-S-2.0	Soil	12/03/2012	1.3-2.8		X	X									X			X	X	X
		GP10-W-7.5	Groundwater	12/03/2012	5-10		X	X								X	X			X		
		GPDUP-W-7.5	Groundwater	12/03/2012	5-10		X	X								X	X			X		
		GP10-W-16.5	Groundwater	12/03/2012	14-19											X						
	GP12	GP12-S-12.0	Soil	12/02/2012	10-14																	X
		GP12-W-7.5	Groundwater	12/02/2012	5-10		X	X								X	X			X		
		GP12-W-25.5	Groundwater	12/02/2012	23-28			X								X	X			X		
	MW01	MW1-S-3.1	Soil	05/07/2012	1.2-5		X	X	X	X	X						X		X	X	X	
		MW1-W-8.5	Groundwater	05/15/2012	3.5-13.5		X	X				X					X		X	X		
		Field Duplicate	Groundwater	05/15/2012	3.5-13.5		X	X				X					X		X	X		
		MW01-GW-121009	Groundwater	10/09/2012	3.5-13.5			X												X		
		MW01	Groundwater	04/10/2014	3.5-13.5		X	X	X								X					
		MWDUP	Groundwater	04/10/2014	3.5-13.5		X	X									X					
		MW01-GW-140618	Groundwater	06/18/2014	3.5-13.5			X														
		FD-GW-140618	Groundwater	06/18/2014	3.5-13.5			X														
		MW01-GW-091014	Groundwater	09/10/2014	3.5-13.5			X														
		FD-091014	Groundwater	09/10/2014	3.5-13.5			X														
		MW01-GW-121014	Groundwater	12/10/2014	3.5-13.5			X														
		FD-121014	Groundwater	12/10/2014	3.5-13.5			X														
	SV1	SV01-121204	Soil Vapor	12/04/2012	NA												X	X				
	Washroom	Ambient-Indoor-24HR-121204	Indoor Air	12/04/2012	NA	*Not analyzed*																
Former steam- and fuel-powered electric plant	GP11	GP11-S-1.25	Soil	12/02/2012	0.5-2.0		X	X									X			X	X	
		GP11-S-7.5	Soil	12/02/2012	6.0-9.0																	X
		GP11-W-17.5	Groundwater	12/02/2012	15-20		X	X								X	X			X		
	GP13	GP13-S-1.6	Soil	12/02/2012	0.5-2.7		X	X									X			X	X	
Underground hydraulic hoists	GP02	GP2-S-1.1	Soil	05/06/2012	0-2.2	X					X											
		GP2-W-10	Groundwater	05/06/2012	5-15		X	X				X					X			X		
	GP03	GP3-S-2	Soil	05/06/2012	1.3-2.7	X					X											
Former automobile shop and oil house	GP04	GP4-W-10	Groundwater	05/07/2012	8-12		X	X				X					X			X		

Table 4-2
Sample and Analytical Summary
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

Features of Environmental Concern	Location ID	Sample ID	Sample Matrix	Sample Date	Sample Interval (ft bgs)	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	NWTPH-EPH	NWTPH-VPH	Metals (total)	Metals (dissolved)*	As and Cd (total)	Pb (total)	Pb (dissolved)	Fe (dissolved)**	VOCs	He	SVOCs	PAHs	PCBs	TOC
Former coal sheds	GP05	GP5-S-2	Soil	05/08/2012	1.5-2.6	X		X			X								X	X	X	
		GP5-S-5.6	Soil	05/08/2012	5-6.3	X					X									X		
		GP5-W-10	Groundwater	05/08/2012	8-12	X						X								X		
	GP09	GP9-S-2	Soil	05/08/2012	1.1-3	X					X									X		
		GP9-S-5.6	Soil	05/08/2012	5-6.2	X					X									X		
		GP9-W-10	Groundwater	05/08/2012	8-12	X						X								X		
	GP18	GP18-S-1.9	Soil	12/03/2012	1.4-2.4	*Not analyzed*																
	GP19	GP19-S-0.7	Soil	12/03/2012	0.3-3.1								X	X						X		
	GP20	GP20-S-1.5	Soil	12/03/2012	1.2-1.8	*Not analyzed*																
	GP21	GP21-S-1.4	Soil	12/03/2012	0.6-2.1	*Not analyzed*																
	GP22	GP22-S-1.8	Soil	12/03/2012	1.3-2.3								X	X						X		
	GP23	GP23-S-0.9	Soil	12/03/2012	0.4-1.4								X	X						X		
	GP24	GP24-S-0.8	Soil	12/03/2012	0.3-1.2								X	X						X		
	GP25	GP25-S-1.1	Soil	12/03/2012	0.6-1.6								X	X						X		
	GP26	GP26-S-1.7	Soil	12/04/2012	1.1-2.4								X	X						X		
	GP27	GP27-S-1.5	Soil	12/04/2012	1.0-1.9	*Not analyzed*																
	GP28	GP28-S-1.5	Soil	12/04/2012	0.5-2.5	*Not analyzed*																
	GP29	GP29-S-1.0	Soil	12/04/2012	0.5-1.5								X	X						X		
	GP30	GP30-S-0.9	Soil	12/04/2012	0.5-2.1								X	X						X		
	GP31	GP31-S-0.9	Soil	12/04/2012	0.4-1.3								X	X						X		
	GP32	GP32-S-1.2	Soil	12/04/2012	0.8-1.5								X	X						X		
Former gasoline station and dissolved-phase contamination from off-Property sources	GP06	GP6-S-2.9	Soil	05/08/2012	2.3-3.6		X			X				X			X					
		GP6-W-9	Groundwater	05/08/2012	7-11		X								X		X					
	GP07	GP7-S-2.9	Soil	05/08/2012	2.2-3.7		X			X				X			X					
		GP7-W-8	Groundwater	05/08/2012	6-10		X								X		X					
	GP08	GP8-S-2.8	Soil	05/08/2012	2.1-3.5		X			X				X			X					
		GP8-W-8	Groundwater	05/08/2012	6-10		X								X		X					
	GP14	GP14-W-7.5	Groundwater	12/03/2012	5-10			X														
	GP15	GP15-W-7.5	Groundwater	12/03/2012	5-10			X														
	MW03	MW3-S-1.9	Soil	05/07/2012	1.5-2.3		X			X				X			X					
		MW3-W-9	Groundwater	05/15/2012	4-14		X								X		X					
		MW03-GW-121009	Groundwater	10/09/2012	4-14		X	X									X			X		
		FD-GW-121009	Groundwater	10/09/2012	4-14		X	X									X			X		
		MW03	Groundwater	04/10/2014	4-14			X	X												X	
		MW03-GW-140618	Groundwater	06/18/2014	4-14			X														
		MW03-GW-091014	Groundwater	09/10/2014	4-14			X														
		MW03-GW-121014	Groundwater	12/10/2014	4-14			X														

Features of Environmental Concern	Location ID	Sample ID	Sample Matrix	Sample Date	Sample Interval (ft bgs)	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	NWTPH-EPH	NWTPH-VPH	Metals (total)	Metals (dissolved)*	As and Cd (total)	Pb (total)	Pb (dissolved)	Fe (dissolved)**	VOCs	He	SVOCs	PAHs	PCBs	TOC
Former gasoline and heating oil underground storage tanks and former 500-gallon waste oil aboveground storage tank	GP16	GP16-W-17.5	Groundwater	12/02/2012	15-20		X	X														
	GP17	GP17-S-9.5	Soil	12/03/2012	8-11			X														
		GP17-W-12.5	Groundwater	12/03/2012	10-15		X	X														
	MW02	MW2-S-2	Soil	05/07/2012	1.2-2.7	X					X											
		MW2-W-9	Groundwater	05/16/2012	4-14		X	X				X					X		X	X		
		MW02-GW-121009	Groundwater	10/09/2012	4-14			X														
		MW02	Groundwater	04/10/2014	4-14			X	X													
		MW02-GW-140618	Groundwater	06/18/2014	4-14			X														
		MW02-GW-091014	Groundwater	09/10/2014	4-14			X														
		MW02-GW-121014	Groundwater	12/10/2014	4-14			X														

NOTES:
As and Cd (total) = total arsenic and total cadmium by USEPA Method 200.8.
AST = aboveground storage tank.
Fe (dissolved) = dissolved iron by USEPA Method 6010C.
ft bgs = feet below ground surface.
He = helium by modified ASTM D-1946.
Metals (dissolved) = dissolved metals (arsenic, barium, cadmium, chromium, lead, selenium, and silver) by USEPA Method 200.8; mercury by USEPA Method SW7471A.
Metals (total) = total metals (arsenic, barium, cadmium, chromium, lead, selenium, and silver) by USEPA Method 200.8; mercury by USEPA Method SW7471A.
NA = not applicable.
NWTPH-Dx = diesel- and oil-range organics by the Northwest Total Petroleum Hydrocarbons Method.
NWTPH-EPH = extractable petroleum hydrocarbons by the Northwest Total Petroleum Hydrocarbons Method.
NWTPH-Gx = gasoline-range hydrocarbons by the Northwest Total Petroleum Hydrocarbons Method.
NWTPH-HCID = hydrocarbon identification by the Northwest Total Petroleum Hydrocarbons Method.
NWTPH-VPH = volatile petroleum hydrocarbons by the the Northwest Total Petroleum Hydrocarbons Method.
PAH = polycyclic aromatic hydrocarbon by USEPA Method SW8270D selective ion monitoring.
Pb (dissolved) = dissolved lead by USEPA Method 200.8.
Pb (total) = total lead by USEPA Method 200.8.
PCB = polychlorinated biphenyl by USEPA Method SW8082.
SVOC = semivolatile organic compound by USEPA Method SW8270D.
TOC = total organic carbon by USEPA SW9060M.
USEPA = U.S. Environmental Protection Agency.
VOC = volatile organic compound—full list by USEPA Method SW8260C (soil and groundwater samples) and selected list by USEPA Method TO-15 low-level (vapor sample).
*Samples were field-filtered using in-line 0.45-micron filters and were preserved with nitric acid.
**Samples were filtered and preserved at the laboratory. Because of the delay between sample collection and filtering/preservation, sample results are considered estimates.

Table 4-3
Water Level Data
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Location	MP Elevation (feet, NAVD 88)	Measurement Date	NAPL Thickness (feet)	Depth to Water (feet)	Corrected Depth to Water (feet)[a]	Groundwater Elevation (feet, NAVD 88)
MW01	56.17	05/15/2012	--	5.61	NA	50.56
		10/09/2012	--	9.87	NA	46.30
		12/03/2012	--	6.96	NA	49.21
		04/10/2014	NM[b]	NM[b]	NA	NM[b]
		06/17/2014	2.61[c]	6.01	NA[c]	50.16[c]
		06/18/2014	--	6.09	NA	50.08
		09/10/2014	NM[d]	7.74	NA	48.43
		12/10/2014	0.01[d]	6.09	6.08	50.09[a]
MW02	56.73	05/15/2012	--	6.65	NA	50.08
		10/09/2012	--	9.29	NA	47.44
		12/03/2012	--	8.45	NA	48.28
		04/10/2014	--	6.12	NA	50.61
		06/17/2014	--	6.96	NA	49.77
		06/18/2014	--	6.98	NA	49.75
		09/10/2014	--	8.37	NA	48.36
		12/10/2014	--	7.11	NA	49.62
MW03	56.27	05/15/2012	--	5.40	NA	50.87
		10/09/2012	--	8.11	NA	48.16
		12/03/2012	--	5.28	NA	50.99
		04/10/2014	--	5.00	NA	51.27
		06/17/2014	--	5.66	NA	50.61
		06/18/2014	--	5.87	NA	50.40
		09/10/2014	--	6.94	NA	49.33
		12/10/2014	--	5.10	NA	51.17

NOTES:

-- = NAPL not observed; therefore, NAPL thickness was not measured.

MP = measuring point.

NA = not applicable.

NAPL = nonaqueous-phase liquid.

NM = not measured.

NAVD 88 = North American Vertical Datum of 1988.

[a]Water level corrected for presence of NAPL, using an assumed product density of 0.8 gram per cubic centimeter.

[b]NAPL was observed, but an interface probe was not available to measure a NAPL thickness and water level.

[c]This measurement is believed to be erroneous and due to NAPL coating the probe tip. Observations indicate that an extractable and measurable quantity of NAPL was not present; therefore, the water level was not corrected for the presence of NAPL.

[d]NAPL was observed on probe and tubing, but an extractable and/or measurable quantity was not present.

Table 4-4
Water Quality Data
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

Location ID	Screened Interval (ft bgs)	Date	Time	pH (SU)	Temperature (deg. C)	Conductivity (us/cm)	Turbidity (NTU)	ORP (mV)	DO (mg/L)
GP01	5-10	05/06/2012	11:30	6.59	14.63	1303	16.8	NR	0.03*
GP02	5-15	05/06/2012	14:00	6.56	16.81	332	123.4	32.4	0.03*
GP04	8-12	05/07/2012	10:00	6.40	14.70	321	131.3	221.3	0.04*
GP05	8-12	05/08/2012	8:30	6.62	13.12	515	9.3	151*	0.04*
GP06	7-11	05/08/2012	11:00	6.41	14.11	158	986	103.5*	0.03*
GP07	6-10	05/08/2012	12:15	6.15	13.26	275	330	101.9*	0.03*
GP08	6-10	05/08/2012	13:30	6.23	13.41	175	110.7	86.7*	0.03*
GP09	8-12	05/08/2012	16:00	6.08	12.72	222	31.9	138.5	0.03*
GP10	5-10	12/03/2012	10:22	9.18	13.50	363	129.6	-11.9	1.90
	14-19	12/03/2012	11:16	7.04	12.45	391	96.4	-85.0	1.20**
GP11	6-11	12/02/2012	14:35	6.86	14.13	984	203	-106.0	0.33
GP12	5-10	12/02/2012	12:00	6.67	10.90	222	722	40.8	3.58
	23-28	12/02/2012	11:00	6.90	11.20	412	701	-10.5	2.33
GP14	5-10	12/03/2012	12:07	6.32	12.06	209	864	64.5	5.05
GP15	5-10	12/03/2012	12:42	6.36	12.56	160	960	78.7	2.82
GP16	15-20	12/02/2012	16:12	6.94	14.20	362	448	-42.2	0.23
GP17	10-15	12/03/2012	9:30	6.34	12.89	338	725	2.5	1.85
MW01	3.5-13.5	05/15/2012	12:27	6.37	12.17	493	0.71	NR	6.83*
		10/09/2012	14:09	6.20	14.29	515	3.68	-84.1	0.06*
		04/10/2014	11:48	6.57	10.9	465	6.99	-17.3	0.09
		06/18/2014	11:36	6.22	14.23	499	2.17	-60.3	0.22
		09/10/2014	10:49	5.82	17.04	578	3.22	-16	0.14
		12/10/2014	12:36	5.73	13.37	562	2.76	-45.9	0.24
MW02	4-14	05/16/2012	13:28	6.27	15.03	282	4.60	NR	0.42*
		10/09/2012	10:50	6.19	16.82	280	1.37	-58.9	0.12*
		04/10/2014	14:15	6.58	14.94	287	8.37**	-67.9	0.03
		06/18/2014	13:35	6.19	15.5	230	1.46	-28	0.83
		09/10/2014	12:28	5.88	21.32	230	2.02	40	0.09
		12/10/2014	14:16	5.81	14.81	184	3.33	61.8	0.23
MW03	4-14	05/15/2012	14:50	6.29	13.36	204	3.16	NR	4.01*
		10/09/2012	12:03	6.14	16.30	193	1.91	-56.8	0.08*
		04/10/2014	15:58	6.32	12.58	404	11.09**	18.4	0.46
		06/18/2014	14:50	6.18	13.76	190	1.37	21.4	0.88
		09/10/2014	14:36	5.88	20.4	195	0.92	16.1	0.42
		12/10/2014	15:43	5.84	13.42	228	13.59	45.8	0.21

Table 4-4
Water Quality Data
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

NOTES:
deg. C = degrees Celsius.
DO = dissolved oxygen.
ft bgs = feet below ground surface.
mg/L = milligrams per liter.
mV = millivolts.
NR = not recorded.
NTU = nephelometric turbidity units.
ORP = oxidation-reduction potential.
SU = standard units.
us/cm = microsiemens per centimeter.
*DO converted to mg/L from a percent measurement.
**Measurement not stable; dropping.

Table 5-1
Soil Analytical Results
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

		Location	GP01	GP02	GP03	GP05	GP05	GP06	GP07	GP08	GP09	GP09
		Sample Name	GP1-S-2.5	GP2-S-1.1	GP3-S-2	GP5-S-2	GP5-S-5.6	GP6-S-2.9	GP7-S-2.9	GP8-S-2.8	GP9-S-2	GP9-S-5.6
		Sample Date	05/06/2012	05/06/2012	05/06/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012
		Sample Depth Interval (ft bgs)	1-3.4	0-2.2	1.3-2.7	1.5-2.6	5-6.3	2.3-3.6	2.2-3.7	2.1-3.5	1.1-3	5-6.2
Analyte	Soil CUL (mg/kg)	CUL Source										
Metals (mg/kg)												
Arsenic	20	MTCA A	**2.5**	**3.1**	**2.2**	**26.4**	**1.9**	--	--	--	**3.5**	**8.6**
Barium	16000	B NCAR	**36.9**	**102**	**40.1**	**681**	**36.7**	--	--	--	**386**	**66.8**
Cadmium	2	MTCA A	**0.4**	**0.2**	0.1 U	**1.9**	0.1 U	--	--	--	**0.2**	0.1 U
Chromium	2000	MTCA A	**13.6**	**13.5**	**13**	**33**	**10.3**	--	--	--	**13.2**	**33.2**
Lead	250	MTCA A	**28.8**	**163**	**49**	**452**	**2**	**2.1**	**0.9**	**1.1**	**16.1**	**14.7**
Mercury	2	MTCA A	0.03 U	**0.07**	**0.17**	**0.39**	0.02 U	--	--	--	**0.03**	**0.05**
Selenium	400	MTCA B NCAR	0.6 U	0.6 U	0.6 U	0.7 U	0.7 U	--	--	--	0.7 U	0.7 U
Silver	400	MTCA B NCAR	0.2 U	0.2 U	0.2 U	**0.3**	0.3 U	--	--	--	0.3 U	0.3 U
PCBs (mg/kg)												
Aroclor 1016	1	MTCA A	0.062 U	--	--	0.032 U	--	--	--	--	--	--
Aroclor 1221	1	MTCA A	0.062 U	--	--	0.032 U	--	--	--	--	--	--
Aroclor 1232	1	MTCA A	0.062 U	--	--	0.032 U	--	--	--	--	--	--
Aroclor 1242	1	MTCA A	0.062 U	--	--	0.032 U	--	--	--	--	--	--
Aroclor 1248	1	MTCA A	**0.46**	--	--	0.032 U	--	--	--	--	--	--
Aroclor 1254	1	MTCA A	**0.31**	--	--	**0.045**	--	--	--	--	--	--
Aroclor 1260	1	MTCA A	**0.5**	--	--	**0.035**	--	--	--	--	--	--
VOCs (mg/kg)												
1,1,1,2-Tetrachloroethane	38	MTCA B CAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
1,1,1-Trichloroethane	2	MTCA A	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
1,1,2,2-Tetrachloroethane	5	MTCA B CAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
1,1,2-Trichloroethane	18	MTCA B CAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
1,1-Dichloroethane	16000	B NCAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
1,1-Dichloroethene	4000	B NCAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
1,1-Dichloropropene	NV	NV	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
1,2,3-Trichlorobenzene	NV	NV	0.41 U	--	--	--	--	0.0056 U	0.0054 U	0.0063 U	--	--
1,2,3-Trichloropropane	0.033	MTCA B CAR	0.16 U	--	--	--	--	0.0022 U	0.0022 U	0.0025 U	--	--
1,2,4-Trichlorobenzene	35	MTCA B CAR	0.41 U	--	--	--	--	0.0056 U	0.0054 U	0.0063 U	--	--
1,2,4-Trimethylbenzene	NV	NV	**0.27**	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
1,2-Dibromo-3-chloropropane	1.3	MTCA B CAR	0.41 U	--	--	--	--	0.0056 U	0.0054 U	0.0063 U	--	--
1,2-Dibromoethane	0.005	MTCA A	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
1,2-Dichlorobenzene	7200	B NCAR	**0.091**	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
1,2-Dichloroethane	11	MTCA B CAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
1,2-Dichloropropane	NV	NV	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
1,3,5-Trimethylbenzene	800	MTCA B NCAR	**0.1**	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
1,3-Dichlorobenzene	NV	NV	**0.14**	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
1,3-Dichloropropane	NV	NV	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--

		Location	GP01	GP02	GP03	GP05	GP05	GP06	GP07	GP08	GP09	GP09
		Sample Name	GP1-S-2.5	GP2-S-1.1	GP3-S-2	GP5-S-2	GP5-S-5.6	GP6-S-2.9	GP7-S-2.9	GP8-S-2.8	GP9-S-2	GP9-S-5.6
		Sample Date	05/06/2012	05/06/2012	05/06/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012
		Sample Depth Interval (ft bgs)	1-3.4	0-2.2	1.3-2.7	1.5-2.6	5-6.3	2.3-3.6	2.2-3.7	2.1-3.5	1.1-3	5-6.2
Analyte	Soil CUL (mg/kg)	CUL Source										
1,4-Dichlorobenzene	NV	NV	**1.8**	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
2,2-Dichloropropane	NV	NV	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
2-Butanone	48000	MTCA B NCAR	0.41 U	--	--	--	--	0.0056 U	0.0054 U	0.0063 U	--	--
2-Chloroethylvinyl ether	NV	NV	0.41 U	--	--	--	--	0.0056 U	0.0054 U	0.0063 U	--	--
2-Chlorotoluene	1600	B NCAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
2-Hexanone	NV	NV	0.41 U	--	--	--	--	0.0056 U	0.0054 U	0.0063 U	--	--
4-Chlorotoluene	NV	NV	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
4-Isopropyltoluene	NV	NV	**0.41**	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
4-Methyl-2-pentanone	6400	MTCA B NCAR	0.41 U	--	--	--	--	0.0056 U	0.0054 U	0.0063 U	--	--
Acetone	72000	B NCAR	**0.35** J	--	--	--	--	**0.037**	**0.082**	**0.045**	--	--
Acrolein	40	B NCAR	4.1 U	--	--	--	--	0.056 U	0.054 U	0.063 U	--	--
Acrylonitrile	1.9	MTCA B CAR	0.41 U	--	--	--	--	0.0056 U	0.0054 U	0.0063 U	--	--
Benzene	0.03	MTCA A	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Bromobenzene	NV	NV	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Bromodichloromethane	16	MTCA B CAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
bromoethane	NV	NV	0.16 U	--	--	--	--	0.0022 U	0.0022 U	0.0025 U	--	--
Bromoform	130	MTCA B CAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Bromomethane	110	B NCAR	**0.034** J	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Carbon disulfide	8000	B NCAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Carbon tetrachloride	14	MTCA B CAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Chlorobenzene	1600	B NCAR	**2.9**	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Chlorobromomethane	NV	NV	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Chloroethane	NV	NV	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Chloroform	800	B NCAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Chloromethane	NV	NV	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
cis-1,2-Dichloroethene	160	B NCAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
cis-1,3-Dichloropropene	NV	NV	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Dibromochloromethane	12	MTCA B CAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Dibromomethane	800	MTCA B NCAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Ethylbenzene	6	MTCA A	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Freon 113	2400000	MTCA B NCAR	0.16 U	--	--	--	--	0.0022 U	0.0022 U	0.0025 U	--	--
Hexachlorobutadiene	13	MTCA B CAR	0.41 U	--	--	--	--	0.0056 U	0.0054 U	0.0063 U	--	--
Isopropylbenzene	8000	B NCAR	**0.1**	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
m,p-Xylene	9	MTCA A	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Methyl iodide	NV	NV	**0.042** J	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Methylene chloride	0.02	MTCA A	**0.2**	--	--	--	--	**0.0042**	**0.0032**	**0.0036**	--	--
Naphthalene	5	MTCA A	**0.14** J	--	--	--	--	0.0056 U	0.0054 U	0.0063 U	--	--

		Location	GP01	GP02	GP03	GP05	GP05	GP06	GP07	GP08	GP09	GP09
		Sample Name	GP1-S-2.5	GP2-S-1.1	GP3-S-2	GP5-S-2	GP5-S-5.6	GP6-S-2.9	GP7-S-2.9	GP8-S-2.8	GP9-S-2	GP9-S-5.6
		Sample Date	05/06/2012	05/06/2012	05/06/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012
		Sample Depth Interval (ft bgs)	1-3.4	0-2.2	1.3-2.7	1.5-2.6	5-6.3	2.3-3.6	2.2-3.7	2.1-3.5	1.1-3	5-6.2
Analyte	Soil CUL (mg/kg)	CUL Source										
n-Butylbenzene	NV	NV	**0.51**	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
n-Propylbenzene	8000	MTCA B NCAR	**0.35**	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
o-Xylene	16000	MTCA B NCAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
sec-Butylbenzene	NV	NV	**0.39**	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Styrene	16000	MTCA B NCAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
tert-Butylbenzene	NV	NV	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Tetrachloroethene	0.05	MTCA A	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Toluene	7	MTCA A	0.082 U	--	--	--	--	**0.0008** J	0.0011 U	**0.001** J	--	--
trans-1,2-dichloroethene	1600	B NCAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
trans-1,3-Dichloropropene	NV	NV	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
trans-1,4-Dichloro-2-butene	NV	NV	0.41 U	--	--	--	--	0.0056 U	0.0054 U	0.0063 U	--	--
Trichloroethene	0.03	MTCA A	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Trichlorofluoromethane	NV	NV	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
Vinyl Acetate	80000	MTCA B NCAR	0.41 U	--	--	--	--	0.0056 U	0.0054 U	0.0063 U	--	--
Vinyl chloride	0.67	MTCA B CAR	0.082 U	--	--	--	--	0.0011 U	0.0011 U	0.0013 U	--	--
SVOCs by 8270 (mg/kg)												
1,2,4-Trichlorobenzene	35	MTCA B CAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
1,2-Dichlorobenzene	7200	B NCAR	**0.58** J	--	--	0.3 U	--	--	--	--	--	--
1,3-Dichlorobenzene	NV	NV	**0.7** J	--	--	0.3 U	--	--	--	--	--	--
1,4-Dichlorobenzene	NV	NV	**12**	--	--	0.3 U	--	--	--	--	--	--
1-Methylnaphthalene	35	MTCA B CAR	**8.6**	--	--	**1.4**	--	--	--	--	--	--
2,4,5-Trichlorophenol	8000	MTCA B NCAR	4.6 U	--	--	1.5 U	--	--	--	--	--	--
2,4,6-Trichlorophenol	91	MTCA B CAR	4.6 U	--	--	1.5 U	--	--	--	--	--	--
2,4-Dichlorophenol	240	B NCAR	4.6 U	--	--	1.5 U	--	--	--	--	--	--
2,4-Dimethylphenol	1600	B NCAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
2,4-Dinitrophenol	160	B NCAR	9.3 U	--	--	3 U	--	--	--	--	--	--
2,4-Dinitrotoluene	160	B NCAR	4.6 U	--	--	1.5 U	--	--	--	--	--	--
2,6-Dinitrotoluene	80	B NCAR	4.6 U	--	--	1.5 U	--	--	--	--	--	--
2-Chloronaphthalene	6400	B NCAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
2-Chlorophenol	400	B NCAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
2-Methylnaphthalene	320	MTCA B NCAR	**10**	--	--	**1.4**	--	--	--	--	--	--
2-Methylphenol	4000	B NCAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
2-Nitroaniline	800	MTCA B NCAR	4.6 U	--	--	1.5 U	--	--	--	--	--	--
2-Nitrophenol	NV	NV	0.93 U	--	--	0.3 U	--	--	--	--	--	--
3,3-Dichlorobenzidine	2.2	MTCA B CAR	4.6 U	--	--	1.5 U	--	--	--	--	--	--
3-Nitroaniline	NV	NV	4.6 U	--	--	1.5 U	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	NV	NV	9.3 U	--	--	3 U	--	--	--	--	--	--

		Location	GP01	GP02	GP03	GP05	GP05	GP06	GP07	GP08	GP09	GP09
		Sample Name	GP1-S-2.5	GP2-S-1.1	GP3-S-2	GP5-S-2	GP5-S-5.6	GP6-S-2.9	GP7-S-2.9	GP8-S-2.8	GP9-S-2	GP9-S-5.6
		Sample Date	05/06/2012	05/06/2012	05/06/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012
		Sample Depth Interval (ft bgs)	1-3.4	0-2.2	1.3-2.7	1.5-2.6	5-6.3	2.3-3.6	2.2-3.7	2.1-3.5	1.1-3	5-6.2
Analyte	Soil CUL (mg/kg)	CUL Source										
4-Bromophenylphenyl ether	NV	NV	0.93 U	--	--	0.3 U	--	--	--	--	--	--
4-Chloro-3-methylphenol	NV	NV	4.6 U	--	--	1.5 U	--	--	--	--	--	--
4-Chloroaniline	5	MTCA B CAR	4.6 U	--	--	1.5 U	--	--	--	--	--	--
4-Chlorophenylphenyl ether	NV	NV	0.93 U	--	--	0.3 U	--	--	--	--	--	--
4-Methylphenol	400	B NCAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
4-Nitroaniline	NV	NV	4.6 U	--	--	1.5 U	--	--	--	--	--	--
4-Nitrophenol	NV	NV	4.6 U	--	--	1.5 U	--	--	--	--	--	--
Acenaphthene	4800	B NCAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Acenaphthylene	1	B NCAR	0.93 U	--	--	**0.54**	--	--	--	--	--	--
Anthracene	24000	B NCAR	0.93 U	--	--	**1.2**	--	--	--	--	--	--
Benzo(a)anthracene	1.4	MTCA B CAR	0.93 U	--	--	**7**	--	--	--	--	--	--
Benzo(a)pyrene	0.1	MTCA A	0.93 U	--	--	**8.2**	--	--	--	--	--	--
Benzo(ghi)perylene	NV	NV	0.93 U	--	--	**6**	--	--	--	--	--	--
Benzoic acid	320000	B NCAR	9.3 U	--	--	3 U	--	--	--	--	--	--
Benzyl alcohol	8000	B NCAR	4.6 U	--	--	1.5 U	--	--	--	--	--	--
Bis(2-chloro-1-methylethyl) ether	14	MTCA B CAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	NV	NV	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Bis(2-chloroethyl)ether	0.91	MTCA B CAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	71	MTCA B CAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Butylbenzylphthalate	530	MTCA B CAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Carbazole	NV	NV	0.93 U	--	--	**0.85**	--	--	--	--	--	--
Chrysene	140	MTCA B CAR	0.93 U	--	--	**7.3**	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	MTCA B CAR	0.93 U	--	--	**2.3**	--	--	--	--	--	--
Dibenzofuran	80	B NCAR	0.93 U	--	--	**0.4**	--	--	--	--	--	--
Diethylphthalate	64000	B NCAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Dimethyl phthalate	NV	NV	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Di-n-butyl phthalate	8000	B NCAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Di-n-octyl phthalate	NV	NV	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Fluoranthene	3200	B NCAR	0.93 U	--	--	**16**	--	--	--	--	--	--
Fluorene	3200	B NCAR	**1.2**	--	--	0.3 U	--	--	--	--	--	--
Hexachlorobenzene	0.63	MTCA B CAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Hexachlorobutadiene	13	MTCA B CAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Hexachlorocyclopentadiene	480	MTCA B NCAR	4.6 U	--	--	1.5 U	--	--	--	--	--	--
Hexachloroethane	71	MTCA B CAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	1.4	MTCA B CAR	0.93 U	--	--	**5.3**	--	--	--	--	--	--
Isophorone	1100	MTCA B CAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Naphthalene	5	MTCA A	**1.2**	--	--	**1.5**	--	--	--	--	--	--

		Location	GP01	GP02	GP03	GP05	GP05	GP06	GP07	GP08	GP09	GP09
		Sample Name	GP1-S-2.5	GP2-S-1.1	GP3-S-2	GP5-S-2	GP5-S-5.6	GP6-S-2.9	GP7-S-2.9	GP8-S-2.8	GP9-S-2	GP9-S-5.6
		Sample Date	05/06/2012	05/06/2012	05/06/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012
		Sample Depth Interval (ft bgs)	1-3.4	0-2.2	1.3-2.7	1.5-2.6	5-6.3	2.3-3.6	2.2-3.7	2.1-3.5	1.1-3	5-6.2
Analyte	Soil CUL (mg/kg)	CUL Source										
Nitrobenzene	160	MTCA B NCAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
N-Nitrosodiphenylamine	200	MTCA B CAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
N-Nitrosodipropylamine	NV	NV	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Pentachlorophenol	2.5	MTCA B CAR	4.6 U	--	--	1.5 U	--	--	--	--	--	--
Phenanthrene	NV	NV	**1.9**	--	--	**5.5**	--	--	--	--	--	--
Phenol	24000	MTCA B NCAR	0.93 U	--	--	0.3 U	--	--	--	--	--	--
Pyrene	2400	MTCA B NCAR	0.93 U	--	--	**10**	--	--	--	--	--	--
Total Benzofluoranthenes	NV	NV	0.93 U	--	--	**13**	--	--	--	--	--	--
SVOCs by 8270 SIM (mg/kg)												
1-Methylnaphthalene	35	MTCA B CAR	**7.3**	--	--	**1.9**	**0.0025** J	--	--	--	**0.8**	**0.0037** J
2-Methylnaphthalene	320	MTCA B NCAR	**11**	--	--	**2.4**	**0.0026** J	--	--	--	**0.78**	**0.0032** J
Acenaphthene	4800	B NCAR	**0.51**	--	--	0.097 U	0.0048 U	--	--	--	0.0048 U	0.0049 U
Acenaphthylene	1	B NCAR	0.25 U	--	--	**0.43**	0.0048 U	--	--	--	0.0048 U	0.0049 U
Anthracene	24000	B NCAR	**0.19** J	--	--	**1.1**	0.0048 U	--	--	--	**0.051**	0.0049 U
Benzo(a)anthracene	1.4	MTCA B CAR	**0.15** J	--	--	**7.4**	**0.0025** J	--	--	--	**0.069**	0.0049 U
Benzo(a)pyrene	0.1	MTCA A	0.25 U	--	--	**8.7**	**0.0024** J	--	--	--	**0.054**	0.0049 U
Benzo(ghi)perylene	NV	NV	0.25 U	--	--	**6.4**	**0.0032** J	--	--	--	**0.026**	0.0049 U
Chrysene	140	MTCA B CAR	**0.34**	--	--	**7.7**	**0.0025** J	--	--	--	**0.13**	0.0049 U
Dibenzo(a,h)anthracene	0.14	MTCA B CAR	0.25 U	--	--	**1.5**	0.0048 U	--	--	--	**0.012**	0.0049 U
Dibenzofuran	80	B NCAR	**0.62**	--	--	**0.57**	0.0048 U	--	--	--	**0.19**	0.0049 U
Fluoranthene	3200	B NCAR	**0.53**	--	--	**16**	**0.004** J	--	--	--	**0.088**	0.0049 U
Fluorene	3200	B NCAR	**1.2**	--	--	**0.23**	0.0048 U	--	--	--	**0.015**	0.0049 U
Indeno(1,2,3-cd)pyrene	1.4	MTCA B CAR	0.25 U	--	--	**5.6**	0.0048 U	--	--	--	**0.018**	0.0049 U
Naphthalene	5	MTCA A	**1.2**	--	--	**1.9**	**0.0025** J	--	--	--	**0.38**	**0.0027** J
Phenanthrene	NV	NV	**1.9**	--	--	**4.8**	0.0048 U	--	--	--	**0.53**	**0.0029** J
Pyrene	2400	MTCA B NCAR	**0.59**	--	--	**15**	**0.0044** J	--	--	--	**0.099**	0.0049 U
Total Benzofluoranthenes	NV	NV	0.25 U	--	--	**14**	0.0048 U	--	--	--	**0.067**	0.0049 U
Hydrocarbon Identification (Presence/Absence)												
Diesel-Range TPH	NV	NV	--	ND	ND	DETECTED	ND	--	--	--	ND	ND
Gasoline-Range TPH	NV	NV	--	ND	ND	ND	ND	--	--	--	ND	ND
Motor-Oil Range	NV	NV	--	ND	ND	DETECTED	ND	--	--	--	ND	ND
Total Petroleum Hydrocarbons (mg/kg)												
Diesel-Range TPH	2000	MTCA A	**4000**	--	--	**460**	--	--	--	--	--	--
Motor-Oil Range TPH	2000	MTCA A	**10000**	--	--	**710**	--	--	--	--	--	--
Gasoline-Range TPH	30	MTCA A	**1400**	--	--	--	--	12 U	8.1 U	8.3 U	--	--

		Location	GP01	GP02	GP03	GP05	GP05	GP06	GP07	GP08	GP09	GP09
		Sample Name	GP1-S-2.5	GP2-S-1.1	GP3-S-2	GP5-S-2	GP5-S-5.6	GP6-S-2.9	GP7-S-2.9	GP8-S-2.8	GP9-S-2	GP9-S-5.6
		Sample Date	05/06/2012	05/06/2012	05/06/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012
		Sample Depth Interval (ft bgs)	1-3.4	0-2.2	1.3-2.7	1.5-2.6	5-6.3	2.3-3.6	2.2-3.7	2.1-3.5	1.1-3	5-6.2
Analyte	Soil CUL (mg/kg)	CUL Source										
Total Organic Carbon (%)												
Total Organic Carbon	NV	NV	--	--	--	--	--	--	--	--	--	--
Calculated Totals (mg/kg)												
cPAH TEQ by 8270	0.1	MTCA A	ND	--	--	**11**	--	--	--	--	--	--
cPAH TEQ by 8270 SIM	0.1	MTCA A	**0.19**	--	--	**12**	**0.0034** J	--	--	--	**0.072**	ND
Heavy Oils	2000	MTCA A	**14000**	--	--	**1170**	--	--	--	--	--	--
Total Naphthalenes by 8270	5	MTCA A	**20**	--	--	**4**	--	--	--	--	--	--
Total Naphthalenes by 8270 SIM	5	MTCA A	**20**	--	--	**6.2**	**0.0076** J	--	--	--	**2.0**	**0.0096** J
Total PCBs	1	MTCA A	**1.4**	--	--	**0.16**	--	--	--	--	--	--
Total Xylenes	9	MTCA A	ND	--	--	--	--	ND	ND	ND	--	--
EPH (mg/kg)												
Aliphatic >C8-C10	NV	NV	**880**	--	--	--	--	--	--	--	--	--
Aliphatic >C10-C12	NV	NV	**1400**	--	--	--	--	--	--	--	--	--
Aliphatic >C12-C16	NV	NV	**930**	--	--	--	--	--	--	--	--	--
Aliphatic >C16-C21	NV	NV	**1400**	--	--	--	--	--	--	--	--	--
Aliphatic >C21-C34	NV	NV	**8800**	--	--	--	--	--	--	--	--	--
Aromatic >C8-C10	NV	NV	**81**	--	--	--	--	--	--	--	--	--
Aromatic >C10-C12	NV	NV	**200**	--	--	--	--	--	--	--	--	--
Aromatic >C12-C16	NV	NV	**220**	--	--	--	--	--	--	--	--	--
Aromatic >C16-C21	NV	NV	**490**	--	--	--	--	--	--	--	--	--
Aromatic >C21-C34	NV	NV	**1300**	--	--	--	--	--	--	--	--	--
VPH (mg/kg)												
Aliphatic C5-C6	NV	NV	14 U	--	--	--	--	16 U	14 U	15 U	--	--
Aliphatic >C6-C8	NV	NV	14 U	--	--	--	--	16 U	14 U	15 U	--	--
Aliphatic >C8-C10	NV	NV	14 U	--	--	--	--	16 U	14 U	15 U	--	--
Aliphatic >C10-C12	NV	NV	**180**	--	--	--	--	16 U	14 U	15 U	--	--
Aromatic >C8-C10	NV	NV	**160**	--	--	--	--	16 U	14 U	15 U	--	--
Aromatic >C10-C12	NV	NV	**140**	--	--	--	--	16 U	14 U	15 U	--	--
Aromatic >C12-C13	NV	NV	**42**	--	--	--	--	16 U	14 U	15 U	--	--
Benzene	NV	NV	1.4 U	--	--	--	--	1.6 U	1.4 U	1.5 U	--	--
Ethylbenzene	NV	NV	**10**	--	--	--	--	1.6 U	1.4 U	1.5 U	--	--
m,p-Xylene	NV	NV	2.8 U	--	--	--	--	3.2 U	2.8 U	3 U	--	--
Methyl tert-butyl ether	NV	NV	1.4 U	--	--	--	--	1.6 U	1.4 U	1.5 U	--	--
n-Decane	NV	NV	**8.5**	--	--	--	--	1.6 U	1.4 U	1.5 U	--	--
n-Dodecane	NV	NV	**4**	--	--	--	--	1.6 U	1.4 U	1.5 U	--	--
n-Hexane	NV	NV	1.4 U	--	--	--	--	1.6 U	1.4 U	1.5 U	--	--
n-Octane	NV	NV	1.4 U	--	--	--	--	1.6 U	1.4 U	1.5 U	--	--

Table 5-1
Soil Analytical Results
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

		Location	GP01	GP02	GP03	GP05	GP05	GP06	GP07	GP08	GP09	GP09
		Sample Name	GP1-S-2.5	GP2-S-1.1	GP3-S-2	GP5-S-2	GP5-S-5.6	GP6-S-2.9	GP7-S-2.9	GP8-S-2.8	GP9-S-2	GP9-S-5.6
		Sample Date	05/06/2012	05/06/2012	05/06/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012
		Sample Depth Interval (ft bgs)	1-3.4	0-2.2	1.3-2.7	1.5-2.6	5-6.3	2.3-3.6	2.2-3.7	2.1-3.5	1.1-3	5-6.2
Analyte	Soil CUL (mg/kg)	CUL Source										
n-Pentane	NV	NV	1.4 U	--	--	--	--	1.6 U	1.4 U	1.5 U	--	--
o-Xylene	NV	NV	1.4 U	--	--	--	--	1.6 U	1.4 U	1.5 U	--	--
Toluene	NV	NV	1.4 U	--	--	--	--	1.6 U	1.4 U	1.5 U	--	--

		Location	GP10	GP11	GP11	GP12	GP13	GP17	GP19	GP22	GP23	GP24
		Sample Name	GP10-S-2.0	GP-11-S-1.25	GP11-S-7.5	GP12-S-12.0	GP-13-S-1.6	GP17-S-9.5	GP19-S-0.7	GP22-S-1.8	GP23-S-0.9	GP24-S-0.8
		Sample Date	12/03/2012	12/02/2012	12/02/2012	12/02/2012	12/02/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012
		Sample Depth Interval (ft bgs)	1.3-2.8	0.5-2	6-9	10-14	0.5-2.7	8-11	0.3-3.1	1.3-2.3	0.4-1.4	0.3-1.2
Analyte	Soil CUL (mg/kg)	CUL Source										
Metals (mg/kg)												
Arsenic	20	MTCA A	--	--	--	--	--	--	**2.1**	**6.9**	**2.2**	**9.2**
Barium	16000	B NCAR	--	--	--	--	--	--	--	--	--	--
Cadmium	2	MTCA A	--	--	--	--	--	--	0.3 U	**2.1**	**0.6**	**3.3**
Chromium	2000	MTCA A	--	--	--	--	--	--	--	--	--	--
Lead	250	MTCA A	--	--	--	--	--	--	**14**	**172**	**33**	**111**
Mercury	2	MTCA A	--	--	--	--	--	--	--	--	--	--
Selenium	400	MTCA B NCAR	--	--	--	--	--	--	--	--	--	--
Silver	400	MTCA B NCAR	--	--	--	--	--	--	--	--	--	--
PCBs (mg/kg)												
Aroclor 1016	1	MTCA A	0.032 U	0.033 U	--	--	0.033 U	--	--	--	--	--
Aroclor 1221	1	MTCA A	0.032 U	0.033 U	--	--	0.033 U	--	--	--	--	--
Aroclor 1232	1	MTCA A	0.032 U	0.033 U	--	--	0.033 U	--	--	--	--	--
Aroclor 1242	1	MTCA A	0.032 U	0.033 U	--	--	0.033 U	--	--	--	--	--
Aroclor 1248	1	MTCA A	0.032 U	**0.07**	--	--	0.033 U	--	--	--	--	--
Aroclor 1254	1	MTCA A	0.032 U	**0.088**	--	--	0.033 U	--	--	--	--	--
Aroclor 1260	1	MTCA A	0.032 U	**0.12**	--	--	0.033 U	--	--	--	--	--
VOCs (mg/kg)												
1,1,1,2-Tetrachloroethane	38	MTCA B CAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
1,1,1-Trichloroethane	2	MTCA A	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
1,1,2,2-Tetrachloroethane	5	MTCA B CAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
1,1,2-Trichloroethane	18	MTCA B CAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
1,1-Dichloroethane	16000	B NCAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
1,1-Dichloroethene	4000	B NCAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
1,1-Dichloropropene	NV	NV	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
1,2,3-Trichlorobenzene	NV	NV	0.0075 U	0.32 U	--	--	0.007 U	--	--	--	--	--
1,2,3-Trichloropropane	0.033	MTCA B CAR	0.003 U	0.13 U	--	--	0.0028 U	--	--	--	--	--
1,2,4-Trichlorobenzene	35	MTCA B CAR	0.0075 U	0.32 U	--	--	0.007 U	--	--	--	--	--
1,2,4-Trimethylbenzene	NV	NV	**0.0015**	**0.39**	--	--	0.0014 U	--	--	--	--	--
1,2-Dibromo-3-chloropropane	1.3	MTCA B CAR	0.0075 U	0.32 U	--	--	0.007 U	--	--	--	--	--
1,2-Dibromoethane	0.005	MTCA A	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
1,2-Dichlorobenzene	7200	B NCAR	0.0015 U	**0.096**	--	--	0.0014 U	--	--	--	--	--
1,2-Dichloroethane	11	MTCA B CAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
1,2-Dichloropropane	NV	NV	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
1,3,5-Trimethylbenzene	800	MTCA B NCAR	0.0015 U	**0.12**	--	--	0.0014 U	--	--	--	--	--
1,3-Dichlorobenzene	NV	NV	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
1,3-Dichloropropane	NV	NV	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--

		Location	GP10	GP11	GP11	GP12	GP13	GP17	GP19	GP22	GP23	GP24
		Sample Name	GP10-S-2.0	GP-11-S-1.25	GP11-S-7.5	GP12-S-12.0	GP-13-S-1.6	GP17-S-9.5	GP19-S-0.7	GP22-S-1.8	GP23-S-0.9	GP24-S-0.8
		Sample Date	12/03/2012	12/02/2012	12/02/2012	12/02/2012	12/02/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012
		Sample Depth Interval (ft bgs)	1.3-2.8	0.5-2	6-9	10-14	0.5-2.7	8-11	0.3-3.1	1.3-2.3	0.4-1.4	0.3-1.2
Analyte	Soil CUL (mg/kg)	CUL Source										
1,4-Dichlorobenzene	NV	NV	0.0015 U	**0.28**	--	--	0.0014 U	--	--	--	--	--
2,2-Dichloropropane	NV	NV	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
2-Butanone	48000	MTCA B NCAR	**0.01**	0.32 U	--	--	0.007 U	--	--	--	--	--
2-Chloroethylvinyl ether	NV	NV	0.0075 U	0.32 U	--	--	0.007 U	--	--	--	--	--
2-Chlorotoluene	1600	B NCAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
2-Hexanone	NV	NV	0.0075 U	0.32 U	--	--	0.007 U	--	--	--	--	--
4-Chlorotoluene	NV	NV	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
4-Isopropyltoluene	NV	NV	0.0015 U	**0.049** J	--	--	0.0014 U	--	--	--	--	--
4-Methyl-2-pentanone	6400	MTCA B NCAR	0.0075 U	0.32 U	--	--	0.007 U	--	--	--	--	--
Acetone	72000	B NCAR	**0.16**	**0.53** J	--	--	**0.04** J	--	--	--	--	--
Acrolein	40	B NCAR	0.075 U	3.2 U	--	--	0.07 U	--	--	--	--	--
Acrylonitrile	1.9	MTCA B CAR	0.0075 U	0.32 U	--	--	0.007 U	--	--	--	--	--
Benzene	0.03	MTCA A	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Bromobenzene	NV	NV	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Bromodichloromethane	16	MTCA B CAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
bromoethane	NV	NV	0.003 U	0.13 U	--	--	0.0028 U	--	--	--	--	--
Bromoform	130	MTCA B CAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Bromomethane	110	B NCAR	0.0015 U	**0.087**	--	--	0.0014 U	--	--	--	--	--
Carbon disulfide	8000	B NCAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Carbon tetrachloride	14	MTCA B CAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Chlorobenzene	1600	B NCAR	0.0015 U	**0.23**	--	--	0.0014 U	--	--	--	--	--
Chlorobromomethane	NV	NV	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Chloroethane	NV	NV	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Chloroform	800	B NCAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Chloromethane	NV	NV	0.0015 U	**0.11**	--	--	0.0014 U	--	--	--	--	--
cis-1,2-Dichloroethene	160	B NCAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
cis-1,3-Dichloropropene	NV	NV	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Dibromochloromethane	12	MTCA B CAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Dibromomethane	800	MTCA B NCAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Ethylbenzene	6	MTCA A	0.0015 U	**0.057** J	--	--	0.0014 U	--	--	--	--	--
Freon 113	2400000	MTCA B NCAR	0.003 U	0.13 U	--	--	0.0028 U	--	--	--	--	--
Hexachlorobutadiene	13	MTCA B CAR	0.0075 U	0.32 U	--	--	0.007 U	--	--	--	--	--
Isopropylbenzene	8000	B NCAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
m,p-Xylene	9	MTCA A	0.0015 U	**0.21**	--	--	0.0014 U	--	--	--	--	--
Methyl iodide	NV	NV	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Methylene chloride	0.02	MTCA A	**0.0043**	0.13 U	--	--	**0.0043**	--	--	--	--	--
Naphthalene	5	MTCA A	0.0075 U	0.32 U	--	--	0.007 U	--	--	--	--	--

Table 5-1
Soil Analytical Results
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

		Location	GP10	GP11	GP11	GP12	GP13	GP17	GP19	GP22	GP23	GP24
		Sample Name	GP10-S-2.0	GP-11-S-1.25	GP11-S-7.5	GP12-S-12.0	GP-13-S-1.6	GP17-S-9.5	GP19-S-0.7	GP22-S-1.8	GP23-S-0.9	GP24-S-0.8
		Sample Date	12/03/2012	12/02/2012	12/02/2012	12/02/2012	12/02/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012
		Sample Depth Interval (ft bgs)	1.3-2.8	0.5-2	6-9	10-14	0.5-2.7	8-11	0.3-3.1	1.3-2.3	0.4-1.4	0.3-1.2
Analyte	Soil CUL (mg/kg)	CUL Source										
n-Butylbenzene	NV	NV	0.0015 U	**0.042** J	--	--	0.0014 U	--	--	--	--	--
n-Propylbenzene	8000	MTCA B NCAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
o-Xylene	16000	MTCA B NCAR	0.0015 U	**0.073**	--	--	0.0014 U	--	--	--	--	--
sec-Butylbenzene	NV	NV	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Styrene	16000	MTCA B NCAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
tert-Butylbenzene	NV	NV	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Tetrachloroethene	0.05	MTCA A	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Toluene	7	MTCA A	0.0015 U	**0.16**	--	--	0.0014 U	--	--	--	--	--
trans-1,2-dichloroethene	1600	B NCAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
trans-1,3-Dichloropropene	NV	NV	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
trans-1,4-Dichloro-2-butene	NV	NV	0.0075 U	0.32 U	--	--	0.007 U	--	--	--	--	--
Trichloroethene	0.03	MTCA A	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Trichlorofluoromethane	NV	NV	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
Vinyl Acetate	80000	MTCA B NCAR	0.0075 U	0.32 U	--	--	0.007 U	--	--	--	--	--
Vinyl chloride	0.67	MTCA B CAR	0.0015 U	0.065 U	--	--	0.0014 U	--	--	--	--	--
SVOCs by 8270 (mg/kg)												
1,2,4-Trichlorobenzene	35	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	7200	B NCAR	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--
1-Methylnaphthalene	35	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	8000	MTCA B NCAR	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	91	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	240	B NCAR	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	1600	B NCAR	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	160	B NCAR	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	160	B NCAR	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	80	B NCAR	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	6400	B NCAR	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	400	B NCAR	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	MTCA B NCAR	--	--	--	--	--	--	--	--	--	--
2-Methylphenol	4000	B NCAR	--	--	--	--	--	--	--	--	--	--
2-Nitroaniline	800	MTCA B NCAR	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	NV	NV	--	--	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	2.2	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	NV	NV	--	--	--	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	NV	NV	--	--	--	--	--	--	--	--	--	--

		Location	GP10	GP11	GP11	GP12	GP13	GP17	GP19	GP22	GP23	GP24
		Sample Name	GP10-S-2.0	GP-11-S-1.25	GP11-S-7.5	GP12-S-12.0	GP-13-S-1.6	GP17-S-9.5	GP19-S-0.7	GP22-S-1.8	GP23-S-0.9	GP24-S-0.8
		Sample Date	12/03/2012	12/02/2012	12/02/2012	12/02/2012	12/02/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012
		Sample Depth Interval (ft bgs)	1.3-2.8	0.5-2	6-9	10-14	0.5-2.7	8-11	0.3-3.1	1.3-2.3	0.4-1.4	0.3-1.2
Analyte	Soil CUL (mg/kg)	CUL Source										
4-Bromophenylphenyl ether	NV	NV	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	NV	NV	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	5	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
4-Chlorophenylphenyl ether	NV	NV	--	--	--	--	--	--	--	--	--	--
4-Methylphenol	400	B NCAR	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	NV	NV	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	NV	NV	--	--	--	--	--	--	--	--	--	--
Acenaphthene	4800	B NCAR	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	1	B NCAR	--	--	--	--	--	--	--	--	--	--
Anthracene	24000	B NCAR	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	1.4	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.1	MTCA A	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene	NV	NV	--	--	--	--	--	--	--	--	--	--
Benzoic acid	320000	B NCAR	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	8000	B NCAR	--	--	--	--	--	--	--	--	--	--
Bis(2-chloro-1-methylethyl) ether	14	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	NV	NV	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroethyl)ether	0.91	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	71	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
Butylbenzylphthalate	530	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
Carbazole	NV	NV	--	--	--	--	--	--	--	--	--	--
Chrysene	140	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	80	B NCAR	--	--	--	--	--	--	--	--	--	--
Diethylphthalate	64000	B NCAR	--	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	NV	NV	--	--	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	8000	B NCAR	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	NV	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3200	B NCAR	--	--	--	--	--	--	--	--	--	--
Fluorene	3200	B NCAR	--	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	0.63	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	13	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	480	MTCA B NCAR	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	71	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	1.4	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
Isophorone	1100	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
Naphthalene	5	MTCA A	--	--	--	--	--	--	--	--	--	--

		Location	GP10	GP11	GP11	GP12	GP13	GP17	GP19	GP22	GP23	GP24
		Sample Name	GP10-S-2.0	GP-11-S-1.25	GP11-S-7.5	GP12-S-12.0	GP-13-S-1.6	GP17-S-9.5	GP19-S-0.7	GP22-S-1.8	GP23-S-0.9	GP24-S-0.8
		Sample Date	12/03/2012	12/02/2012	12/02/2012	12/02/2012	12/02/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012
		Sample Depth Interval (ft bgs)	1.3-2.8	0.5-2	6-9	10-14	0.5-2.7	8-11	0.3-3.1	1.3-2.3	0.4-1.4	0.3-1.2
Analyte	Soil CUL (mg/kg)	CUL Source										
Nitrobenzene	160	MTCA B NCAR	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	200	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
N-Nitrosodipropylamine	NV	NV	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	2.5	MTCA B CAR	--	--	--	--	--	--	--	--	--	--
Phenanthrene	NV	NV	--	--	--	--	--	--	--	--	--	--
Phenol	24000	MTCA B NCAR	--	--	--	--	--	--	--	--	--	--
Pyrene	2400	MTCA B NCAR	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes	NV	NV	--	--	--	--	--	--	--	--	--	--
SVOCs by 8270 SIM (mg/kg)												
1-Methylnaphthalene	35	MTCA B CAR	**0.035**	**0.23**	--	--	0.0046 U	--	**1.7**	**0.87**	**0.11**	**1.4**
2-Methylnaphthalene	320	MTCA B NCAR	**0.04**	**0.39**	--	--	0.0046 U	--	**1.1**	**0.96**	**0.12**	**1.9**
Acenaphthene	4800	B NCAR	**0.005**	0.024 U	--	--	0.0046 U	--	**0.0068**	**0.032**	0.013 U	**0.054**
Acenaphthylene	1	B NCAR	**0.028**	0.024 U	--	--	0.0046 U	--	0.0049 U	**0.25**	**0.015**	**1**
Anthracene	24000	B NCAR	**0.023**	0.024 U	--	--	0.0046 U	--	**0.036**	**0.34**	**0.012** J	**0.4**
Benzo(a)anthracene	1.4	MTCA B CAR	**0.11**	0.024 U	--	--	0.0046 U	--	**0.08**	**0.83**	**0.046**	**1.6**
Benzo(a)pyrene	0.1	MTCA A	**0.15**	**0.024** J	--	--	0.0046 U	--	**0.048**	**1.2**	**0.06**	**1.9**
Benzo(ghi)perylene	NV	NV	**0.13**	**0.057**	--	--	0.0046 U	--	**0.024**	**1.3**	**0.042**	**1.4**
Chrysene	140	MTCA B CAR	**0.18**	**0.075**	--	--	0.0046 U	--	**0.16**	**1.1**	**0.083**	**1.9**
Dibenzo(a,h)anthracene	0.14	MTCA B CAR	**0.03**	0.024 U	--	--	0.0046 U	--	**0.015**	**0.2**	**0.0098** J	**0.4**
Dibenzofuran	80	B NCAR	**0.02**	**0.014** J	--	--	0.0046 U	--	**0.24**	**0.23**	**0.028**	**0.31**
Fluoranthene	3200	B NCAR	**0.26**	**0.086**	--	--	0.0046 U	--	**0.057**	**2.2**	**0.091**	**2.3**
Fluorene	3200	B NCAR	**0.012**	**0.029**	--	--	0.0046 U	--	0.0049 U	**0.1**	**0.0083** J	**0.13**
Indeno(1,2,3-cd)pyrene	1.4	MTCA B CAR	**0.11**	**0.023** J	--	--	0.0046 U	--	**0.0074**	**1**	**0.032**	**1.2**
Naphthalene	5	MTCA A	**0.082**	**0.51**	--	--	**0.0026** J	--	**0.29**	**0.77**	**0.074**	**2.1**
Phenanthrene	NV	NV	**0.19**	0.024 U	--	--	0.0046 U	--	**0.83**	**2.1**	**0.14**	**1.9**
Pyrene	2400	MTCA B NCAR	**0.3**	0.024 U	--	--	0.0046 U	--	**1.1**	**3.2**	**0.15**	**3.9**
Total Benzofluoranthenes	NV	NV	**0.27**	**0.2** J	--	--	0.0046 U	--	**0.057**	**1.8**	**0.13**	**2.7**
Hydrocarbon Identification (Presence/Absence)												
Diesel-Range TPH	NV	NV	--	--	--	--	--	--	--	--	--	--
Gasoline-Range TPH	NV	NV	--	--	--	--	--	--	--	--	--	--
Motor-Oil Range	NV	NV	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (mg/kg)												
Diesel-Range TPH	2000	MTCA A	**58**	**1700**	--	--	6.5 U	**13**	--	--	--	--
Motor-Oil Range TPH	2000	MTCA A	**160**	**6500**	--	--	13 U	**51**	--	--	--	--
Gasoline-Range TPH	30	MTCA A	9.3 U	**590**	--	--	8.9 U	--	--	--	--	--

Table 5-1
Soil Analytical Results
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

		Location	GP10	GP11	GP11	GP12	GP13	GP17	GP19	GP22	GP23	GP24
		Sample Name	GP10-S-2.0	GP-11-S-1.25	GP11-S-7.5	GP12-S-12.0	GP-13-S-1.6	GP17-S-9.5	GP19-S-0.7	GP22-S-1.8	GP23-S-0.9	GP24-S-0.8
		Sample Date	12/03/2012	12/02/2012	12/02/2012	12/02/2012	12/02/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012
		Sample Depth Interval (ft bgs)	1.3-2.8	0.5-2	6-9	10-14	0.5-2.7	8-11	0.3-3.1	1.3-2.3	0.4-1.4	0.3-1.2
Analyte	Soil CUL (mg/kg)	CUL Source										
Total Organic Carbon (%)												
Total Organic Carbon	NV	NV	**3.78**	--	**0.304**	**0.814**	--	--	--	--	--	--
Calculated Totals (mg/kg)												
cPAH TEQ by 8270	0.1	MTCA A	--	--	--	--	--	--	--	--	--	--
cPAH TEQ by 8270 SIM	0.1	MTCA A	**0.20**	**0.052**	--	--	ND	--	**0.066**	**1.6**	**0.083**	**2.5**
Heavy Oils	2000	MTCA A	**218**	**8200**	--	--	ND	**64**	--	--	--	--
Total Naphthalenes by 8270	5	MTCA A	--	--	--	--	--	--	--	--	--	--
Total Naphthalenes by 8270 SIM	5	MTCA A	**0.16**	**1.1**	--	--	**0.0072** J	--	**3.1**	**2.6**	**0.30**	**5.4**
Total PCBs	1	MTCA A	ND	**0.34**	--	--	ND	--	--	--	--	--
Total Xylenes	9	MTCA A	ND	**0.283**	--	--	ND	--	--	--	--	--
EPH (mg/kg)												
Aliphatic >C8-C10	NV	NV	--	--	--	--	--	--	--	--	--	--
Aliphatic >C10-C12	NV	NV	--	--	--	--	--	--	--	--	--	--
Aliphatic >C12-C16	NV	NV	--	--	--	--	--	--	--	--	--	--
Aliphatic >C16-C21	NV	NV	--	--	--	--	--	--	--	--	--	--
Aliphatic >C21-C34	NV	NV	--	--	--	--	--	--	--	--	--	--
Aromatic >C8-C10	NV	NV	--	--	--	--	--	--	--	--	--	--
Aromatic >C10-C12	NV	NV	--	--	--	--	--	--	--	--	--	--
Aromatic >C12-C16	NV	NV	--	--	--	--	--	--	--	--	--	--
Aromatic >C16-C21	NV	NV	--	--	--	--	--	--	--	--	--	--
Aromatic >C21-C34	NV	NV	--	--	--	--	--	--	--	--	--	--
VPH (mg/kg)												
Aliphatic C5-C6	NV	NV	--	--	--	--	--	--	--	--	--	--
Aliphatic >C6-C8	NV	NV	--	--	--	--	--	--	--	--	--	--
Aliphatic >C8-C10	NV	NV	--	--	--	--	--	--	--	--	--	--
Aliphatic >C10-C12	NV	NV	--	--	--	--	--	--	--	--	--	--
Aromatic >C8-C10	NV	NV	--	--	--	--	--	--	--	--	--	--
Aromatic >C10-C12	NV	NV	--	--	--	--	--	--	--	--	--	--
Aromatic >C12-C13	NV	NV	--	--	--	--	--	--	--	--	--	--
Benzene	NV	NV	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether	NV	NV	--	--	--	--	--	--	--	--	--	--
n-Decane	NV	NV	--	--	--	--	--	--	--	--	--	--
n-Dodecane	NV	NV	--	--	--	--	--	--	--	--	--	--
n-Hexane	NV	NV	--	--	--	--	--	--	--	--	--	--
n-Octane	NV	NV	--	--	--	--	--	--	--	--	--	--

Table 5-1
Soil Analytical Results
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

		Location	GP10	GP11	GP11	GP12	GP13	GP17	GP19	GP22	GP23	GP24
		Sample Name	GP10-S-2.0	GP-11-S-1.25	GP11-S-7.5	GP12-S-12.0	GP-13-S-1.6	GP17-S-9.5	GP19-S-0.7	GP22-S-1.8	GP23-S-0.9	GP24-S-0.8
		Sample Date	12/03/2012	12/02/2012	12/02/2012	12/02/2012	12/02/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012
		Sample Depth Interval (ft bgs)	1.3-2.8	0.5-2	6-9	10-14	0.5-2.7	8-11	0.3-3.1	1.3-2.3	0.4-1.4	0.3-1.2
Analyte	Soil CUL (mg/kg)	CUL Source										
n-Pentane	NV	NV	--	--	--	--	--	--	--	--	--	--
o-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--
Toluene	NV	NV	--	--	--	--	--	--	--	--	--	--

		Location	GP25	GP26	GP29	GP30	GP31	GP32	MW01	MW02	MW03
		Sample Name	GP25-S-1.1	GP26-S-1.7	GP29-S-1.0	GP30-S-0.8	GP31-S-0.9	GP32-S-1.2	MW1-S-3.1	MW2-S-2	MW3-S-1.9
		Sample Date	12/03/2012	12/04/2012	12/04/2012	12/04/2012	12/04/2012	12/04/2012	05/07/2012	05/07/2012	05/07/2012
		Sample Depth Interval (ft bgs)	0.6-1.6	1.1-2.4	0.5-1.5	0.5-2.1	0.4-1.3	0.8-1.5	1.2-5	1.2-2.7	1.5-2.3
Analyte	Soil CUL (mg/kg)	CUL Source									
Metals (mg/kg)											
Arsenic	20	MTCA A	**7.9**	**9.9**	**4.7**	**7.1**	**6.5**	**6.3**	**4.3**	**3.2**	--
Barium	16000	B NCAR	--	--	--	--	--	--	**71**	**114**	--
Cadmium	2	MTCA A	**0.9**	**1.3**	**0.4**	**0.4**	**3.1**	**0.7**	0.1 U	**0.1**	--
Chromium	2000	MTCA A	--	--	--	--	--	--	**20.2**	**14.6**	--
Lead	250	MTCA A	**70**	**126**	**8**	**54**	**334**	**96**	**7.9**	**31.4**	**3.5**
Mercury	2	MTCA A	--	--	--	--	--	--	**0.03**	**0.05**	--
Selenium	400	MTCA B NCAR	--	--	--	--	--	--	0.6 U	0.6 U	--
Silver	400	MTCA B NCAR	--	--	--	--	--	--	0.3 U	0.2 U	--
PCBs (mg/kg)											
Aroclor 1016	1	MTCA A	--	--	--	--	--	--	0.032 U	--	--
Aroclor 1221	1	MTCA A	--	--	--	--	--	--	0.032 U	--	--
Aroclor 1232	1	MTCA A	--	--	--	--	--	--	0.032 U	--	--
Aroclor 1242	1	MTCA A	--	--	--	--	--	--	0.032 U	--	--
Aroclor 1248	1	MTCA A	--	--	--	--	--	--	0.032 U	--	--
Aroclor 1254	1	MTCA A	--	--	--	--	--	--	0.032 U	--	--
Aroclor 1260	1	MTCA A	--	--	--	--	--	--	0.032 U	--	--
VOCs (mg/kg)											
1,1,1,2-Tetrachloroethane	38	MTCA B CAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
1,1,1-Trichloroethane	2	MTCA A	--	--	--	--	--	--	0.0012 U	--	0.0011 U
1,1,2,2-Tetrachloroethane	5	MTCA B CAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
1,1,2-Trichloroethane	18	MTCA B CAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
1,1-Dichloroethane	16000	B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
1,1-Dichloroethene	4000	B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
1,1-Dichloropropene	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
1,2,3-Trichlorobenzene	NV	NV	--	--	--	--	--	--	0.006 U	--	0.0057 U
1,2,3-Trichloropropane	0.033	MTCA B CAR	--	--	--	--	--	--	0.0024 U	--	0.0023 U
1,2,4-Trichlorobenzene	35	MTCA B CAR	--	--	--	--	--	--	0.006 U	--	0.0057 U
1,2,4-Trimethylbenzene	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
1,2-Dibromo-3-chloropropane	1.3	MTCA B CAR	--	--	--	--	--	--	0.006 U	--	0.0057 U
1,2-Dibromoethane	0.005	MTCA A	--	--	--	--	--	--	0.0012 U	--	0.0011 U
1,2-Dichlorobenzene	7200	B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
1,2-Dichloroethane	11	MTCA B CAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
1,2-Dichloropropane	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
1,3,5-Trimethylbenzene	800	MTCA B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
1,3-Dichlorobenzene	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
1,3-Dichloropropane	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U

		Location	GP25	GP26	GP29	GP30	GP31	GP32	MW01	MW02	MW03
		Sample Name	GP25-S-1.1	GP26-S-1.7	GP29-S-1.0	GP30-S-0.8	GP31-S-0.9	GP32-S-1.2	MW1-S-3.1	MW2-S-2	MW3-S-1.9
		Sample Date	12/03/2012	12/04/2012	12/04/2012	12/04/2012	12/04/2012	12/04/2012	05/07/2012	05/07/2012	05/07/2012
		Sample Depth Interval (ft bgs)	0.6-1.6	1.1-2.4	0.5-1.5	0.5-2.1	0.4-1.3	0.8-1.5	1.2-5	1.2-2.7	1.5-2.3
Analyte	Soil CUL (mg/kg)	CUL Source									
1,4-Dichlorobenzene	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
2,2-Dichloropropane	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
2-Butanone	48000	MTCA B NCAR	--	--	--	--	--	--	**0.0043** J	--	0.0057 U
2-Chloroethylvinyl ether	NV	NV	--	--	--	--	--	--	0.006 U	--	0.0057 U
2-Chlorotoluene	1600	B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
2-Hexanone	NV	NV	--	--	--	--	--	--	0.006 U	--	0.0057 U
4-Chlorotoluene	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
4-Isopropyltoluene	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
4-Methyl-2-pentanone	6400	MTCA B NCAR	--	--	--	--	--	--	0.006 U	--	0.0057 U
Acetone	72000	B NCAR	--	--	--	--	--	--	**0.11**	--	**0.1**
Acrolein	40	B NCAR	--	--	--	--	--	--	0.06 U	--	0.057 U
Acrylonitrile	1.9	MTCA B CAR	--	--	--	--	--	--	0.006 U	--	0.0057 U
Benzene	0.03	MTCA A	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Bromobenzene	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Bromodichloromethane	16	MTCA B CAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
bromoethane	NV	NV	--	--	--	--	--	--	0.0024 U	--	0.0023 U
Bromoform	130	MTCA B CAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Bromomethane	110	B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Carbon disulfide	8000	B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Carbon tetrachloride	14	MTCA B CAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Chlorobenzene	1600	B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Chlorobromomethane	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Chloroethane	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Chloroform	800	B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Chloromethane	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
cis-1,2-Dichloroethene	160	B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
cis-1,3-Dichloropropene	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Dibromochloromethane	12	MTCA B CAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Dibromomethane	800	MTCA B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Ethylbenzene	6	MTCA A	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Freon 113	2400000	MTCA B NCAR	--	--	--	--	--	--	0.0024 U	--	0.0023 U
Hexachlorobutadiene	13	MTCA B CAR	--	--	--	--	--	--	0.006 U	--	0.0057 U
Isopropylbenzene	8000	B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
m,p-Xylene	9	MTCA A	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Methyl iodide	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Methylene chloride	0.02	MTCA A	--	--	--	--	--	--	**0.005**	--	**0.0033**
Naphthalene	5	MTCA A	--	--	--	--	--	--	0.006 U	--	0.0057 U

Table 5-1
Soil Analytical Results
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

		Location	GP25	GP26	GP29	GP30	GP31	GP32	MW01	MW02	MW03
		Sample Name	GP25-S-1.1	GP26-S-1.7	GP29-S-1.0	GP30-S-0.8	GP31-S-0.9	GP32-S-1.2	MW1-S-3.1	MW2-S-2	MW3-S-1.9
		Sample Date	12/03/2012	12/04/2012	12/04/2012	12/04/2012	12/04/2012	12/04/2012	05/07/2012	05/07/2012	05/07/2012
		Sample Depth Interval (ft bgs)	0.6-1.6	1.1-2.4	0.5-1.5	0.5-2.1	0.4-1.3	0.8-1.5	1.2-5	1.2-2.7	1.5-2.3
Analyte	Soil CUL (mg/kg)	CUL Source									
n-Butylbenzene	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
n-Propylbenzene	8000	MTCA B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
o-Xylene	16000	MTCA B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
sec-Butylbenzene	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Styrene	16000	MTCA B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
tert-Butylbenzene	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Tetrachloroethene	0.05	MTCA A	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Toluene	7	MTCA A	--	--	--	--	--	--	**0.0007** J	--	**0.0006** J
trans-1,2-dichloroethene	1600	B NCAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
trans-1,3-Dichloropropene	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
trans-1,4-Dichloro-2-butene	NV	NV	--	--	--	--	--	--	0.006 U	--	0.0057 U
Trichloroethene	0.03	MTCA A	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Trichlorofluoromethane	NV	NV	--	--	--	--	--	--	0.0012 U	--	0.0011 U
Vinyl Acetate	80000	MTCA B NCAR	--	--	--	--	--	--	0.006 U	--	0.0057 U
Vinyl chloride	0.67	MTCA B CAR	--	--	--	--	--	--	0.0012 U	--	0.0011 U
SVOCs by 8270 (mg/kg)											
1,2,4-Trichlorobenzene	35	MTCA B CAR	--	--	--	--	--	--	0.058 U	--	--
1,2-Dichlorobenzene	7200	B NCAR	--	--	--	--	--	--	0.058 U	--	--
1,3-Dichlorobenzene	NV	NV	--	--	--	--	--	--	0.058 U	--	--
1,4-Dichlorobenzene	NV	NV	--	--	--	--	--	--	0.058 U	--	--
1-Methylnaphthalene	35	MTCA B CAR	--	--	--	--	--	--	0.058 U	--	--
2,4,5-Trichlorophenol	8000	MTCA B NCAR	--	--	--	--	--	--	0.29 U	--	--
2,4,6-Trichlorophenol	91	MTCA B CAR	--	--	--	--	--	--	0.29 U	--	--
2,4-Dichlorophenol	240	B NCAR	--	--	--	--	--	--	0.29 U	--	--
2,4-Dimethylphenol	1600	B NCAR	--	--	--	--	--	--	0.058 U	--	--
2,4-Dinitrophenol	160	B NCAR	--	--	--	--	--	--	0.58 U	--	--
2,4-Dinitrotoluene	160	B NCAR	--	--	--	--	--	--	0.29 U	--	--
2,6-Dinitrotoluene	80	B NCAR	--	--	--	--	--	--	0.29 U	--	--
2-Chloronaphthalene	6400	B NCAR	--	--	--	--	--	--	0.058 U	--	--
2-Chlorophenol	400	B NCAR	--	--	--	--	--	--	0.058 U	--	--
2-Methylnaphthalene	320	MTCA B NCAR	--	--	--	--	--	--	**0.029** J	--	--
2-Methylphenol	4000	B NCAR	--	--	--	--	--	--	0.058 U	--	--
2-Nitroaniline	800	MTCA B NCAR	--	--	--	--	--	--	0.29 U	--	--
2-Nitrophenol	NV	NV	--	--	--	--	--	--	0.058 U	--	--
3,3-Dichlorobenzidine	2.2	MTCA B CAR	--	--	--	--	--	--	0.29 U	--	--
3-Nitroaniline	NV	NV	--	--	--	--	--	--	0.29 U	--	--
4,6-Dinitro-2-methylphenol	NV	NV	--	--	--	--	--	--	0.58 U	--	--

		Location	GP25	GP26	GP29	GP30	GP31	GP32	MW01	MW02	MW03
		Sample Name	GP25-S-1.1	GP26-S-1.7	GP29-S-1.0	GP30-S-0.8	GP31-S-0.9	GP32-S-1.2	MW1-S-3.1	MW2-S-2	MW3-S-1.9
		Sample Date	12/03/2012	12/04/2012	12/04/2012	12/04/2012	12/04/2012	12/04/2012	05/07/2012	05/07/2012	05/07/2012
		Sample Depth Interval (ft bgs)	0.6-1.6	1.1-2.4	0.5-1.5	0.5-2.1	0.4-1.3	0.8-1.5	1.2-5	1.2-2.7	1.5-2.3
Analyte	Soil CUL (mg/kg)	CUL Source									
4-Bromophenylphenyl ether	NV	NV	--	--	--	--	--	--	0.058 U	--	--
4-Chloro-3-methylphenol	NV	NV	--	--	--	--	--	--	0.29 U	--	--
4-Chloroaniline	5	MTCA B CAR	--	--	--	--	--	--	0.29 U	--	--
4-Chlorophenylphenyl ether	NV	NV	--	--	--	--	--	--	0.058 U	--	--
4-Methylphenol	400	B NCAR	--	--	--	--	--	--	0.058 U	--	--
4-Nitroaniline	NV	NV	--	--	--	--	--	--	0.29 U	--	--
4-Nitrophenol	NV	NV	--	--	--	--	--	--	0.29 U	--	--
Acenaphthene	4800	B NCAR	--	--	--	--	--	--	0.058 U	--	--
Acenaphthylene	1	B NCAR	--	--	--	--	--	--	0.058 U	--	--
Anthracene	24000	B NCAR	--	--	--	--	--	--	0.058 U	--	--
Benzo(a)anthracene	1.4	MTCA B CAR	--	--	--	--	--	--	0.058 U	--	--
Benzo(a)pyrene	0.1	MTCA A	--	--	--	--	--	--	0.058 U	--	--
Benzo(ghi)perylene	NV	NV	--	--	--	--	--	--	0.058 U	--	--
Benzoic acid	320000	B NCAR	--	--	--	--	--	--	0.58 U	--	--
Benzyl alcohol	8000	B NCAR	--	--	--	--	--	--	0.29 U	--	--
Bis(2-chloro-1-methylethyl) ether	14	MTCA B CAR	--	--	--	--	--	--	0.058 U	--	--
Bis(2-chloroethoxy)methane	NV	NV	--	--	--	--	--	--	0.058 U	--	--
Bis(2-chloroethyl)ether	0.91	MTCA B CAR	--	--	--	--	--	--	0.058 U	--	--
Bis(2-ethylhexyl)phthalate	71	MTCA B CAR	--	--	--	--	--	--	0.058 U	--	--
Butylbenzylphthalate	530	MTCA B CAR	--	--	--	--	--	--	0.058 U	--	--
Carbazole	NV	NV	--	--	--	--	--	--	0.058 U	--	--
Chrysene	140	MTCA B CAR	--	--	--	--	--	--	0.058 U	--	--
Dibenzo(a,h)anthracene	0.14	MTCA B CAR	--	--	--	--	--	--	0.058 U	--	--
Dibenzofuran	80	B NCAR	--	--	--	--	--	--	0.058 U	--	--
Diethylphthalate	64000	B NCAR	--	--	--	--	--	--	0.058 U	--	--
Dimethyl phthalate	NV	NV	--	--	--	--	--	--	0.058 U	--	--
Di-n-butyl phthalate	8000	B NCAR	--	--	--	--	--	--	0.058 U	--	--
Di-n-octyl phthalate	NV	NV	--	--	--	--	--	--	0.058 U	--	--
Fluoranthene	3200	B NCAR	--	--	--	--	--	--	0.058 U	--	--
Fluorene	3200	B NCAR	--	--	--	--	--	--	0.058 U	--	--
Hexachlorobenzene	0.63	MTCA B CAR	--	--	--	--	--	--	0.058 U	--	--
Hexachlorobutadiene	13	MTCA B CAR	--	--	--	--	--	--	0.058 U	--	--
Hexachlorocyclopentadiene	480	MTCA B NCAR	--	--	--	--	--	--	0.29 U	--	--
Hexachloroethane	71	MTCA B CAR	--	--	--	--	--	--	0.058 U	--	--
Indeno(1,2,3-cd)pyrene	1.4	MTCA B CAR	--	--	--	--	--	--	0.058 U	--	--
Isophorone	1100	MTCA B CAR	--	--	--	--	--	--	0.058 U	--	--
Naphthalene	5	MTCA A	--	--	--	--	--	--	0.058 U	--	--

		Location	GP25	GP26	GP29	GP30	GP31	GP32	MW01	MW02	MW03
		Sample Name	GP25-S-1.1	GP26-S-1.7	GP29-S-1.0	GP30-S-0.8	GP31-S-0.9	GP32-S-1.2	MW1-S-3.1	MW2-S-2	MW3-S-1.9
		Sample Date	12/03/2012	12/04/2012	12/04/2012	12/04/2012	12/04/2012	12/04/2012	05/07/2012	05/07/2012	05/07/2012
		Sample Depth Interval (ft bgs)	0.6-1.6	1.1-2.4	0.5-1.5	0.5-2.1	0.4-1.3	0.8-1.5	1.2-5	1.2-2.7	1.5-2.3
Analyte	Soil CUL (mg/kg)	CUL Source									
Nitrobenzene	160	MTCA B NCAR	--	--	--	--	--	--	0.058 U	--	--
N-Nitrosodiphenylamine	200	MTCA B CAR	--	--	--	--	--	--	0.058 U	--	--
N-Nitrosodipropylamine	NV	NV	--	--	--	--	--	--	0.058 U	--	--
Pentachlorophenol	2.5	MTCA B CAR	--	--	--	--	--	--	0.29 U	--	--
Phenanthrene	NV	NV	--	--	--	--	--	--	0.058 U	--	--
Phenol	24000	MTCA B NCAR	--	--	--	--	--	--	0.058 U	--	--
Pyrene	2400	MTCA B NCAR	--	--	--	--	--	--	0.058 U	--	--
Total Benzofluoranthenes	NV	NV	--	--	--	--	--	--	0.058 U	--	--
SVOCs by 8270 SIM (mg/kg)											
1-Methylnaphthalene	35	MTCA B CAR	**0.2**	**7.8**	**0.13**	**3.1**	**1.5**	**1**	**0.0067**	--	--
2-Methylnaphthalene	320	MTCA B NCAR	**0.25**	**9.2**	**0.12**	**3.3**	**1.7**	**1.2**	**0.0088**	--	--
Acenaphthene	4800	B NCAR	**0.011**	**0.096**	**0.0033** J	**0.018**	**0.0074** J	**0.0095**	0.0047 U	--	--
Acenaphthylene	1	B NCAR	**0.025**	0.03 U	0.0047 U	0.0046 U	**0.15**	**0.015**	0.0047 U	--	--
Anthracene	24000	B NCAR	**0.031**	**0.51**	**0.016**	**0.19**	**0.24**	**0.05**	0.0047 U	--	--
Benzo(a)anthracene	1.4	MTCA B CAR	**0.13**	**0.95**	**0.024**	**0.38**	**0.62**	**0.11**	0.0047 U	--	--
Benzo(a)pyrene	0.1	MTCA A	**0.17**	**0.78**	**0.033**	**0.31**	**0.99**	**0.11**	0.0047 U	--	--
Benzo(ghi)perylene	NV	NV	**0.13**	**0.39**	**0.015**	**0.11**	**0.95**	**0.066**	**0.0041** J	--	--
Chrysene	140	MTCA B CAR	**0.27**	**1.1**	**0.036**	**0.41**	**0.97**	**0.18**	**0.0058**	--	--
Dibenzo(a,h)anthracene	0.14	MTCA B CAR	**0.04**	**0.17**	**0.0061**	**0.044**	**0.19**	**0.033**	0.0047 U	--	--
Dibenzofuran	80	B NCAR	**0.069**	**1.9**	**0.032**	**0.96**	**0.38**	**0.26**	**0.0033** J	--	--
Fluoranthene	3200	B NCAR	**0.53**	**1.7**	**0.04**	**0.45**	**1.2**	**0.22**	**0.0048**	--	--
Fluorene	3200	B NCAR	**0.013**	**0.2**	**0.0063**	**0.035**	**0.043**	**0.019**	0.0047 U	--	--
Indeno(1,2,3-cd)pyrene	1.4	MTCA B CAR	**0.13**	**0.37**	**0.011**	**0.092**	**0.77**	**0.11**	0.0047 U	--	--
Naphthalene	5	MTCA A	**0.16**	**4.7**	**0.07**	**1.9**	**1.2**	**0.68**	**0.0045** J	--	--
Phenanthrene	NV	NV	**0.66**	**6.3**	**0.11**	**1.8**	**1.4**	**0.5**	**0.0083**	--	--
Pyrene	2400	MTCA B NCAR	**0.7**	**6.1**	**0.064**	**4**	**1.9**	**0.95**	**0.0049**	--	--
Total Benzofluoranthenes	NV	NV	**0.32**	**1.2**	**0.056**	**0.45**	**1.4**	**0.2**	0.0047 U	--	--
Hydrocarbon Identification (Presence/Absence)											
Diesel-Range TPH	NV	NV	--	--	--	--	--	--	--	ND	--
Gasoline-Range TPH	NV	NV	--	--	--	--	--	--	--	ND	--
Motor-Oil Range	NV	NV	--	--	--	--	--	--	--	ND	--
Total Petroleum Hydrocarbons (mg/kg)											
Diesel-Range TPH	2000	MTCA A	--	--	--	--	--	--	**58**	--	--
Motor-Oil Range TPH	2000	MTCA A	--	--	--	--	--	--	**160**	--	--
Gasoline-Range TPH	30	MTCA A	--	--	--	--	--	--	8.9 U	--	8.6 U

Table 5-1
Soil Analytical Results
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

		Location	GP25	GP26	GP29	GP30	GP31	GP32	MW01	MW02	MW03
		Sample Name	GP25-S-1.1	GP26-S-1.7	GP29-S-1.0	GP30-S-0.8	GP31-S-0.9	GP32-S-1.2	MW1-S-3.1	MW2-S-2	MW3-S-1.9
		Sample Date	12/03/2012	12/04/2012	12/04/2012	12/04/2012	12/04/2012	12/04/2012	05/07/2012	05/07/2012	05/07/2012
		Sample Depth Interval (ft bgs)	0.6-1.6	1.1-2.4	0.5-1.5	0.5-2.1	0.4-1.3	0.8-1.5	1.2-5	1.2-2.7	1.5-2.3
Analyte	Soil CUL (mg/kg)	CUL Source									
Total Organic Carbon (%)											
Total Organic Carbon	NV	NV	--	--	--	--	--	--	--	--	--
Calculated Totals (mg/kg)											
cPAH TEQ by 8270	0.1	MTCA A	--	--	--	--	--	--	ND	--	--
cPAH TEQ by 8270 SIM	0.1	MTCA A	**0.23**	**1.1**	**0.043**	**0.41**	**1.3**	**0.16**	**0.0033**	--	--
Heavy Oils	2000	MTCA A	--	--	--	--	--	--	**218**	--	--
Total Naphthalenes by 8270	5	MTCA A	--	--	--	--	--	--	**0.087** J	--	--
Total Naphthalenes by 8270 SIM	5	MTCA A	**0.61**	**22**	**0.32**	**8.3**	**4.4**	**2.9**	**0.020**	--	--
Total PCBs	1	MTCA A	--	--	--	--	--	--	ND	--	--
Total Xylenes	9	MTCA A	--	--	--	--	--	--	ND	--	ND
EPH (mg/kg)											
Aliphatic >C8-C10	NV	NV	--	--	--	--	--	--	**3.8** J	--	--
Aliphatic >C10-C12	NV	NV	--	--	--	--	--	--	2.6 U	--	--
Aliphatic >C12-C16	NV	NV	--	--	--	--	--	--	2.6 U	--	--
Aliphatic >C16-C21	NV	NV	--	--	--	--	--	--	**6.3**	--	--
Aliphatic >C21-C34	NV	NV	--	--	--	--	--	--	**10**	--	--
Aromatic >C8-C10	NV	NV	--	--	--	--	--	--	2.6 U	--	--
Aromatic >C10-C12	NV	NV	--	--	--	--	--	--	2.6 U	--	--
Aromatic >C12-C16	NV	NV	--	--	--	--	--	--	2.6 U	--	--
Aromatic >C16-C21	NV	NV	--	--	--	--	--	--	2.6 U	--	--
Aromatic >C21-C34	NV	NV	--	--	--	--	--	--	2.6 U	--	--
VPH (mg/kg)											
Aliphatic C5-C6	NV	NV	--	--	--	--	--	--	16 U	--	15 U
Aliphatic >C6-C8	NV	NV	--	--	--	--	--	--	16 U	--	15 U
Aliphatic >C8-C10	NV	NV	--	--	--	--	--	--	16 U	--	15 U
Aliphatic >C10-C12	NV	NV	--	--	--	--	--	--	16 U	--	15 U
Aromatic >C8-C10	NV	NV	--	--	--	--	--	--	16 U	--	15 U
Aromatic >C10-C12	NV	NV	--	--	--	--	--	--	16 U	--	15 U
Aromatic >C12-C13	NV	NV	--	--	--	--	--	--	16 U	--	15 U
Benzene	NV	NV	--	--	--	--	--	--	1.6 U	--	1.5 U
Ethylbenzene	NV	NV	--	--	--	--	--	--	1.6 U	--	1.5 U
m,p-Xylene	NV	NV	--	--	--	--	--	--	3.2 U	--	2.9 U
Methyl tert-butyl ether	NV	NV	--	--	--	--	--	--	1.6 U	--	1.5 U
n-Decane	NV	NV	--	--	--	--	--	--	1.6 U	--	1.5 U
n-Dodecane	NV	NV	--	--	--	--	--	--	1.6 U	--	1.5 U
n-Hexane	NV	NV	--	--	--	--	--	--	1.6 U	--	1.5 U
n-Octane	NV	NV	--	--	--	--	--	--	1.6 U	--	1.5 U

		Location	GP25	GP26	GP29	GP30	GP31	GP32	MW01	MW02	MW03
		Sample Name	GP25-S-1.1	GP26-S-1.7	GP29-S-1.0	GP30-S-0.8	GP31-S-0.9	GP32-S-1.2	MW1-S-3.1	MW2-S-2	MW3-S-1.9
		Sample Date	12/03/2012	12/04/2012	12/04/2012	12/04/2012	12/04/2012	12/04/2012	05/07/2012	05/07/2012	05/07/2012
		Sample Depth Interval (ft bgs)	0.6-1.6	1.1-2.4	0.5-1.5	0.5-2.1	0.4-1.3	0.8-1.5	1.2-5	1.2-2.7	1.5-2.3
Analyte	Soil CUL (mg/kg)	CUL Source									
n-Pentane	NV	NV	--	--	--	--	--	--	1.6 U	--	1.5 U
o-Xylene	NV	NV	--	--	--	--	--	--	1.6 U	--	1.5 U
Toluene	NV	NV	--	--	--	--	--	--	1.6 U	--	1.5 U

NOTES:

Total concentrations were calculated using one-half the method reporting limit for non-detects. Where all components were non-detect, the calculated total is "ND."

Detections in **bold**.

Detected concentrations were compared to MTCA A, Unrestricted Land Use, CULs or MTCA B CULs if no MTCA A value was available.

Exceedances highlighted.

-- = not analyzed.

8270 = U.S. Environmental Protection Agency Method 8270.

8270 SIM = U.S. Environmental Protection Agency Method 8270 selective ion monitoring.

cPAH TEQ = carcinogenic polycyclic aromatic hydrocarbon toxic equivalency quotient.

CUL = cleanup level.

ft bgs = feet below ground surface.

Heavy oils = sum of the diesel- and motor-oil-range TPH fractions.

J = Result is an estimated value.

mg/kg = milligrams per kilogram (parts per million).

MTCA = Model Toxics Control Act.

MTCA A = MTCA Method A, Unrestricted Land Use Table Value, CUL.

MTCA B CAR = MTCA Method B, Standard Formula Value, CUL for carcinogenic compounds.

MTCA B NCAR = MTCA Method B, Standard Formula Value, CUL for noncarcinogenic compounds.

ND = not detected.

NV = no value.

PCB = polychlorinated biphenyl.

SVOC = semivolatile organic compound.

TPH = total petroleum hydrocarbons.

U = Analyte not detected at or above method detection limit.

VOC = volatile organic compound.

Table 5-2
Groundwater Analytical Results
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

		Location:	GP01	GP02	GP04	GP05	GP06	GP07	GP08	GP09	GP10	GP10	GP10
		Sample Name:	GP1-W-7.5	GP2-W-10	GP4-W-10	GP5-W-10	GP6-W-9	GP7-W-8	GP8-W-8	GP9-W-10	GP-10-W-7.5	GPDUP-W-7.5	GP10-W-16.5
		Collection Date:	05/06/2012	05/06/2012	05/07/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	12/03/2012	12/03/2012	12/03/2012
		Collection Depth (ft bgs):	5-10	5-15	8-12	8-12	7-11	6-10	6-10	8-12	5-10	5-10	14-19
	Groundwater CUL (ug/L)	**CUL Source**											
Dissolved Metals (ug/L)													
Arsenic	5.00E+00	MTCA A	**3.6**	**0.5**	**0.3**	**1**	--	--	--	0.2 U	--	--	--
Barium	3.20E+03	MTCA B NCAR	**137**	**13.1**	**42.8**	**48.7**	--	--	--	**15.4**	--	--	--
Cadmium	5.00E+00	MTCA A	0.1 U	0.1 U	0.1 U	**0.1**	--	--	--	0.1 U	--	--	--
Chromium	5.00E+01	MTCA A	1 U	0.5 U	0.5 U	0.5 U	--	--	--	**0.8**	--	--	--
Iron	1.12E+04	MTCA B NCAR	--	--	--	--	--	--	--	--	**3400** J	**3490** J	**13800** J
Lead	1.50E+01	MTCA A	**0.1**	**0.1**	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--
Mercury	2.00E+00	MTCA A	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.1 U	--	--	--
Selenium	8.00E+01	MTCA B NCAR	0.5 U	0.5 U	0.5 U	2 U	--	--	--	0.5 U	--	--	--
Silver	8.00E+01	MTCA B NCAR	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	0.2 U	--	--	--
PCB Aroclors (ug/L)													
Aroclor 1016	1.25E+00	MTCA B CAR	0.01 U	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	NV	0.01 U	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	NV	0.01 U	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	NV	0.01 U	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	NV	**0.009** J	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	4.38E-02	MTCA B CAR	0.01 U	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	4.38E-02	MTCA B CAR	0.01 U	--	--	--	--	--	--	--	--	--	--
VOCs (ug/L)													
1,1,1,2-Tetrachloroethane	1.68E+00	MTCA B CAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
1,1,1-Trichloroethane	2.00E+02	MTCA A	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
1,1,2,2-Tetrachloroethane	2.19E-01	MTCA B CAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
1,1,2-Trichloroethane	7.68E-01	MTCA B CAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
1,1-Dichloroethane	7.68E+00	MTCA B CAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
1,1-Dichloroethene	4.00E+02	MTCA B NCAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
1,1-Dichloropropene	NV	NV	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
1,2,3-Trichlorobenzene	NV	NV	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--
1,2,3-Trichloropropane	1.46E-03	MTCA B CAR	**0.4** J	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--
1,2,4-Trichlorobenzene	1.51E+00	MTCA B CAR	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--
1,2,4-Trimethylbenzene	NV	NV	**2.8**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
1,2-Dibromo-3-chloropropane	5.47E-02	MTCA B CAR	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--
1,2-Dibromoethane	1.00E-02	MTCA A	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
1,2-Dichlorobenzene	7.20E+02	MTCA B NCAR	**1.7**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
1,2-Dichloroethane	5.00E+00	MTCA A	**0.2** J	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
1,2-Dichloropropane	1.22E+00	MTCA B CAR	**0.2**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
1,3,5-Trimethylbenzene	8.00E+01	MTCA B NCAR	**2.2**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
1,3-Dichlorobenzene	NV	NV	**3.4**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--

		Location:	GP01	GP02	GP04	GP05	GP06	GP07	GP08	GP09	GP10	GP10	GP10
		Sample Name:	GP1-W-7.5	GP2-W-10	GP4-W-10	GP5-W-10	GP6-W-9	GP7-W-8	GP8-W-8	GP9-W-10	GP-10-W-7.5	GPDUP-W-7.5	GP10-W-16.5
		Collection Date:	05/06/2012	05/06/2012	05/07/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	12/03/2012	12/03/2012	12/03/2012
		Collection Depth (ft bgs):	5-10	5-15	8-12	8-12	7-11	6-10	6-10	8-12	5-10	5-10	14-19
	Groundwater CUL (ug/L)	**CUL Source**											
1,3-Dichloropropane	NV	NV	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
1,4-Dichlorobenzene	8.10E+00	MTCA B CAR	**50**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
2,2-Dichloropropane	NV	NV	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
2-Butanone	4.80E+03	MTCA B NCAR	5 U	5 U	5 U	--	5 U	5 U	5 U	--	5 U	5 U	--
2-Chloroethylvinyl ether	NV	NV	1 U	1 U	1 U	--	1 U	1 U	1 U	--	1 U	1 U	--
2-Chlorotoluene	1.60E+02	MTCA B NCAR	**0.8**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
2-Hexanone	NV	NV	5 U	5 U	5 U	--	5 U	5 U	5 U	--	5 U	5 U	--
4-Chlorotoluene	NV	NV	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
4-Isopropyltoluene	NV	NV	**3.4**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
4-Methyl-2-pentanone	6.40E+02	MTCA B NCAR	5 U	5 U	5 U	--	5 U	5 U	5 U	--	5 U	5 U	--
Acetone	7.20E+03	MTCA B NCAR	**4.6** J	5 U	5 U	--	**2.6** J	**2.3** J	**2.9** J	--	5 U	**2.5** J	--
Acrolein	4.00E+00	MTCA B NCAR	5 U	5 U	5 U	--	5 U	5 U	5 U	--	5 U	5 U	--
Acrylonitrile	8.10E-02	MTCA B CAR	1 U	1 U	1 U	--	1 U	1 U	1 U	--	1 U	1 U	--
Benzene	5.00E+00	MTCA A	**1.7**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Bromobenzene	NV	NV	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Bromodichloromethane	7.06E-01	MTCA B CAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Bromoethane	NV	NV	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Bromoform	5.54E+00	MTCA B CAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Bromomethane	1.12E+01	MTCA B NCAR	1 U	1 U	1 U	--	1 U	1 U	1 U	--	1 U	1 U	--
Carbon disulfide	8.00E+02	MTCA B NCAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	**0.12** J	--
Carbon tetrachloride	6.25E-01	MTCA B CAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Chlorobenzene	1.60E+02	MTCA B NCAR	**340**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Chlorobromomethane	NV	NV	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Chloroethane	NV	NV	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Chloroform	1.41E+00	MTCA B CAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Chloromethane	NV	NV	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--
cis-1,2-Dichloroethene	1.60E+01	MTCA B NCAR	**0.1** J	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
cis-1,3-Dichloropropene	NV	NV	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Dibromochloromethane	5.21E-01	MTCA B CAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Dibromomethane	8.00E+01	MTCA B NCAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Ethylbenzene	7.00E+02	MTCA A	**1.1**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Freon 113	2.40E+05	MTCA B NCAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Hexachlorobutadiene	5.61E-01	MTCA B CAR	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--
Isopropylbenzene	8.00E+02	MTCA B NCAR	**6**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
m,p-Xylene	1.00E+03	MTCA A	**0.3** J	0.4 U	0.4 U	--	0.4 U	0.4 U	0.4 U	--	0.4 U	0.4 U	--
Methyl iodide	NV	NV	1 U	1 U	1 U	--	1 U	1 U	1 U	--	1 U	1 U	--
Methylene chloride	5.00E+00	MTCA A	1 U	1 U	1 U	--	1 U	1 U	1 U	--	1 U	1 U	--

Table 5-2
Groundwater Analytical Results
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

		Location:	GP01	GP02	GP04	GP05	GP06	GP07	GP08	GP09	GP10	GP10	GP10
		Sample Name:	GP1-W-7.5	GP2-W-10	GP4-W-10	GP5-W-10	GP6-W-9	GP7-W-8	GP8-W-8	GP9-W-10	GP-10-W-7.5	GPDUP-W-7.5	GP10-W-16.5
		Collection Date:	05/06/2012	05/06/2012	05/07/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	12/03/2012	12/03/2012	12/03/2012
		Collection Depth (ft bgs):	5-10	5-15	8-12	8-12	7-11	6-10	6-10	8-12	5-10	5-10	14-19
	Groundwater CUL (ug/L)	**CUL Source**											
Naphthalene	1.60E+02	MTCA A	**1.1**	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--
n-Butylbenzene	4.00E+02	MTCA B NCAR	**2.8**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
n-Propylbenzene	8.00E+02	MTCA B NCAR	**11**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
o-Xylene	1.60E+03	MTCA B NCAR	**1.2**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
sec-Butylbenzene	8.00E+02	MTCA B NCAR	**4.9**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Styrene	1.60E+03	MTCA B NCAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
tert-Butylbenzene	8.00E+02	MTCA B NCAR	**0.6**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Tetrachloroethene	5.00E+00	MTCA A	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Toluene	1.00E+03	MTCA A	**0.6**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
trans-1,2-dichloroethene	1.60E+02	MTCA B NCAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
trans-1,3-Dichloropropene	NV	NV	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
trans-1,4-Dichloro-2-butene	NV	NV	1 U	1 U	1 U	--	1 U	1 U	1 U	--	1 U	1 U	--
Trichloroethene	5.00E+00	MTCA A	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Trichlorofluoromethane	2.40E+03	MTCA B NCAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Vinyl Acetate	8.00E+03	MTCA B NCAR	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
Vinyl chloride	2.00E-01	MTCA A	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	--
SVOCs (ug/L)													
1,2,4-Trichlorobenzene	1.51E+00	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	7.20E+02	MTCA B NCAR	**0.7** J	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NV	NV	**1.1**	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	8.10E+00	MTCA B CAR	**19**	--	--	--	--	--	--	--	--	--	--
1-Methylnaphthalene	1.60E+02	MTCA A	**12**	--	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	8.00E+02	MTCA B NCAR	5 U	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	3.98E+00	MTCA B CAR	5 U	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	2.40E+01	MTCA B NCAR	5 U	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	1.60E+02	MTCA B NCAR	1 U	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	3.20E+01	MTCA B NCAR	10 U	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	2.82E-01	MTCA B CAR	5 U	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	5.83E-02	MTCA B CAR	5 U	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	6.40E+02	MTCA B NCAR	1 U	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	4.00E+01	MTCA B NCAR	**2.6**	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	1.60E+02	MTCA A	**11**	--	--	--	--	--	--	--	--	--	--
2-Methylphenol	4.00E+02	MTCA B NCAR	1 U	--	--	--	--	--	--	--	--	--	--
2-Nitroaniline	1.60E+02	MTCA B NCAR	5 U	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	NV	NV	5 U	--	--	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	1.94E-01	MTCA B CAR	5 U	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	NV	NV	5 U	--	--	--	--	--	--	--	--	--	--

		Location:	GP01	GP02	GP04	GP05	GP06	GP07	GP08	GP09	GP10	GP10	GP10
		Sample Name:	GP1-W-7.5	GP2-W-10	GP4-W-10	GP5-W-10	GP6-W-9	GP7-W-8	GP8-W-8	GP9-W-10	GP-10-W-7.5	GPDUP-W-7.5	GP10-W-16.5
		Collection Date:	05/06/2012	05/06/2012	05/07/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	12/03/2012	12/03/2012	12/03/2012
		Collection Depth (ft bgs):	5-10	5-15	8-12	8-12	7-11	6-10	6-10	8-12	5-10	5-10	14-19
	Groundwater CUL (ug/L)	**CUL Source**											
4,6-Dinitro-2-methylphenol	NV	NV	10 U	--	--	--	--	--	--	--	--	--	--
4-Bromophenylphenyl ether	NV	NV	1 U	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	NV	NV	5 U	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	2.19E-01	MTCA B CAR	5 U	--	--	--	--	--	--	--	--	--	--
4-Chlorophenylphenyl ether	NV	NV	1 U	--	--	--	--	--	--	--	--	--	--
4-Methylphenol	8.00E+02	MTCA B NCAR	1 U	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	NV	NV	5 U	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	NV	NV	5 U	--	--	--	--	--	--	--	--	--	--
Acenaphthene	9.60E+02	MTCA B NCAR	1 U	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	NV	NV	1 U	--	--	--	--	--	--	--	--	--	--
Anthracene	4.80E+03	MTCA B NCAR	1 U	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	1.20E-01	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	1.00E-01	MTCA A	1 U	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene	NV	NV	1 U	--	--	--	--	--	--	--	--	--	--
Benzoic acid	6.40E+04	MTCA B NCAR	10 U	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	8.00E+02	MTCA B NCAR	5 U	--	--	--	--	--	--	--	--	--	--
Bis(2-chloro-1-methylethyl)ether	6.25E-01	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	NV	NV	1 U	--	--	--	--	--	--	--	--	--	--
Bis(2-chloroethyl)ether	3.98E-02	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	6.25E+00	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--
Butylbenzylphthalate	4.61E+01	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--
Carbazole	NV	NV	1 U	--	--	--	--	--	--	--	--	--	--
Chrysene	1.20E+01	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	1.20E-02	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	1.60E+01	MTCA B NCAR	1 U	--	--	--	--	--	--	--	--	--	--
Diethyl phthalate	1.28E+04	MTCA B NCAR	**1**	--	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	NV	NV	1 U	--	--	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	1.60E+03	MTCA B NCAR	1 U	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	1.60E+02	MTCA B NCAR	1 U	--	--	--	--	--	--	--	--	--	--
Fluoranthene	6.40E+02	MTCA B NCAR	1 U	--	--	--	--	--	--	--	--	--	--
Fluorene	6.40E+02	MTCA B NCAR	**0.8** J	--	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	5.47E-02	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	5.61E-01	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	4.80E+01	MTCA B NCAR	5 U	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	1.09E+00	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	1.20E-01	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--
Isophorone	4.61E+01	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--

		Location:	GP01	GP02	GP04	GP05	GP06	GP07	GP08	GP09	GP10	GP10	GP10
		Sample Name:	GP1-W-7.5	GP2-W-10	GP4-W-10	GP5-W-10	GP6-W-9	GP7-W-8	GP8-W-8	GP9-W-10	GP-10-W-7.5	GPDUP-W-7.5	GP10-W-16.5
		Collection Date:	05/06/2012	05/06/2012	05/07/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	12/03/2012	12/03/2012	12/03/2012
		Collection Depth (ft bgs):	5-10	5-15	8-12	8-12	7-11	6-10	6-10	8-12	5-10	5-10	14-19
	Groundwater CUL (ug/L)	**CUL Source**											
Naphthalene	1.60E+02	MTCA A	1 U	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	1.60E+01	MTCA B NCAR	1 U	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	1.79E+01	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--
N-Nitrosodipropylamine	1.25E-02	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	2.19E-01	MTCA B CAR	5 U	--	--	--	--	--	--	--	--	--	--
Phenanthrene	NV	NV	**0.6** J	--	--	--	--	--	--	--	--	--	--
Phenol	2.40E+03	MTCA B NCAR	1 U	--	--	--	--	--	--	--	--	--	--
Pyrene	4.80E+02	MTCA B NCAR	1 U	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes	1.20E-01	MTCA B CAR	1 U	--	--	--	--	--	--	--	--	--	--
SVOCs by SIM (ug/L)													
1-Methylnaphthalene	1.60E+02	MTCA A	**9.4**	0.1 U	0.1 U	**0.07** J	--	--	--	0.1 U	0.1 U	0.11 U	--
2-Methylnaphthalene	1.60E+02	MTCA A	**13**	**0.05** J	0.1 U	0.1 U	--	--	--	0.1 U	0.1 U	0.11 U	--
Acenaphthene	9.60E+02	MTCA B NCAR	**0.99**	0.1 U	0.1 U	**0.07** J	--	--	--	0.1 U	0.1 U	0.11 U	--
Acenaphthylene	NV	NV	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.1 U	0.1 U	0.11 U	--
Anthracene	4.80E+03	MTCA B NCAR	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.1 U	0.1 U	0.11 U	--
Benzo(a)anthracene	1.20E-01	MTCA B CAR	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.1 U	0.1 U	0.11 U	--
Benzo(a)pyrene	1.00E-01	MTCA A	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.1 U	0.1 U	0.11 U	--
Benzo(ghi)perylene	NV	NV	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.1 U	0.1 U	0.11 U	--
Chrysene	1.20E+01	MTCA B CAR	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.1 U	0.1 U	0.11 U	--
Dibenzo(a,h)anthracene	1.20E-02	MTCA B CAR	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.1 U	0.1 U	0.11 U	--
Dibenzofuran	1.60E+01	MTCA B NCAR	**0.28**	0.1 U	0.1 U	0.1 U	--	--	--	0.1 U	0.1 U	0.11 U	--
Fluoranthene	6.40E+02	MTCA B NCAR	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.1 U	0.1 U	0.11 U	--
Fluorene	6.40E+02	MTCA B NCAR	**1**	0.1 U	0.1 U	0.1 U	--	--	--	0.1 U	0.1 U	0.11 U	--
Indeno(1,2,3-cd)pyrene	1.20E-01	MTCA B CAR	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.1 U	0.1 U	0.11 U	--
Naphthalene	1.60E+02	MTCA A	**0.32**	0.1 U	0.1 U	**0.07** J	--	--	--	0.1 U	0.1 U	0.11 U	--
Phenanthrene	NV	NV	**0.87**	0.1 U	0.1 U	0.1 U	--	--	--	0.1 U	0.1 U	0.11 U	--
Pyrene	4.80E+02	MTCA B NCAR	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	0.1 U	0.1 U	0.11 U	--
Total Benzofluoranthenes	1.20E-01	MTCA B CAR	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	0.2 U	0.21 U	0.22 U	--
Hydrocarbon Identification (Presence/Absence)													
Gasoline-Range TPH	8.00E+02	MTCA A	--	--	--	ND	--	--	--	ND	--	--	--
Diesel-Range TPH	5.00E+02	MTCA A	--	--	--	ND	--	--	--	ND	--	--	--
Motor-Oil Range TPH	5.00E+02	MTCA A	--	--	--	ND	--	--	--	ND	--	--	--
Total Petroleum Hydrocarbons (ug/L)													
Gasoline-Range TPH	8.00E+02	MTCA A	**1800**	250 U	250 U	--	250 U	250 U	250 U	--	250 U	250 U	--
Diesel-Range TPH	5.00E+02	MTCA A	**3300**	100 U	100 U	--	--	--	--	--	100 U	100 U	--
Motor-Oil Range TPH	5.00E+02	MTCA A	**1100**	200 U	200 U	--	--	--	--	--	200 U	210 U	--

Table 5-2
Groundwater Analytical Results
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

		Location:	GP01	GP02	GP04	GP05	GP06	GP07	GP08	GP09	GP10	GP10	GP10
		Sample Name:	GP1-W-7.5	GP2-W-10	GP4-W-10	GP5-W-10	GP6-W-9	GP7-W-8	GP8-W-8	GP9-W-10	GP-10-W-7.5	GPDUP-W-7.5	GP10-W-16.5
		Collection Date:	05/06/2012	05/06/2012	05/07/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	12/03/2012	12/03/2012	12/03/2012
		Collection Depth (ft bgs):	5-10	5-15	8-12	8-12	7-11	6-10	6-10	8-12	5-10	5-10	14-19
	Groundwater CUL (ug/L)	**CUL Source**											
EPH (ug/L)													
Aliphatic C8-C10	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aliphatic C10-C12	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aliphatic C12-C16	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aliphatic C16-C21	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aliphatic C21-C34	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aromatic C8-C10	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aromatic C10-C12	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aromatic C12-C16	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aromatic C16-C21	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aromatic C21-C34	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Calculated Totals*													
cPAH TEQ by 8270	1.00E-01	MTCA A	ND	--	--	--	--	--	--	--	--	--	--
cPAH TEQ by 8270 SIM	1.00E-01	MTCA A	ND	ND	ND	ND	--	--	--	ND	ND	ND	--
Total naphthalenes by 8270	1.60E+02	MTCA A	**23.5**	--	--	--	--	--	--	--	--	--	--
Total naphthalenes by 8270 SIM	1.60E+02	MTCA A	**22.72**	**0.225** J	ND	**0.19** J	--	--	--	ND	ND	ND	--
Total PCBs	1.00E-01	MTCA A	**0.039**	--	--	--	--	--	--	--	--	--	--
Heavy Oils	5.00E+02	MTCA A	**4400**	ND	ND	--	--	--	--	--	ND	ND	--
Total Xylenes	1.00E+03	MTCA A	**1.5**	ND	ND	--	ND	ND	ND	--	ND	ND	--

		Location:	GP11	GP12	GP12	GP14	GP15	GP16	GP17	MW01	MW01	MW01	MW01
		Sample Name:	GP11-W-17.5	GP12-W-7.5	GP12-W-25.5	GP14-W-7.5	GP15-W-7.5	GP16-W-17.5	GP17-W-12.5	MW1-W-8.5	FIELD DUPLICATE	MW01-GW-20121009	MW01
		Collection Date:	12/02/2012	12/02/2012	12/02/2012	12/03/2012	12/03/2012	12/02/2012	12/03/2012	05/15/2012	05/15/2012	10/09/2012	04/10/2014
		Collection Depth (ft bgs):	15-20	5-10	23-28	5-10	5-10	15-20	10-15	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5
	Groundwater CUL (ug/L)	**CUL Source**											
Dissolved Metals (ug/L)													
Arsenic	5.00E+00	MTCA A	--	--	--	--	--	--	--	**0.6**	**0.6**	--	--
Barium	3.20E+03	MTCA B NCAR	--	--	--	--	--	--	--	**103**	**103**	--	--
Cadmium	5.00E+00	MTCA A	--	--	--	--	--	--	--	0.1 U	0.1 U	--	--
Chromium	5.00E+01	MTCA A	--	--	--	--	--	--	--	**0.9**	**1**	--	--
Iron	1.12E+04	MTCA B NCAR	**22800** J	**1110** J	**11100** J	--	--	--	--	--	--	--	--
Lead	1.50E+01	MTCA A	--	--	--	--	--	--	--	0.1 U	0.1 U	--	--
Mercury	2.00E+00	MTCA A	--	--	--	--	--	--	--	0.1 U	0.1 U	--	--
Selenium	8.00E+01	MTCA B NCAR	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--
Silver	8.00E+01	MTCA B NCAR	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--
PCB Aroclors (ug/L)													
Aroclor 1016	1.25E+00	MTCA B CAR	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	4.38E-02	MTCA B CAR	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	4.38E-02	MTCA B CAR	--	--	--	--	--	--	--	--	--	--	--
VOCs (ug/L)													
1,1,1,2-Tetrachloroethane	1.68E+00	MTCA B CAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
1,1,1-Trichloroethane	2.00E+02	MTCA A	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
1,1,2,2-Tetrachloroethane	2.19E-01	MTCA B CAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
1,1,2-Trichloroethane	7.68E-01	MTCA B CAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
1,1-Dichloroethane	7.68E+00	MTCA B CAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
1,1-Dichloroethene	4.00E+02	MTCA B NCAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
1,1-Dichloropropene	NV	NV	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
1,2,3-Trichlorobenzene	NV	NV	0.5 U	0.5 U	0.5 UR	--	--	--	--	0.5 U	0.5 U	--	0.5 U
1,2,3-Trichloropropane	1.46E-03	MTCA B CAR	0.5 U	0.5 U	0.5 UR	--	--	--	--	0.5 U	0.5 U	--	0.5 U
1,2,4-Trichlorobenzene	1.51E+00	MTCA B CAR	0.5 U	0.5 U	0.5 UR	--	--	--	--	0.5 U	0.5 U	--	0.5 U
1,2,4-Trimethylbenzene	NV	NV	**0.53**	0.2 U	**0.25** J	--	--	--	--	0.2 U	0.2 U	--	0.2 U
1,2-Dibromo-3-chloropropane	5.47E-02	MTCA B CAR	0.5 U	0.5 U	0.5 UR	--	--	--	--	0.5 U	0.5 U	--	0.5 U
1,2-Dibromoethane	1.00E-02	MTCA A	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
1,2-Dichlorobenzene	7.20E+02	MTCA B NCAR	**0.21**	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
1,2-Dichloroethane	5.00E+00	MTCA A	**0.19** J	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
1,2-Dichloropropane	1.22E+00	MTCA B CAR	**0.18** J	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
1,3,5-Trimethylbenzene	8.00E+01	MTCA B NCAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
1,3-Dichlorobenzene	NV	NV	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U

		Location:	GP11	GP12	GP12	GP14	GP15	GP16	GP17	MW01	MW01	MW01	MW01
		Sample Name:	GP11-W-17.5	GP12-W-7.5	GP12-W-25.5	GP14-W-7.5	GP15-W-7.5	GP16-W-17.5	GP17-W-12.5	MW1-W-8.5	FIELD DUPLICATE	MW01-GW-20121009	MW01
		Collection Date:	12/02/2012	12/02/2012	12/02/2012	12/03/2012	12/03/2012	12/02/2012	12/03/2012	05/15/2012	05/15/2012	10/09/2012	04/10/2014
		Collection Depth (ft bgs):	15-20	5-10	23-28	5-10	5-10	15-20	10-15	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5
	Groundwater CUL (ug/L)	**CUL Source**											
1,3-Dichloropropane	NV	NV	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
1,4-Dichlorobenzene	8.10E+00	MTCA B CAR	**0.52**	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
2,2-Dichloropropane	NV	NV	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
2-Butanone	4.80E+03	MTCA B NCAR	5 U	5 U	5 UR	--	--	--	--	5 U	5 U	--	5 U
2-Chloroethylvinyl ether	NV	NV	1 U	1 U	1 UR	--	--	--	--	1 U	1 U	--	1 U
2-Chlorotoluene	1.60E+02	MTCA B NCAR	**0.23**	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
2-Hexanone	NV	NV	5 U	5 U	5 UR	--	--	--	--	5 U	5 U	--	5 U
4-Chlorotoluene	NV	NV	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
4-Isopropyltoluene	NV	NV	0.2 U	0.2 U	0.2 UR	--	--	--	--	**0.9**	**1**	--	**0.21**
4-Methyl-2-pentanone	6.40E+02	MTCA B NCAR	5 U	5 U	5 UR	--	--	--	--	5 U	5 U	--	5 U
Acetone	7.20E+03	MTCA B NCAR	**2.4** J	**3.4** J	5 UR	--	--	--	--	5 U	5 U	--	5 U
Acrolein	4.00E+00	MTCA B NCAR	5 U	5 U	5 UR	--	--	--	--	5 U	5 U	--	5 U
Acrylonitrile	8.10E-02	MTCA B CAR	1 U	1 U	1 UR	--	--	--	--	1 U	1 U	--	1 U
Benzene	5.00E+00	MTCA A	**0.61**	0.2 U	**0.92** J	--	--	--	--	**0.3**	**0.3**	--	0.2 U
Bromobenzene	NV	NV	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Bromodichloromethane	7.06E-01	MTCA B CAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Bromoethane	NV	NV	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Bromoform	5.54E+00	MTCA B CAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Bromomethane	1.12E+01	MTCA B NCAR	1 U	1 U	1 UR	--	--	--	--	1 U	1 U	--	1 U
Carbon disulfide	8.00E+02	MTCA B NCAR	**0.19** J	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Carbon tetrachloride	6.25E-01	MTCA B CAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Chlorobenzene	1.60E+02	MTCA B NCAR	**49**	**0.2**	0.2 UR	--	--	--	--	**4.6**	**4.8**	--	**0.5**
Chlorobromomethane	NV	NV	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Chloroethane	NV	NV	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Chloroform	1.41E+00	MTCA B CAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Chloromethane	NV	NV	0.5 U	0.5 U	0.5 UR	--	--	--	--	0.5 U	0.5 U	--	0.5 U
cis-1,2-Dichloroethene	1.60E+01	MTCA B NCAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
cis-1,3-Dichloropropene	NV	NV	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Dibromochloromethane	5.21E-01	MTCA B CAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Dibromomethane	8.00E+01	MTCA B NCAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Ethylbenzene	7.00E+02	MTCA A	0.2 U	0.2 U	**0.28** J	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Freon 113	2.40E+05	MTCA B NCAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Hexachlorobutadiene	5.61E-01	MTCA B CAR	0.5 U	0.5 U	0.5 UR	--	--	--	--	0.5 U	0.5 U	--	0.5 U
Isopropylbenzene	8.00E+02	MTCA B NCAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	**2.8**	**3.2**	--	**0.76**
m,p-Xylene	1.00E+03	MTCA A	0.4 U	0.4 U	**0.82** J	--	--	--	--	0.4 U	0.4 U	--	0.4 U
Methyl iodide	NV	NV	1 U	1 U	1 UR	--	--	--	--	1 U	1 U	--	1 U
Methylene chloride	5.00E+00	MTCA A	1 U	1 U	1 UR	--	--	--	--	1 U	1 U	--	1 U

		Location:	GP11	GP12	GP12	GP14	GP15	GP16	GP17	MW01	MW01	MW01	MW01
		Sample Name:	GP11-W-17.5	GP12-W-7.5	GP12-W-25.5	GP14-W-7.5	GP15-W-7.5	GP16-W-17.5	GP17-W-12.5	MW1-W-8.5	FIELD DUPLICATE	MW01-GW-20121009	MW01
		Collection Date:	12/02/2012	12/02/2012	12/02/2012	12/03/2012	12/03/2012	12/02/2012	12/03/2012	05/15/2012	05/15/2012	10/09/2012	04/10/2014
		Collection Depth (ft bgs):	15-20	5-10	23-28	5-10	5-10	15-20	10-15	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5
	Groundwater CUL (ug/L)	**CUL Source**											
Naphthalene	1.60E+02	MTCA A	0.5 U	0.5 U	0.5 UR	--	--	--	--	**0.7**	**1**	--	0.5 U
n-Butylbenzene	4.00E+02	MTCA B NCAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	**0.5**	**0.5**	--	**0.31** J
n-Propylbenzene	8.00E+02	MTCA B NCAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
o-Xylene	1.60E+03	MTCA B NCAR	**0.16** J	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
sec-Butylbenzene	8.00E+02	MTCA B NCAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	**2**	**2.2**	--	**1.2**
Styrene	1.60E+03	MTCA B NCAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
tert-Butylbenzene	8.00E+02	MTCA B NCAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	**0.3**	**0.3**	--	0.2 U
Tetrachloroethene	5.00E+00	MTCA A	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Toluene	1.00E+03	MTCA A	**0.26**	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
trans-1,2-dichloroethene	1.60E+02	MTCA B NCAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
trans-1,3-Dichloropropene	NV	NV	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
trans-1,4-Dichloro-2-butene	NV	NV	1 U	1 U	1 UR	--	--	--	--	1 U	1 U	--	1 U
Trichloroethene	5.00E+00	MTCA A	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Trichlorofluoromethane	2.40E+03	MTCA B NCAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Vinyl Acetate	8.00E+03	MTCA B NCAR	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
Vinyl chloride	2.00E-01	MTCA A	0.2 U	0.2 U	0.2 UR	--	--	--	--	0.2 U	0.2 U	--	0.2 U
SVOCs (ug/L)													
1,2,4-Trichlorobenzene	1.51E+00	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
1,2-Dichlorobenzene	7.20E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
1,3-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	1 U	1 U	--	--
1,4-Dichlorobenzene	8.10E+00	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
1-Methylnaphthalene	1.60E+02	MTCA A	--	--	--	--	--	--	--	**11**	**12**	--	--
2,4,5-Trichlorophenol	8.00E+02	MTCA B NCAR	--	--	--	--	--	--	--	5 U	5 U	--	--
2,4,6-Trichlorophenol	3.98E+00	MTCA B CAR	--	--	--	--	--	--	--	5 U	5 U	--	--
2,4-Dichlorophenol	2.40E+01	MTCA B NCAR	--	--	--	--	--	--	--	5 U	5 U	--	--
2,4-Dimethylphenol	1.60E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
2,4-Dinitrophenol	3.20E+01	MTCA B NCAR	--	--	--	--	--	--	--	10 U	10 U	--	--
2,4-Dinitrotoluene	2.82E-01	MTCA B CAR	--	--	--	--	--	--	--	5 U	5 U	--	--
2,6-Dinitrotoluene	5.83E-02	MTCA B CAR	--	--	--	--	--	--	--	5 U	5 U	--	--
2-Chloronaphthalene	6.40E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
2-Chlorophenol	4.00E+01	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
2-Methylnaphthalene	1.60E+02	MTCA A	--	--	--	--	--	--	--	**1.9**	**2.1**	--	--
2-Methylphenol	4.00E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
2-Nitroaniline	1.60E+02	MTCA B NCAR	--	--	--	--	--	--	--	5 U	5 U	--	--
2-Nitrophenol	NV	NV	--	--	--	--	--	--	--	5 U	5 U	--	--
3,3-Dichlorobenzidine	1.94E-01	MTCA B CAR	--	--	--	--	--	--	--	5 U	5 U	--	--
3-Nitroaniline	NV	NV	--	--	--	--	--	--	--	5 U	5 U	--	--

		Location:	GP11	GP12	GP12	GP14	GP15	GP16	GP17	MW01	MW01	MW01	MW01
		Sample Name:	GP11-W-17.5	GP12-W-7.5	GP12-W-25.5	GP14-W-7.5	GP15-W-7.5	GP16-W-17.5	GP17-W-12.5	MW1-W-8.5	FIELD DUPLICATE	MW01-GW-20121009	MW01
		Collection Date:	12/02/2012	12/02/2012	12/02/2012	12/03/2012	12/03/2012	12/02/2012	12/03/2012	05/15/2012	05/15/2012	10/09/2012	04/10/2014
		Collection Depth (ft bgs):	15-20	5-10	23-28	5-10	5-10	15-20	10-15	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5
	Groundwater CUL (ug/L)	**CUL Source**											
4,6-Dinitro-2-methylphenol	NV	NV	--	--	--	--	--	--	--	10 U	10 U	--	--
4-Bromophenylphenyl ether	NV	NV	--	--	--	--	--	--	--	1 U	1 U	--	--
4-Chloro-3-methylphenol	NV	NV	--	--	--	--	--	--	--	5 U	5 U	--	--
4-Chloroaniline	2.19E-01	MTCA B CAR	--	--	--	--	--	--	--	5 U	5 U	--	--
4-Chlorophenylphenyl ether	NV	NV	--	--	--	--	--	--	--	1 U	1 U	--	--
4-Methylphenol	8.00E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
4-Nitroaniline	NV	NV	--	--	--	--	--	--	--	5 U	5 U	--	--
4-Nitrophenol	NV	NV	--	--	--	--	--	--	--	5 U	5 U	--	--
Acenaphthene	9.60E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Acenaphthylene	NV	NV	--	--	--	--	--	--	--	1 U	1 U	--	--
Anthracene	4.80E+03	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Benzo(a)anthracene	1.20E-01	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Benzo(a)pyrene	1.00E-01	MTCA A	--	--	--	--	--	--	--	1 U	1 U	--	--
Benzo(ghi)perylene	NV	NV	--	--	--	--	--	--	--	1 U	1 U	--	--
Benzoic acid	6.40E+04	MTCA B NCAR	--	--	--	--	--	--	--	10 U	10 U	--	--
Benzyl alcohol	8.00E+02	MTCA B NCAR	--	--	--	--	--	--	--	5 U	5 U	--	--
Bis(2-chloro-1-methylethyl)ether	6.25E-01	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Bis(2-chloroethoxy)methane	NV	NV	--	--	--	--	--	--	--	1 U	1 U	--	--
Bis(2-chloroethyl)ether	3.98E-02	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Bis(2-ethylhexyl)phthalate	6.25E+00	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Butylbenzylphthalate	4.61E+01	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Carbazole	NV	NV	--	--	--	--	--	--	--	1 U	1 U	--	--
Chrysene	1.20E+01	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Dibenzo(a,h)anthracene	1.20E-02	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Dibenzofuran	1.60E+01	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Diethyl phthalate	1.28E+04	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Dimethyl phthalate	NV	NV	--	--	--	--	--	--	--	1 U	1 U	--	--
Di-n-butyl phthalate	1.60E+03	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Di-n-octyl phthalate	1.60E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Fluoranthene	6.40E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Fluorene	6.40E+02	MTCA B NCAR	--	--	--	--	--	--	--	**2**	**2**	--	--
Hexachlorobenzene	5.47E-02	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Hexachlorobutadiene	5.61E-01	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Hexachlorocyclopentadiene	4.80E+01	MTCA B NCAR	--	--	--	--	--	--	--	5 U	5 U	--	--
Hexachloroethane	1.09E+00	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Indeno(1,2,3-cd)pyrene	1.20E-01	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Isophorone	4.61E+01	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--

Table 5-2
Groundwater Analytical Results
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

		Location:	GP11	GP12	GP12	GP14	GP15	GP16	GP17	MW01	MW01	MW01	MW01
		Sample Name:	GP11-W-17.5	GP12-W-7.5	GP12-W-25.5	GP14-W-7.5	GP15-W-7.5	GP16-W-17.5	GP17-W-12.5	MW1-W-8.5	FIELD DUPLICATE	MW01-GW-20121009	MW01
		Collection Date:	12/02/2012	12/02/2012	12/02/2012	12/03/2012	12/03/2012	12/02/2012	12/03/2012	05/15/2012	05/15/2012	10/09/2012	04/10/2014
		Collection Depth (ft bgs):	15-20	5-10	23-28	5-10	5-10	15-20	10-15	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5
	Groundwater CUL (ug/L)	**CUL Source**											
Naphthalene	1.60E+02	MTCA A	--	--	--	--	--	--	--	1 U	1 U	--	--
Nitrobenzene	1.60E+01	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
N-Nitrosodiphenylamine	1.79E+01	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
N-Nitrosodipropylamine	1.25E-02	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Pentachlorophenol	2.19E-01	MTCA B CAR	--	--	--	--	--	--	--	5 U	5 U	--	--
Phenanthrene	NV	NV	--	--	--	--	--	--	--	**1.4**	**1.5**	--	--
Phenol	2.40E+03	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Pyrene	4.80E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	1 U	--	--
Total Benzofluoranthenes	1.20E-01	MTCA B CAR	--	--	--	--	--	--	--	1 U	1 U	--	--
SVOCs by SIM (ug/L)													
1-Methylnaphthalene	1.60E+02	MTCA A	0.11 U	**0.06** J	**0.18** J	--	--	--	--	**8.5**	**9.1**	**11**	--
2-Methylnaphthalene	1.60E+02	MTCA A	0.11 U	**0.06** J	0.1 UJ	--	--	--	--	**1.8**	**2**	0.1 U	--
Acenaphthene	9.60E+02	MTCA B NCAR	0.11 U	0.1 U	0.1 UJ	--	--	--	--	**0.83**	**0.41**	**0.93**	--
Acenaphthylene	NV	NV	0.11 U	0.1 U	0.1 UJ	--	--	--	--	0.1 U	0.1 U	0.1 U	--
Anthracene	4.80E+03	MTCA B NCAR	0.11 U	0.1 U	0.1 UJ	--	--	--	--	0.1 U	0.1 U	0.1 U	--
Benzo(a)anthracene	1.20E-01	MTCA B CAR	0.11 U	0.1 U	0.1 UJ	--	--	--	--	0.1 U	0.1 U	0.1 U	--
Benzo(a)pyrene	1.00E-01	MTCA A	0.11 U	0.1 U	0.1 UJ	--	--	--	--	0.1 U	0.1 U	0.1 U	--
Benzo(ghi)perylene	NV	NV	0.11 U	0.1 U	0.1 UJ	--	--	--	--	0.1 U	0.1 U	0.1 U	--
Chrysene	1.20E+01	MTCA B CAR	0.11 U	0.1 U	0.1 UJ	--	--	--	--	0.1 U	0.1 U	0.1 U	--
Dibenzo(a,h)anthracene	1.20E-02	MTCA B CAR	0.11 U	0.1 U	0.1 UJ	--	--	--	--	0.1 U	0.1 U	0.1 U	--
Dibenzofuran	1.60E+01	MTCA B NCAR	0.11 U	0.1 U	0.1 UJ	--	--	--	--	0.1 U	0.1 U	0.1 U	--
Fluoranthene	6.40E+02	MTCA B NCAR	0.11 U	0.1 U	0.1 UJ	--	--	--	--	0.1 U	0.1 U	0.1 U	--
Fluorene	6.40E+02	MTCA B NCAR	0.11 U	0.1 U	0.1 UJ	--	--	--	--	**2**	**2**	**2.7**	--
Indeno(1,2,3-cd)pyrene	1.20E-01	MTCA B CAR	0.11 U	0.1 U	0.1 UJ	--	--	--	--	0.1 U	0.1 U	0.1 U	--
Naphthalene	1.60E+02	MTCA A	0.11 U	0.1 U	0.1 UJ	--	--	--	--	**0.23**	**0.26**	**0.13**	--
Phenanthrene	NV	NV	0.11 U	0.1 U	0.1 UJ	--	--	--	--	**1.5**	**1.4**	**1.8**	--
Pyrene	4.80E+02	MTCA B NCAR	0.11 U	0.1 U	0.1 UJ	--	--	--	--	0.1 U	0.1 U	0.1 U	--
Total Benzofluoranthenes	1.20E-01	MTCA B CAR	0.22 U	0.21 U	0.2 UJ	--	--	--	--	0.2 U	0.2 U	0.2 U	--
Hydrocarbon Identification (Presence/Absence)													
Gasoline-Range TPH	8.00E+02	MTCA A	--	--	--	--	--	--	--	--	--	--	--
Diesel-Range TPH	5.00E+02	MTCA A	--	--	--	--	--	--	--	--	--	--	--
Motor-Oil Range TPH	5.00E+02	MTCA A	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (ug/L)													
Gasoline-Range TPH	8.00E+02	MTCA A	250 U	250 U	--	--	--	250 U	250 U	**400**	**380**	--	250 U
Diesel-Range TPH	5.00E+02	MTCA A	**980**	**710**	100 UJ	110 U	110 U	100 U	110 U	**1300**	**1200**	**1800**	**1700**
Motor-Oil Range TPH	5.00E+02	MTCA A	**310**	**400**	200 UJ	220 U	220 U	200 U	220 U	**240**	**220**	**490**	**870**

		Location:	GP11	GP12	GP12	GP14	GP15	GP16	GP17	MW01	MW01	MW01	MW01
		Sample Name:	GP11-W-17.5	GP12-W-7.5	GP12-W-25.5	GP14-W-7.5	GP15-W-7.5	GP16-W-17.5	GP17-W-12.5	MW1-W-8.5	FIELD DUPLICATE	MW01-GW-20121009	MW01
		Collection Date:	12/02/2012	12/02/2012	12/02/2012	12/03/2012	12/03/2012	12/02/2012	12/03/2012	05/15/2012	05/15/2012	10/09/2012	04/10/2014
		Collection Depth (ft bgs):	15-20	5-10	23-28	5-10	5-10	15-20	10-15	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5
	Groundwater CUL (ug/L)	**CUL Source**											
EPH (ug/L)													
Aliphatic C8-C10	NV	NV	--	--	--	--	--	--	--	--	--	--	40 U
Aliphatic C10-C12	NV	NV	--	--	--	--	--	--	--	--	--	--	40 U
Aliphatic C12-C16	NV	NV	--	--	--	--	--	--	--	--	--	--	40 U
Aliphatic C16-C21	NV	NV	--	--	--	--	--	--	--	--	--	--	40 U
Aliphatic C21-C34	NV	NV	--	--	--	--	--	--	--	--	--	--	40 U
Aromatic C8-C10	NV	NV	--	--	--	--	--	--	--	--	--	--	40 U
Aromatic C10-C12	NV	NV	--	--	--	--	--	--	--	--	--	--	40 U
Aromatic C12-C16	NV	NV	--	--	--	--	--	--	--	--	--	--	40 U
Aromatic C16-C21	NV	NV	--	--	--	--	--	--	--	--	--	--	40 U
Aromatic C21-C34	NV	NV	--	--	--	--	--	--	--	--	--	--	40 U
Calculated Totals*													
cPAH TEQ by 8270	1.00E-01	MTCA A	--	--	--	--	--	--	--	ND	ND	--	--
cPAH TEQ by 8270 SIM	1.00E-01	MTCA A	ND	ND	ND	--	--	--	--	ND	ND	ND	--
Total naphthalenes by 8270	1.60E+02	MTCA A	--	--	--	--	--	--	--	**13.4**	**14.6**	--	--
Total naphthalenes by 8270 SIM	1.60E+02	MTCA A	ND	**0.17** J	**0.28** J	--	--	--	--	**10.53**	**11.36**	**11.18**	--
Total PCBs	1.00E-01	MTCA A	--	--	--	--	--	--	--	--	--	--	--
Heavy Oils	5.00E+02	MTCA A	**1290**	**1110**	ND	ND	ND	ND	ND	**1540**	**1420**	**2290**	**2570**
Total Xylenes	1.00E+03	MTCA A	**0.36**	ND	**0.92**	--	--	--	--	ND	ND	--	ND

		Location:	MW01	MW01	MW01	MW01	MW01	MW01	MW01	MW02	MW02	MW02	MW02
		Sample Name:	MWDUP	MW01-GW-140618	FD-GW-140618	MW01-GW-091014	FD-091014	MW01-GW-121014	FD-121014	MW2-W-9	MW02-GW-20121009	MW02	MW02-GW-140618
		Collection Date:	04/10/2014	06/18/2014	06/18/2014	09/10/2014	09/10/2014	12/10/2014	12/10/2014	05/16/2012	10/09/2012	04/10/2014	06/18/2014
		Collection Depth (ft bgs):	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	4-14	4-14	4-14	4-14
	Groundwater CUL (ug/L)	**CUL Source**											
Dissolved Metals (ug/L)													
Arsenic	5.00E+00	MTCA A	--	--	--	--	--	--	--	**2.9**	--	--	--
Barium	3.20E+03	MTCA B NCAR	--	--	--	--	--	--	--	**31**	--	--	--
Cadmium	5.00E+00	MTCA A	--	--	--	--	--	--	--	0.1 U	--	--	--
Chromium	5.00E+01	MTCA A	--	--	--	--	--	--	--	1 U	--	--	--
Iron	1.12E+04	MTCA B NCAR	--	--	--	--	--	--	--	--	--	--	--
Lead	1.50E+01	MTCA A	--	--	--	--	--	--	--	0.1 U	--	--	--
Mercury	2.00E+00	MTCA A	--	--	--	--	--	--	--	0.1 U	--	--	--
Selenium	8.00E+01	MTCA B NCAR	--	--	--	--	--	--	--	0.5 U	--	--	--
Silver	8.00E+01	MTCA B NCAR	--	--	--	--	--	--	--	0.2 U	--	--	--
PCB Aroclors (ug/L)													
Aroclor 1016	1.25E+00	MTCA B CAR	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1221	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1232	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1242	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1248	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1254	4.38E-02	MTCA B CAR	--	--	--	--	--	--	--	--	--	--	--
Aroclor 1260	4.38E-02	MTCA B CAR	--	--	--	--	--	--	--	--	--	--	--
VOCs (ug/L)													
1,1,1,2-Tetrachloroethane	1.68E+00	MTCA B CAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
1,1,1-Trichloroethane	2.00E+02	MTCA A	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
1,1,2,2-Tetrachloroethane	2.19E-01	MTCA B CAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
1,1,2-Trichloroethane	7.68E-01	MTCA B CAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
1,1-Dichloroethane	7.68E+00	MTCA B CAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
1,1-Dichloroethene	4.00E+02	MTCA B NCAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
1,1-Dichloropropene	NV	NV	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
1,2,3-Trichlorobenzene	NV	NV	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
1,2,3-Trichloropropane	1.46E-03	MTCA B CAR	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
1,2,4-Trichlorobenzene	1.51E+00	MTCA B CAR	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
1,2,4-Trimethylbenzene	NV	NV	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
1,2-Dibromo-3-chloropropane	5.47E-02	MTCA B CAR	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
1,2-Dibromoethane	1.00E-02	MTCA A	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
1,2-Dichlorobenzene	7.20E+02	MTCA B NCAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
1,2-Dichloroethane	5.00E+00	MTCA A	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
1,2-Dichloropropane	1.22E+00	MTCA B CAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
1,3,5-Trimethylbenzene	8.00E+01	MTCA B NCAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
1,3-Dichlorobenzene	NV	NV	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--

		Location:	MW01	MW01	MW01	MW01	MW01	MW01	MW01	MW02	MW02	MW02	MW02
		Sample Name:	MWDUP	MW01-GW-140618	FD-GW-140618	MW01-GW-091014	FD-091014	MW01-GW-121014	FD-121014	MW2-W-9	MW02-GW-20121009	MW02	MW02-GW-140618
		Collection Date:	04/10/2014	06/18/2014	06/18/2014	09/10/2014	09/10/2014	12/10/2014	12/10/2014	05/16/2012	10/09/2012	04/10/2014	06/18/2014
		Collection Depth (ft bgs):	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	4-14	4-14	4-14	4-14
	Groundwater CUL (ug/L)	**CUL Source**											
1,3-Dichloropropane	NV	NV	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
1,4-Dichlorobenzene	8.10E+00	MTCA B CAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
2,2-Dichloropropane	NV	NV	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
2-Butanone	4.80E+03	MTCA B NCAR	5 U	--	--	--	--	--	--	5 U	--	--	--
2-Chloroethylvinyl ether	NV	NV	1 U	--	--	--	--	--	--	1 U	--	--	--
2-Chlorotoluene	1.60E+02	MTCA B NCAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
2-Hexanone	NV	NV	5 U	--	--	--	--	--	--	5 U	--	--	--
4-Chlorotoluene	NV	NV	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
4-Isopropyltoluene	NV	NV	**0.22**	--	--	--	--	--	--	0.2 U	--	--	--
4-Methyl-2-pentanone	6.40E+02	MTCA B NCAR	5 U	--	--	--	--	--	--	5 U	--	--	--
Acetone	7.20E+03	MTCA B NCAR	5 U	--	--	--	--	--	--	5 U	--	--	--
Acrolein	4.00E+00	MTCA B NCAR	5 U	--	--	--	--	--	--	5 U	--	--	--
Acrylonitrile	8.10E-02	MTCA B CAR	1 U	--	--	--	--	--	--	1 U	--	--	--
Benzene	5.00E+00	MTCA A	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Bromobenzene	NV	NV	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Bromodichloromethane	7.06E-01	MTCA B CAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Bromoethane	NV	NV	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Bromoform	5.54E+00	MTCA B CAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Bromomethane	1.12E+01	MTCA B NCAR	1 U	--	--	--	--	--	--	1 U	--	--	--
Carbon disulfide	8.00E+02	MTCA B NCAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Carbon tetrachloride	6.25E-01	MTCA B CAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Chlorobenzene	1.60E+02	MTCA B NCAR	**0.53**	--	--	--	--	--	--	0.2 U	--	--	--
Chlorobromomethane	NV	NV	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Chloroethane	NV	NV	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Chloroform	1.41E+00	MTCA B CAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Chloromethane	NV	NV	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
cis-1,2-Dichloroethene	1.60E+01	MTCA B NCAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
cis-1,3-Dichloropropene	NV	NV	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Dibromochloromethane	5.21E-01	MTCA B CAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Dibromomethane	8.00E+01	MTCA B NCAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Ethylbenzene	7.00E+02	MTCA A	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Freon 113	2.40E+05	MTCA B NCAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Hexachlorobutadiene	5.61E-01	MTCA B CAR	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
Isopropylbenzene	8.00E+02	MTCA B NCAR	**0.81**	--	--	--	--	--	--	0.2 U	--	--	--
m,p-Xylene	1.00E+03	MTCA A	0.4 U	--	--	--	--	--	--	0.4 U	--	--	--
Methyl iodide	NV	NV	1 U	--	--	--	--	--	--	1 U	--	--	--
Methylene chloride	5.00E+00	MTCA A	1 U	--	--	--	--	--	--	1 U	--	--	--

		Location:	MW01	MW01	MW01	MW01	MW01	MW01	MW01	MW02	MW02	MW02	MW02
		Sample Name:	MWDUP	MW01-GW-140618	FD-GW-140618	MW01-GW-091014	FD-091014	MW01-GW-121014	FD-121014	MW2-W-9	MW02-GW-20121009	MW02	MW02-GW-140618
		Collection Date:	04/10/2014	06/18/2014	06/18/2014	09/10/2014	09/10/2014	12/10/2014	12/10/2014	05/16/2012	10/09/2012	04/10/2014	06/18/2014
		Collection Depth (ft bgs):	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	4-14	4-14	4-14	4-14
	Groundwater CUL (ug/L)	**CUL Source**											
Naphthalene	1.60E+02	MTCA A	0.5 U	--	--	--	--	--	--	0.5 U	--	--	--
n-Butylbenzene	4.00E+02	MTCA B NCAR	**0.33** J	--	--	--	--	--	--	0.2 U	--	--	--
n-Propylbenzene	8.00E+02	MTCA B NCAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
o-Xylene	1.60E+03	MTCA B NCAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
sec-Butylbenzene	8.00E+02	MTCA B NCAR	**1.3**	--	--	--	--	--	--	0.2 U	--	--	--
Styrene	1.60E+03	MTCA B NCAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
tert-Butylbenzene	8.00E+02	MTCA B NCAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Tetrachloroethene	5.00E+00	MTCA A	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Toluene	1.00E+03	MTCA A	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
trans-1,2-dichloroethene	1.60E+02	MTCA B NCAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
trans-1,3-Dichloropropene	NV	NV	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
trans-1,4-Dichloro-2-butene	NV	NV	1 U	--	--	--	--	--	--	1 U	--	--	--
Trichloroethene	5.00E+00	MTCA A	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Trichlorofluoromethane	2.40E+03	MTCA B NCAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Vinyl Acetate	8.00E+03	MTCA B NCAR	0.2 U	--	--	--	--	--	--	0.2 U	--	--	--
Vinyl chloride	2.00E-01	MTCA A	0.2 U							0.2 U	--	--	--
SVOCs (ug/L)													
1,2,4-Trichlorobenzene	1.51E+00	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
1,2-Dichlorobenzene	7.20E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
1,3-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	1 U	--	--	--
1,4-Dichlorobenzene	8.10E+00	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
1-Methylnaphthalene	1.60E+02	MTCA A	--	--	--	--	--	--	--	1 U	--	--	--
2,4,5-Trichlorophenol	8.00E+02	MTCA B NCAR	--	--	--	--	--	--	--	5 U	--	--	--
2,4,6-Trichlorophenol	3.98E+00	MTCA B CAR	--	--	--	--	--	--	--	5 U	--	--	--
2,4-Dichlorophenol	2.40E+01	MTCA B NCAR	--	--	--	--	--	--	--	5 U	--	--	--
2,4-Dimethylphenol	1.60E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
2,4-Dinitrophenol	3.20E+01	MTCA B NCAR	--	--	--	--	--	--	--	10 U	--	--	--
2,4-Dinitrotoluene	2.82E-01	MTCA B CAR	--	--	--	--	--	--	--	5 U	--	--	--
2,6-Dinitrotoluene	5.83E-02	MTCA B CAR	--	--	--	--	--	--	--	5 U	--	--	--
2-Chloronaphthalene	6.40E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
2-Chlorophenol	4.00E+01	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
2-Methylnaphthalene	1.60E+02	MTCA A	--	--	--	--	--	--	--	1 U	--	--	--
2-Methylphenol	4.00E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
2-Nitroaniline	1.60E+02	MTCA B NCAR	--	--	--	--	--	--	--	5 U	--	--	--
2-Nitrophenol	NV	NV	--	--	--	--	--	--	--	5 U	--	--	--
3,3-Dichlorobenzidine	1.94E-01	MTCA B CAR	--	--	--	--	--	--	--	5 U	--	--	--
3-Nitroaniline	NV	NV	--	--	--	--	--	--	--	5 U	--	--	--

		Location:	MW01	MW01	MW01	MW01	MW01	MW01	MW01	MW02	MW02	MW02	MW02
		Sample Name:	MWDUP	MW01-GW-140618	FD-GW-140618	MW01-GW-091014	FD-091014	MW01-GW-121014	FD-121014	MW2-W-9	MW02-GW-20121009	MW02	MW02-GW-140618
		Collection Date:	04/10/2014	06/18/2014	06/18/2014	09/10/2014	09/10/2014	12/10/2014	12/10/2014	05/16/2012	10/09/2012	04/10/2014	06/18/2014
		Collection Depth (ft bgs):	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	4-14	4-14	4-14	4-14
	Groundwater CUL (ug/L)	**CUL Source**											
4,6-Dinitro-2-methylphenol	NV	NV	--	--	--	--	--	--	--	10 U	--	--	--
4-Bromophenylphenyl ether	NV	NV	--	--	--	--	--	--	--	1 U	--	--	--
4-Chloro-3-methylphenol	NV	NV	--	--	--	--	--	--	--	5 U	--	--	--
4-Chloroaniline	2.19E-01	MTCA B CAR	--	--	--	--	--	--	--	5 U	--	--	--
4-Chlorophenylphenyl ether	NV	NV	--	--	--	--	--	--	--	1 U	--	--	--
4-Methylphenol	8.00E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
4-Nitroaniline	NV	NV	--	--	--	--	--	--	--	5 U	--	--	--
4-Nitrophenol	NV	NV	--	--	--	--	--	--	--	5 U	--	--	--
Acenaphthene	9.60E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
Acenaphthylene	NV	NV	--	--	--	--	--	--	--	1 U	--	--	--
Anthracene	4.80E+03	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
Benzo(a)anthracene	1.20E-01	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
Benzo(a)pyrene	1.00E-01	MTCA A	--	--	--	--	--	--	--	1 U	--	--	--
Benzo(ghi)perylene	NV	NV	--	--	--	--	--	--	--	1 U	--	--	--
Benzoic acid	6.40E+04	MTCA B NCAR	--	--	--	--	--	--	--	10 U	--	--	--
Benzyl alcohol	8.00E+02	MTCA B NCAR	--	--	--	--	--	--	--	5 U	--	--	--
Bis(2-chloro-1-methylethyl)ether	6.25E-01	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
Bis(2-chloroethoxy)methane	NV	NV	--	--	--	--	--	--	--	1 U	--	--	--
Bis(2-chloroethyl)ether	3.98E-02	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
Bis(2-ethylhexyl)phthalate	6.25E+00	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
Butylbenzylphthalate	4.61E+01	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
Carbazole	NV	NV	--	--	--	--	--	--	--	1 U	--	--	--
Chrysene	1.20E+01	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
Dibenzo(a,h)anthracene	1.20E-02	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
Dibenzofuran	1.60E+01	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
Diethyl phthalate	1.28E+04	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
Dimethyl phthalate	NV	NV	--	--	--	--	--	--	--	1 U	--	--	--
Di-n-butyl phthalate	1.60E+03	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
Di-n-octyl phthalate	1.60E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
Fluoranthene	6.40E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
Fluorene	6.40E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
Hexachlorobenzene	5.47E-02	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
Hexachlorobutadiene	5.61E-01	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
Hexachlorocyclopentadiene	4.80E+01	MTCA B NCAR	--	--	--	--	--	--	--	5 U	--	--	--
Hexachloroethane	1.09E+00	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
Indeno(1,2,3-cd)pyrene	1.20E-01	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
Isophorone	4.61E+01	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--

		Location:	MW01	MW01	MW01	MW01	MW01	MW01	MW01	MW02	MW02	MW02	MW02
		Sample Name:	MWDUP	MW01-GW-140618	FD-GW-140618	MW01-GW-091014	FD-091014	MW01-GW-121014	FD-121014	MW2-W-9	MW02-GW-20121009	MW02	MW02-GW-140618
		Collection Date:	04/10/2014	06/18/2014	06/18/2014	09/10/2014	09/10/2014	12/10/2014	12/10/2014	05/16/2012	10/09/2012	04/10/2014	06/18/2014
		Collection Depth (ft bgs):	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	4-14	4-14	4-14	4-14
	Groundwater CUL (ug/L)	**CUL Source**											
Naphthalene	1.60E+02	MTCA A	--	--	--	--	--	--	--	1 U	--	--	--
Nitrobenzene	1.60E+01	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
N-Nitrosodiphenylamine	1.79E+01	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
N-Nitrosodipropylamine	1.25E-02	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
Pentachlorophenol	2.19E-01	MTCA B CAR	--	--	--	--	--	--	--	5 U	--	--	--
Phenanthrene	NV	NV	--	--	--	--	--	--	--	1 U	--	--	--
Phenol	2.40E+03	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
Pyrene	4.80E+02	MTCA B NCAR	--	--	--	--	--	--	--	1 U	--	--	--
Total Benzofluoranthenes	1.20E-01	MTCA B CAR	--	--	--	--	--	--	--	1 U	--	--	--
SVOCs by SIM (ug/L)													
1-Methylnaphthalene	1.60E+02	MTCA A	--	--	--	--	--	--	--	0.1 U	--	--	--
2-Methylnaphthalene	1.60E+02	MTCA A	--	--	--	--	--	--	--	0.1 U	--	--	--
Acenaphthene	9.60E+02	MTCA B NCAR	--	--	--	--	--	--	--	**0.38**	--	--	--
Acenaphthylene	NV	NV	--	--	--	--	--	--	--	0.1 U	--	--	--
Anthracene	4.80E+03	MTCA B NCAR	--	--	--	--	--	--	--	0.1 U	--	--	--
Benzo(a)anthracene	1.20E-01	MTCA B CAR	--	--	--	--	--	--	--	0.1 U	--	--	--
Benzo(a)pyrene	1.00E-01	MTCA A	--	--	--	--	--	--	--	0.1 U	--	--	--
Benzo(ghi)perylene	NV	NV	--	--	--	--	--	--	--	0.1 U	--	--	--
Chrysene	1.20E+01	MTCA B CAR	--	--	--	--	--	--	--	0.1 U	--	--	--
Dibenzo(a,h)anthracene	1.20E-02	MTCA B CAR	--	--	--	--	--	--	--	0.1 U	--	--	--
Dibenzofuran	1.60E+01	MTCA B NCAR	--	--	--	--	--	--	--	0.1 U	--	--	--
Fluoranthene	6.40E+02	MTCA B NCAR	--	--	--	--	--	--	--	0.1 U	--	--	--
Fluorene	6.40E+02	MTCA B NCAR	--	--	--	--	--	--	--	**0.68**	--	--	--
Indeno(1,2,3-cd)pyrene	1.20E-01	MTCA B CAR	--	--	--	--	--	--	--	0.1 U	--	--	--
Naphthalene	1.60E+02	MTCA A	--	--	--	--	--	--	--	0.1 U	--	--	--
Phenanthrene	NV	NV	--	--	--	--	--	--	--	0.1 U	--	--	--
Pyrene	4.80E+02	MTCA B NCAR	--	--	--	--	--	--	--	0.1 U	--	--	--
Total Benzofluoranthenes	1.20E-01	MTCA B CAR	--	--	--	--	--	--	--	0.2 U	--	--	--
Hydrocarbon Identification (Presence/Absence)													
Gasoline-Range TPH	8.00E+02	MTCA A	--	--	--	--	--	--	--	--	--	--	--
Diesel-Range TPH	5.00E+02	MTCA A	--	--	--	--	--	--	--	--	--	--	--
Motor-Oil Range TPH	5.00E+02	MTCA A	--	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (ug/L)													
Gasoline-Range TPH	8.00E+02	MTCA A	250 U	--	--	--	--	--	--	250 U	--	--	--
Diesel-Range TPH	5.00E+02	MTCA A	**1600**	**1400**	**1700**	**1300**	**1400**	**2400**	**1900**	**1900**	**690**	**11000**	**3800**
Motor-Oil Range TPH	5.00E+02	MTCA A	**930**	**310**	**350**	**300**	**390**	**1400**	**1200**	**240**	200 U	**1300**	**410**

		Location:	MW01	MW01	MW01	MW01	MW01	MW01	MW01	MW02	MW02	MW02	MW02
		Sample Name:	MWDUP	MW01-GW-140618	FD-GW-140618	MW01-GW-091014	FD-091014	MW01-GW-121014	FD-121014	MW2-W-9	MW02-GW-20121009	MW02	MW02-GW-140618
		Collection Date:	04/10/2014	06/18/2014	06/18/2014	09/10/2014	09/10/2014	12/10/2014	12/10/2014	05/16/2012	10/09/2012	04/10/2014	06/18/2014
		Collection Depth (ft bgs):	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	3.5-13.5	4-14	4-14	4-14	4-14
	Groundwater CUL (ug/L)	**CUL Source**											
EPH (ug/L)													
Aliphatic C8-C10	NV	NV	--	--	--	--	--	--	--	--	--	40 U	--
Aliphatic C10-C12	NV	NV	--	--	--	--	--	--	--	--	--	40 U	--
Aliphatic C12-C16	NV	NV	--	--	--	--	--	--	--	--	--	**48** J	--
Aliphatic C16-C21	NV	NV	--	--	--	--	--	--	--	--	--	**58**	--
Aliphatic C21-C34	NV	NV	--	--	--	--	--	--	--	--	--	40 U	--
Aromatic C8-C10	NV	NV	--	--	--	--	--	--	--	--	--	40 U	--
Aromatic C10-C12	NV	NV	--	--	--	--	--	--	--	--	--	40 U	--
Aromatic C12-C16	NV	NV	--	--	--	--	--	--	--	--	--	40 U	--
Aromatic C16-C21	NV	NV	--	--	--	--	--	--	--	--	--	40 U	--
Aromatic C21-C34	NV	NV	--	--	--	--	--	--	--	--	--	40 U	--
Calculated Totals*													
cPAH TEQ by 8270	1.00E-01	MTCA A	--	--	--	--	--	--	--	ND	--	--	--
cPAH TEQ by 8270 SIM	1.00E-01	MTCA A	--	--	--	--	--	--	--	ND	--	--	--
Total naphthalenes by 8270	1.60E+02	MTCA A	--	--	--	--	--	--	--	ND	--	--	--
Total naphthalenes by 8270 SIM	1.60E+02	MTCA A	--	--	--	--	--	--	--	ND	--	--	--
Total PCBs	1.00E-01	MTCA A	--	--	--	--	--	--	--	--	--	--	--
Heavy Oils	5.00E+02	MTCA A	**2530**	**1710**	**2050**	**1600**	**1790**	**3800**	**3100**	**2140**	**790**	**12300**	**4210**
Total Xylenes	1.00E+03	MTCA A	ND	--	--	--	--	--	--	ND	--	--	--

Table 5-2
Groundwater Analytical Results
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

		Location:	MW02	MW02	MW03	MW03	MW03	MW03	MW03	MW03	MW03
		Sample Name:	MW02-GW-091014	MW02-GW-121014	MW3-W-9	MW03-GW-20121009	FD-GW-20121009	MW03	MW03-GW-140618	MW03-GW-091014	MW03-GW-121014
		Collection Date:	09/10/2014	12/10/2014	05/15/2012	10/09/2012	10/09/2012	04/10/2014	06/18/2014	09/10/2014	12/10/2014
		Collection Depth (ft bgs):	4-14	4-14	4-14	4-14	4-14	4-14	4-14	4-14	4-14
	Groundwater CUL (ug/L)	**CUL Source**									
Dissolved Metals (ug/L)											
Arsenic	5.00E+00	MTCA A	--	--	--	--	--	--	--	--	--
Barium	3.20E+03	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Cadmium	5.00E+00	MTCA A	--	--	--	--	--	--	--	--	--
Chromium	5.00E+01	MTCA A	--	--	--	--	--	--	--	--	--
Iron	1.12E+04	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Lead	1.50E+01	MTCA A	--	--	0.1 U	--	--	--	--	--	--
Mercury	2.00E+00	MTCA A	--	--	--	--	--	--	--	--	--
Selenium	8.00E+01	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Silver	8.00E+01	MTCA B NCAR	--	--	--	--	--	--	--	--	--
PCB Aroclors (ug/L)											
Aroclor 1016	1.25E+00	MTCA B CAR	--	--	--	--	--	0.1 U	--	--	--
Aroclor 1221	NV	NV	--	--	--	--	--	0.1 U	--	--	--
Aroclor 1232	NV	NV	--	--	--	--	--	0.1 U	--	--	--
Aroclor 1242	NV	NV	--	--	--	--	--	0.1 U	--	--	--
Aroclor 1248	NV	NV	--	--	--	--	--	0.1 U	--	--	--
Aroclor 1254	4.38E-02	MTCA B CAR	--	--	--	--	--	0.1 U	--	--	--
Aroclor 1260	4.38E-02	MTCA B CAR	--	--	--	--	--	0.1 U	--	--	--
VOCs (ug/L)											
1,1,1,2-Tetrachloroethane	1.68E+00	MTCA B CAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
1,1,1-Trichloroethane	2.00E+02	MTCA A	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
1,1,2,2-Tetrachloroethane	2.19E-01	MTCA B CAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
1,1,2-Trichloroethane	7.68E-01	MTCA B CAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
1,1-Dichloroethane	7.68E+00	MTCA B CAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
1,1-Dichloroethene	4.00E+02	MTCA B NCAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
1,1-Dichloropropene	NV	NV	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
1,2,3-Trichlorobenzene	NV	NV	--	--	0.5 U	0.5 U	0.5 U	--	--	--	--
1,2,3-Trichloropropane	1.46E-03	MTCA B CAR	--	--	0.5 U	0.5 U	0.5 U	--	--	--	--
1,2,4-Trichlorobenzene	1.51E+00	MTCA B CAR	--	--	0.5 U	0.5 U	0.5 U	--	--	--	--
1,2,4-Trimethylbenzene	NV	NV	--	--	0.2 U	**0.11** J	0.2 U	--	--	--	--
1,2-Dibromo-3-chloropropane	5.47E-02	MTCA B CAR	--	--	0.5 U	0.5 U	0.5 U	--	--	--	--
1,2-Dibromoethane	1.00E-02	MTCA A	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
1,2-Dichlorobenzene	7.20E+02	MTCA B NCAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
1,2-Dichloroethane	5.00E+00	MTCA A	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
1,2-Dichloropropane	1.22E+00	MTCA B CAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
1,3,5-Trimethylbenzene	8.00E+01	MTCA B NCAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
1,3-Dichlorobenzene	NV	NV	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--

		Location:	MW02	MW02	MW03	MW03	MW03	MW03	MW03	MW03	MW03
		Sample Name:	MW02-GW-091014	MW02-GW-121014	MW3-W-9	MW03-GW-20121009	FD-GW-20121009	MW03	MW03-GW-140618	MW03-GW-091014	MW03-GW-121014
		Collection Date:	09/10/2014	12/10/2014	05/15/2012	10/09/2012	10/09/2012	04/10/2014	06/18/2014	09/10/2014	12/10/2014
		Collection Depth (ft bgs):	4-14	4-14	4-14	4-14	4-14	4-14	4-14	4-14	4-14
	Groundwater CUL (ug/L)	**CUL Source**									
1,3-Dichloropropane	NV	NV	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
1,4-Dichlorobenzene	8.10E+00	MTCA B CAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
2,2-Dichloropropane	NV	NV	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
2-Butanone	4.80E+03	MTCA B NCAR	--	--	5 U	5 U	5 U	--	--	--	--
2-Chloroethylvinyl ether	NV	NV	--	--	1 U	1 U	1 U	--	--	--	--
2-Chlorotoluene	1.60E+02	MTCA B NCAR	--	--	**0.2**	**0.13** J	**0.14** J	--	--	--	--
2-Hexanone	NV	NV	--	--	5 U	5 U	5 U	--	--	--	--
4-Chlorotoluene	NV	NV	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
4-Isopropyltoluene	NV	NV	--	--	0.2 U	**0.13** J	**0.13** J	--	--	--	--
4-Methyl-2-pentanone	6.40E+02	MTCA B NCAR	--	--	5 U	5 U	5 U	--	--	--	--
Acetone	7.20E+03	MTCA B NCAR	--	--	5 U	5 U	5 U	--	--	--	--
Acrolein	4.00E+00	MTCA B NCAR	--	--	5 U	5 U	5 U	--	--	--	--
Acrylonitrile	8.10E-02	MTCA B CAR	--	--	1 U	1 U	1 U	--	--	--	--
Benzene	5.00E+00	MTCA A	--	--	0.2 U	**0.19** J	**0.2**	--	--	--	--
Bromobenzene	NV	NV	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Bromodichloromethane	7.06E-01	MTCA B CAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Bromoethane	NV	NV	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Bromoform	5.54E+00	MTCA B CAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Bromomethane	1.12E+01	MTCA B NCAR	--	--	1 U	1 U	1 U	--	--	--	--
Carbon disulfide	8.00E+02	MTCA B NCAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Carbon tetrachloride	6.25E-01	MTCA B CAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Chlorobenzene	1.60E+02	MTCA B NCAR	--	--	0.2 U	**0.1** J	**0.1** J	--	--	--	--
Chlorobromomethane	NV	NV	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Chloroethane	NV	NV	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Chloroform	1.41E+00	MTCA B CAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Chloromethane	NV	NV	--	--	0.5 U	0.5 U	0.5 U	--	--	--	--
cis-1,2-Dichloroethene	1.60E+01	MTCA B NCAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
cis-1,3-Dichloropropene	NV	NV	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Dibromochloromethane	5.21E-01	MTCA B CAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Dibromomethane	8.00E+01	MTCA B NCAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Ethylbenzene	7.00E+02	MTCA A	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Freon 113	2.40E+05	MTCA B NCAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Hexachlorobutadiene	5.61E-01	MTCA B CAR	--	--	0.5 U	0.5 U	0.5 U	--	--	--	--
Isopropylbenzene	8.00E+02	MTCA B NCAR	--	--	0.2 U	**0.31**	**0.28**	--	--	--	--
m,p-Xylene	1.00E+03	MTCA A	--	--	0.4 U	0.4 U	0.4 U	--	--	--	--
Methyl iodide	NV	NV	--	--	1 U	1 U	1 U	--	--	--	--
Methylene chloride	5.00E+00	MTCA A	--	--	1 U	1 U	1 U	--	--	--	--

		Location:	MW02	MW02	MW03	MW03	MW03	MW03	MW03	MW03	MW03
		Sample Name:	MW02-GW-091014	MW02-GW-121014	MW3-W-9	MW03-GW-20121009	FD-GW-20121009	MW03	MW03-GW-140618	MW03-GW-091014	MW03-GW-121014
		Collection Date:	09/10/2014	12/10/2014	05/15/2012	10/09/2012	10/09/2012	04/10/2014	06/18/2014	09/10/2014	12/10/2014
		Collection Depth (ft bgs):	4-14	4-14	4-14	4-14	4-14	4-14	4-14	4-14	4-14
	Groundwater CUL (ug/L)	**CUL Source**									
Naphthalene	1.60E+02	MTCA A	--	--	0.5 U	0.5 U	0.5 U	--	--	--	--
n-Butylbenzene	4.00E+02	MTCA B NCAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
n-Propylbenzene	8.00E+02	MTCA B NCAR	--	--	0.2 U	**0.24**	**0.21**	--	--	--	--
o-Xylene	1.60E+03	MTCA B NCAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
sec-Butylbenzene	8.00E+02	MTCA B NCAR	--	--	**0.4**	0.2 U	0.2 U	--	--	--	--
Styrene	1.60E+03	MTCA B NCAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
tert-Butylbenzene	8.00E+02	MTCA B NCAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Tetrachloroethene	5.00E+00	MTCA A	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Toluene	1.00E+03	MTCA A	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
trans-1,2-dichloroethene	1.60E+02	MTCA B NCAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
trans-1,3-Dichloropropene	NV	NV	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
trans-1,4-Dichloro-2-butene	NV	NV	--	--	1 U	1 U	1 U	--	--	--	--
Trichloroethene	5.00E+00	MTCA A	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Trichlorofluoromethane	2.40E+03	MTCA B NCAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Vinyl Acetate	8.00E+03	MTCA B NCAR	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Vinyl chloride	2.00E-01	MTCA A	--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
SVOCs (ug/L)											
1,2,4-Trichlorobenzene	1.51E+00	MTCA B CAR	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	7.20E+02	MTCA B NCAR	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	8.10E+00	MTCA B CAR	--	--	--	--	--	--	--	--	--
1-Methylnaphthalene	1.60E+02	MTCA A	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	8.00E+02	MTCA B NCAR	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	3.98E+00	MTCA B CAR	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	2.40E+01	MTCA B NCAR	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	1.60E+02	MTCA B NCAR	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	3.20E+01	MTCA B NCAR	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	2.82E-01	MTCA B CAR	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	5.83E-02	MTCA B CAR	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	6.40E+02	MTCA B NCAR	--	--	--	--	--	--	--	--	--
2-Chlorophenol	4.00E+01	MTCA B NCAR	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	1.60E+02	MTCA A	--	--	--	--	--	--	--	--	--
2-Methylphenol	4.00E+02	MTCA B NCAR	--	--	--	--	--	--	--	--	--
2-Nitroaniline	1.60E+02	MTCA B NCAR	--	--	--	--	--	--	--	--	--
2-Nitrophenol	NV	NV	--	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	1.94E-01	MTCA B CAR	--	--	--	--	--	--	--	--	--
3-Nitroaniline	NV	NV	--	--	--	--	--	--	--	--	--

		Location:	MW02	MW02	MW03	MW03	MW03	MW03	MW03	MW03	MW03
		Sample Name:	MW02-GW-091014	MW02-GW-121014	MW3-W-9	MW03-GW-20121009	FD-GW-20121009	MW03	MW03-GW-140618	MW03-GW-091014	MW03-GW-121014
		Collection Date:	09/10/2014	12/10/2014	05/15/2012	10/09/2012	10/09/2012	04/10/2014	06/18/2014	09/10/2014	12/10/2014
		Collection Depth (ft bgs):	4-14	4-14	4-14	4-14	4-14	4-14	4-14	4-14	4-14
	Groundwater CUL (ug/L)	**CUL Source**									
4,6-Dinitro-2-methylphenol	NV	NV	--	--	--	--	--	--	--	--	--
4-Bromophenylphenyl ether	NV	NV	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	NV	NV	--	--	--	--	--	--	--	--	--
4-Chloroaniline	2.19E-01	MTCA B CAR	--	--	--	--	--	--	--	--	--
4-Chlorophenylphenyl ether	NV	NV	--	--	--	--	--	--	--	--	--
4-Methylphenol	8.00E+02	MTCA B NCAR	--	--	--	--	--	--	--	--	--
4-Nitroaniline	NV	NV	--	--	--	--	--	--	--	--	--
4-Nitrophenol	NV	NV	--	--	--	--	--	--	--	--	--
Acenaphthene	9.60E+02	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Acenaphthylene	NV	NV	--	--	--	--	--	--	--	--	--
Anthracene	4.80E+03	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	1.20E-01	MTCA B CAR	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	1.00E-01	MTCA A	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene	NV	NV	--	--	--	--	--	--	--	--	--
Benzoic acid	6.40E+04	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Benzyl alcohol	8.00E+02	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Bis(2-chloro-1-methylethyl)ether	6.25E-01	MTCA B CAR	--	--	--	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	NV	NV	--	--	--	--	--	--	--	--	--
Bis(2-chloroethyl)ether	3.98E-02	MTCA B CAR	--	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	6.25E+00	MTCA B CAR	--	--	--	--	--	--	--	--	--
Butylbenzylphthalate	4.61E+01	MTCA B CAR	--	--	--	--	--	--	--	--	--
Carbazole	NV	NV	--	--	--	--	--	--	--	--	--
Chrysene	1.20E+01	MTCA B CAR	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	1.20E-02	MTCA B CAR	--	--	--	--	--	--	--	--	--
Dibenzofuran	1.60E+01	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Diethyl phthalate	1.28E+04	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	NV	NV	--	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	1.60E+03	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	1.60E+02	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Fluoranthene	6.40E+02	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Fluorene	6.40E+02	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	5.47E-02	MTCA B CAR	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	5.61E-01	MTCA B CAR	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	4.80E+01	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Hexachloroethane	1.09E+00	MTCA B CAR	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	1.20E-01	MTCA B CAR	--	--	--	--	--	--	--	--	--
Isophorone	4.61E+01	MTCA B CAR	--	--	--	--	--	--	--	--	--

		Location:	MW02	MW02	MW03	MW03	MW03	MW03	MW03	MW03	MW03
		Sample Name:	MW02-GW-091014	MW02-GW-121014	MW3-W-9	MW03-GW-20121009	FD-GW-20121009	MW03	MW03-GW-140618	MW03-GW-091014	MW03-GW-121014
		Collection Date:	09/10/2014	12/10/2014	05/15/2012	10/09/2012	10/09/2012	04/10/2014	06/18/2014	09/10/2014	12/10/2014
		Collection Depth (ft bgs):	4-14	4-14	4-14	4-14	4-14	4-14	4-14	4-14	4-14
	Groundwater CUL (ug/L)	**CUL Source**									
Naphthalene	1.60E+02	MTCA A	--	--	--	--	--	--	--	--	--
Nitrobenzene	1.60E+01	MTCA B NCAR	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	1.79E+01	MTCA B CAR	--	--	--	--	--	--	--	--	--
N-Nitrosodipropylamine	1.25E-02	MTCA B CAR	--	--	--	--	--	--	--	--	--
Pentachlorophenol	2.19E-01	MTCA B CAR	--	--	--	--	--	--	--	--	--
Phenanthrene	NV	NV	--	--	--	--	--	--	--	--	--
Phenol	2.40E+03	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Pyrene	4.80E+02	MTCA B NCAR	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes	1.20E-01	MTCA B CAR	--	--	--	--	--	--	--	--	--
SVOCs by SIM (ug/L)											
1-Methylnaphthalene	1.60E+02	MTCA A	--	--	--	**0.15**	**0.09** J	--	--	--	--
2-Methylnaphthalene	1.60E+02	MTCA A	--	--	--	0.1 U	0.1 U	--	--	--	--
Acenaphthene	9.60E+02	MTCA B NCAR	--	--	--	0.1 U	0.1 U	--	--	--	--
Acenaphthylene	NV	NV	--	--	--	0.1 U	0.1 U	--	--	--	--
Anthracene	4.80E+03	MTCA B NCAR	--	--	--	0.1 U	0.1 U	--	--	--	--
Benzo(a)anthracene	1.20E-01	MTCA B CAR	--	--	--	0.1 U	0.1 U	--	--	--	--
Benzo(a)pyrene	1.00E-01	MTCA A	--	--	--	0.1 U	0.1 U	--	--	--	--
Benzo(ghi)perylene	NV	NV	--	--	--	0.1 U	0.1 U	--	--	--	--
Chrysene	1.20E+01	MTCA B CAR	--	--	--	0.1 U	0.1 U	--	--	--	--
Dibenzo(a,h)anthracene	1.20E-02	MTCA B CAR	--	--	--	0.1 U	0.1 U	--	--	--	--
Dibenzofuran	1.60E+01	MTCA B NCAR	--	--	--	0.1 U	0.1 U	--	--	--	--
Fluoranthene	6.40E+02	MTCA B NCAR	--	--	--	0.1 U	0.1 U	--	--	--	--
Fluorene	6.40E+02	MTCA B NCAR	--	--	--	0.1 U	0.1 U	--	--	--	--
Indeno(1,2,3-cd)pyrene	1.20E-01	MTCA B CAR	--	--	--	0.1 U	0.1 U	--	--	--	--
Naphthalene	1.60E+02	MTCA A	--	--	--	**0.06** J	**0.06** J	--	--	--	--
Phenanthrene	NV	NV	--	--	--	0.1 U	0.1 U	--	--	--	--
Pyrene	4.80E+02	MTCA B NCAR	--	--	--	0.1 U	0.1 U	--	--	--	--
Total Benzofluoranthenes	1.20E-01	MTCA B CAR	--	--	--	0.2 U	0.2 U	--	--	--	--
Hydrocarbon Identification (Presence/Absence)											
Gasoline-Range TPH	8.00E+02	MTCA A	--	--	--	--	--	--	--	--	--
Diesel-Range TPH	5.00E+02	MTCA A	--	--	--	--	--	--	--	--	--
Motor-Oil Range TPH	5.00E+02	MTCA A	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (ug/L)											
Gasoline-Range TPH	8.00E+02	MTCA A	--	--	250 U	250 U	250 U	--	--	--	--
Diesel-Range TPH	5.00E+02	MTCA A	**770**	**1300**	--	**360**	**310**	**340**	**320**	**210**	**210**
Motor-Oil Range TPH	5.00E+02	MTCA A	200 U	**410**	--	**260**	**200**	**370**	200 U	200 U	**300**

Table 5-2
Groundwater Analytical Results
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

		Location:	MW02	MW02	MW03	MW03	MW03	MW03	MW03	MW03	MW03
		Sample Name:	MW02-GW-091014	MW02-GW-121014	MW3-W-9	MW03-GW-20121009	FD-GW-20121009	MW03	MW03-GW-140618	MW03-GW-091014	MW03-GW-121014
		Collection Date:	09/10/2014	12/10/2014	05/15/2012	10/09/2012	10/09/2012	04/10/2014	06/18/2014	09/10/2014	12/10/2014
		Collection Depth (ft bgs):	4-14	4-14	4-14	4-14	4-14	4-14	4-14	4-14	4-14
	Groundwater CUL (ug/L)	**CUL Source**									
EPH (ug/L)											
Aliphatic C8-C10	NV	NV	--	--	--	--	--	40 U	--	--	--
Aliphatic C10-C12	NV	NV	--	--	--	--	--	40 U	--	--	--
Aliphatic C12-C16	NV	NV	--	--	--	--	--	40 U	--	--	--
Aliphatic C16-C21	NV	NV	--	--	--	--	--	40 U	--	--	--
Aliphatic C21-C34	NV	NV	--	--	--	--	--	40 U	--	--	--
Aromatic C8-C10	NV	NV	--	--	--	--	--	40 U	--	--	--
Aromatic C10-C12	NV	NV	--	--	--	--	--	40 U	--	--	--
Aromatic C12-C16	NV	NV	--	--	--	--	--	40 U	--	--	--
Aromatic C16-C21	NV	NV	--	--	--	--	--	40 U	--	--	--
Aromatic C21-C34	NV	NV	--	--	--	--	--	40 U	--	--	--
Calculated Totals*											
cPAH TEQ by 8270	1.00E-01	MTCA A	--	--	--	--	--	--	--	--	--
cPAH TEQ by 8270 SIM	1.00E-01	MTCA A	--	--	--	ND	ND	--	--	--	--
Total naphthalenes by 8270	1.60E+02	MTCA A	--	--	--	--	--	--	--	--	--
Total naphthalenes by 8270 SIM	1.60E+02	MTCA A	--	--	--	**0.26** J	**0.2** J	--	--	--	--
Total PCBs	1.00E-01	MTCA A	--	--	--	--	--	ND	--	--	--
Heavy Oils	5.00E+02	MTCA A	**870**	**1710**	ND	**620**	**510**	**710**	**420**	**310**	**510**
Total Xylenes	1.00E+03	MTCA A	--	--	ND	ND	ND	--	--	--	--

NOTES:

Total concentrations were calculated using one-half the method reporting limit for non-detects. Where all components were non-detect, the calculated total is "ND."

Detects in **bold.**

Detected concentrations were compared to MTCA A CULs or MTCA B CULs if no MTCA A value was available.

Exceedances highlighted.

-- = not analyzed.

CUL = cleanup level.

EPH = extractable petroleum hydrocarbons.

ft bgs = feet below ground surface.

Heavy oils = sum of the diesel- and motor-oil-range TPH fractions.

J = Result is an estimated value.

MTCA = Model Toxics and Control Act.

MTCA A = MTCA Method A, Table Value, CUL.

MTCA B CAR = MTCA Method B, Standard Formula Value, CUL for carcinogenic compounds.

MTCA B NCAR = MTCA Method B Standard Formula Value, CUL for non-carcinogenic compounds.

ND = not detected.

NV = no value.

PCB = polychlorinated biphenyl.

SIM = selective ion monitoring.

SVOC = semivolatile organic compound.

TPH = total petroleum hydrocarbons.

U = Analyte not detected.

ug/L = micrograms per liter (parts per billion.)

UR = Result is non-detect and rejected.

VOC = volatile organic compound.

Table 5-3
Soil Vapor Analytical Results
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

			Location	SV1
			Sample name	SV01-121204
			Sample Date	12/04/2012
Analyte	CAS	Sub-Slab Soil Vapor SLV (ug/m^3)	SLV Source	Result Value
VOCs (ug/m^3)				
1,2,3-Trichloropropane	96-18-4	1.37	B NCAR	4.3 U
1,2,4-Trichlorobenzene	120-82-1	30.5	B NCAR	5.3 U
1,2,4-Trimethylbenzene	95-63-6	107	B NCAR	**1.5**
1,2-Dichlorobenzene	95-50-1	3050	B NCAR	0.86 U
1,2-Dichloroethane	107-06-2	3.21	BCAR	0.58 U
1,2-Dichloropropane	78-87-5	8.33	BCAR	0.66 U
1,3,5-Trimethylbenzene	108-67-8	NV	NV	**0.54** J
1,4-Dichlorobenzene	106-46-7	7.58	BCAR	0.86 U
2-Butanone	78-93-3	22900	B NCAR	**2.8**
Benzene	71-43-2	10.7	BCAR	**0.61**
Bromomethane	74-83-9	76.2	B NCAR	2.8 U
Carbon disulfide	75-15-0	10700	B NCAR	**0.55** J
Chlorobenzene	108-90-7	762	B NCAR	0.66 U
Chloromethane	74-87-3	1370	B NCAR	**0.28** J
cis-1,2-Dichloroethene	156-59-2	NV	NV	0.57 U
Ethylbenzene	100-41-4	15200	B NCAR	**1.4**
Isopropylbenzene	98-82-8	6100	B NCAR	**5.5**
m,p-Xylene	1330-20-7	457	B NCAR	**4.9**
Methylene chloride	75-09-2	8330	BCAR	**0.31** J
Naphthalene	91-20-3	2.45	BCAR	3.8 U
n-Propylbenzene	103-65-1	4570	B NCAR	**0.57** J
o-Xylene	95-47-6	1520	B NCAR	**1.8**
Toluene	108-88-3	76200	B NCAR	**15**
Helium (%)				
Helium	7440-59-7	NV	NV	**0.13**

Table 5-3
Soil Vapor Analytical Results
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

NOTES:

Detects in **bold.** No exceedances were identified.

Soil vapor SLVs were obtained from the Washington State Department of Ecology soil vapor guidance (updated on April 6, 2015), when available. The guidance did not provide soil vapor SLVs for 1,2,3-trichloropropane, 2-butanone, m,p-xylene, or n-propylbenzene; those soil vapor SLVs were calculated by dividing the MTCA B indoor air cleanup level by a vapor attenuation factor of 0.1.

B NCAR = MTCA B, non-carcinogenic, indoor cleanup level with a 0.1 vapor attenuation factor.

BCAR = MTCA B, carcinogenic, indoor air cleanup level with a 0.1 vapor attenuation factor.

CAS = Chemical Abstracts Service registry number.

J = Result is an estimated value.

MTCA = Model Toxics Control Act.

ND = not detected.

NV = no value.

SLV = screening level value.

U = Analyte was not detected at or above method detection limit.

ug/m^3 = micrograms per cubic meter.

VOC = volatile organic compound.

Table 6-1
Water Right Claims
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

Name	Source	Source Type	Record Status	Record Type	Purpose	Township-Range-Section
A.L. Pettis	GW	Well	Active	Claim S	Irrigation	35N-04E-24
Allison J. Tucker	GW	Well	Active	Claim L	Domestic	35N-04E-24
B.W. Davis	GW	Well	Active	Claim L	Irrigation	35N-04E-25
Charles Jessett	GW	Well	Active	Claim L	Irrigation	35N-04E-24
Charles R. Roetker	GW	Well	Active	Claim L	Domestic, Irrigation	35N-04E-24
Clyde Belles	GW	Well	Active	Claim L	Domestic, Stockwatering	35N-04E-24
Dennis P. London	GW	Well	Active	Claim S	Irrigation	35N-04E-24
Donivan James	GW	Well	Active	Claim L	Domestic	35N-04E-24
Florence L. Burns	GW	Well	Active	Claim L	Domestic, Irrigation	35N-04E-24
Garvey L. Tolliver Jr.	GW	Well	Active	Claim S	Domestic, Irrigation	35N-04E-24
Garvey L. Tolliver Sr.	GW	Well	Active	Claim S	Domestic, Irrigation	35N-04E-24
Goodyear Nelson Hardwood	GW	Well	Active	Claim L	Industrial Supply	35N-04E-25
H. Bean Hardware	GW	Well	Active	Claim L	Store—used for pump demonstration	35N-04E-24
H.F. Cingmars	GW	Well	Active	Claim S	Irrigation	35N-04E-24
Harry Osborne	GW	Well	Active	Claim S	Domestic, Stockwatering, Irrigation	35N-04E-24
Harry W. Osborne	GW	Well	Active	Claim L	Domestic, Irrigation	35N-04E-24
Ida J. Humphreys	GW	Well	Active	Claim S	Domestic	35N-04E-23
Ida L. Beeman	GW	Well	Active	Claim L	Domestic	35N-04E-24
Immaculate Heart of Mary Church	GW	Well	Active	Claim S	Irrigation	35N-04E-24
Irene F. Trudeau	GW	Well	Active	Claim S	Irrigation	35N-04E-23
Jack E. Taylor	GW	Well	Active	Claim L	Irrigation	35N-04E-24
John J. Guddall	GW	Well	Active	Claim S	Domestic, Irrigation	35N-04E-24
John R. Coward	GW	Well	Active	Claim S	Domestic, Stockwatering, Irrigation	35N-04E-24
Leonard Crisman	GW	Well	Active	Claim L	Irrigation	35N-04E-25
Margaret Cabe	GW	Well	Active	Claim S	Domestic, Irrigation	35N-04E-24
Marie E. Longlois	GW	Well	Active	Claim L	Domestic	35N-04E-24
Patrick Baughman	GW	Well	Active	Claim S	Irrigation	35N-04E-24

Table 6-1
Water Right Claims
VSF Properties, LLC, North Cascade Ford Property Investigation
Sedro-Woolley, Washington

Name	Source	Source Type	Record Status	Record Type	Purpose	Township-Range-Section
Ray O. Bozell	GW	Well	Active	Claim S	Domestic, Irrigation	35N-04E-24
Raymond Armfield	GW	Well	Active	Claim S	Domestic	35N-04E-24
Richard E. Young	GW	Well	Active	Claim S	Domestic	35N-04E-23
Roger N. Jensen	GW	Well	Active	Claim L	Irrigation	35N-04E-24
Skagit Corporation	GW	Well	Active	Claim L	Industrial Cooling	35N-04E-24
VM A. Rivord	GW	Well	Active	Claim L	Irrigation	35N-04E-24
Willis-Rogers & Pearson Lumber Co., Inc.	GW	Well	Active	Certificate	Industrial	35N-04E-25
Zola B. Lipsey	GW	Well	Active	Claim S	Auxiliary domestic, Irrigation	35N-04E-24

NOTES:
Includes water rights claims within an approximately 0.5-mile radius of the Property.
Claim L = water rights claim, long form.
Claim S = water rights claim, short form.
GW = groundwater.

Table 9-1
Preliminary Cost Estimate—Groundwater Monitoring
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

GROUNDWATER MONITORING

Remedy components involve compliance and/or performance monitoring.

1) Includes groundwater monitoring for all four AOCs.

Assumptions

1) Assumes monitoring of 12 (three existing, nine proposed) groundwater monitoring wells.

2) One post-treatment monitoring event to be conducted at minimum of two months following treatment.

3) A minimum of four quarterly monitoring events to confirm attainment of CULs.

Item	Quantity	Unit	Unit Cost	Cost
Capital Costs				
Planning Documents				
Compliance Monitoring Plan, Sampling and Analysis Plan, Health and Safety Plan	1	LS	$ 10,000	$ 10,000
Well Installation				
Drill rig and crew	1	LS	$ 19,500	$ 19,500
Well development and oversight	7	DA	$ 1,050	$ 7,350
Field equipment fees	1	LS	$ 3,500	$ 3,500
Well survey	1	LS	$ 2,500	$ 2,500
Professional / Technical Services				
Project management	10%	--	--	$ 4,285
Subtotal				$ 47,135
Tax	8.5%			$ 4,006
Total Design, Permitting, Construction				**$ 51,141**
Periodic Costs				
Compliance monitoring	1	EA	$ 9,000	$ 9,000
Groundwater sampling event, analysis, and reporting				
Remedial action completion reporting	1	EA	$ 5,000	$ 5,000

Table 9-1
Preliminary Cost Estimate—Groundwater Monitoring
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

PRESENT VALUE ANALYSIS, GROUNDWATER MONITORING

Discount rate	7%
Total years	1

COST TYPE	YEAR	TOTAL COST	TOTAL COST PER YEAR	DISCOUNT FACTOR	NET PRESENT VALUE
Capital	0	$ 51,141	$ 51,141	1.000	$ 51,141
Periodic (one post-treatment monitoring event)	0	$ 9,000	$ 9,000	1.000	$ 9,000
Periodic (four quarterly monitoring events)	1	$ 36,000	$ 36,000	0.935	$ 33,645
Periodic (closure reporting)	1	$ 5,000	$ 5,000	0.935	$ 4,673
		$ 101,141			$ 98,459
TOTAL NET PRESENT VALUE OF GROUNDWATER MONITORING OPTION					**$ 99,000**

NOTES:
Present value analysis uses a discount rate of 7% (USEPA 540-R-00-002, OSWER 9355.0-75, July 2000).
AOC = area of concern.
CUL = cleanup level.
DA = day.
EA = each.
LS = lump sum.

Table 9-2
Preliminary Cost Estimate—AOC 1
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

OPTION 1: IN SITU GEOCHEMICAL STABILIZATION

Remedy components involve treatment of contaminated groundwater and soil via ISGS injections.
1) Includes treatment of NAPL in AOC 1 (auto repair shop).

Assumptions
1) Does not include additional characterization of AOC.
2) Includes one round of injections.
3) One post-treatment and four quarterly confirmation groundwater monitoring events will be conducted.

Item	Quantity	Unit	Unit Cost	Cost
Capital Costs				
Planning Documents				
Implementation Work Plan	1	LS	$ 15,000	$ 15,000
Permitting (UIC permit application)	1	LS	$ 5,000	$ 5,000
ISGS Injections				
Total treatment cost (including subcontractor)	9,370	CY	$ 60	$ 562,200
Professional / Technical Services				
Project management	6%	--	--	$ 34,932.00
Remedial design	12%	--	--	$ 69,864.00
Construction management	8%	--	--	$ 46,576.00
Subtotal				$ 733,572
Tax	8.5%			$ 62,354
Total Design, Permitting, Implementation				**$ 795,926**
Periodic Costs				
Remedial Action Completion Reporting	1	EA	$ 5,000	$ 5,000

PRESENT VALUE ANALYSIS, IN SITU GEOCHEMICAL STABILIZATION

Discount Rate 7%
Total Years 1

COST TYPE	YEAR	TOTAL COST	TOTAL COST PER YEAR	DISCOUNT FACTOR	NET PRESENT VALUE
Capital	0	$ 795,926	$ 795,926	1.000	$ 795,926
Periodic	1	$ 5,000	$ 5,000	0.935	$ 4,673
		$ 800,926			$ 800,599

TOTAL NET PRESENT VALUE OF ISGS OPTION	**$ 801,000**

Table 9-2
Preliminary Cost Estimate—AOC 1
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Item	Quantity	Unit	Unit Cost	Cost
OPTION 2: GROUNDWATER CIRCULATING WELLS				
Remedy components include treatment of contaminated groundwater and soil via circulating wells.				
Assumptions				
1) This option assumes that eight circulating wells will be installed.				
2) Also assumes that vapors that are stripped off will not require treatment before discharge to atmosphere.				
Capital Costs				
Planning Documents				
Implementation Work Plan and System Design	1	LS	$ 35,000	$ 35,000
System Installation				
Well Installation and development (includes drill rig and crew)	4	DA	$ 5,000	$ 20,000
Equipment and materials	1	LS	$ 128,000	$ 128,000
Labor	1	LS	$ 40,000	$ 40,000
Professional / Technical Services				
Project management	8%	--	--	$ 17,840
Remedial design	15%	--	--	$ 33,450
Construction management	10%	--	--	$ 22,300
Subtotal				$ 296,590
Tax	8.5%			$ 25,210
Total Design, Permitting, Implementation				**$ 321,800**
Annual Operation & Maintenance				
System O&M	1	LS	$ 70,000	$ 70,000
Includes testing & startup, materials (buffer, nutrients, etc.)				
Utilities (electric)	1	LS	$ 5,000	$ 5,000
Compliance Monitoring	1	EA	$ 9,000	$ 9,000
Annual groundwater monitoring (in addition to costs from Table 9-1)				
Total Annual Operation & Maintenance				**$ 84,000**
Periodic Costs				
Professional / Technical Services				
Five-year reviews and reporting	1	EA	$ 5,000	$ 5,000

PRESENT VALUE ANALYSIS, GROUNDWATER CIRCULATING WELLS

Discount Rate	7%
Total Years	10

COST TYPE	YEAR	TOTAL COST	TOTAL COST PER YEAR	DISCOUNT FACTOR	NET PRESENT VALUE
Capital	0	$ 321,800	$ 321,800	1.000	$ 321,800
Annual O&M	1 - 10	$ 840,000	$ 84,000	7.024	$ 589,981
Periodic	5	$ 5,000	$ 5,000	0.713	$ 3,565
Periodic	10	$ 5,000	$ 5,000	0.508	$ 2,542
		$ 1,171,800			$ 917,888
TOTAL NET PRESENT VALUE OF GROUNDWATER RECIRCULATING WELL OPTION					**$ 918,000**

Table 9-2
Preliminary Cost Estimate—AOC 1
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

OPTION 3: EXCAVATION WITH OFF-SITE DISPOSAL AND IN SITU BIOREMEDIATION

Remedy components include excavation of soil containing IHSs above the CUL (with off-site disposal at a permitted, engineered, lined, and monitored landfill facility), shoring protection, backfilling with bioremediation amended soil material, and repaving.

Assumptions

1) Soil density of 1.5 tons per CY.
2) AOC area is approximately 25,300 SF.
3) One round of treatment is sufficient to meet CULs (length of the remedy is assumed to be one year).
4) Groundwater monitoring as described in Table 9-1.

Item	Quantity	Unit	Unit Cost	Cost
Site Preparation				
Mobilization/demobilization	1	LS	$ 15,000	$ 15,000
Temp. erosion- and sedimentation-control measures	1	LS	$ 5,000	$ 5,000
Excavation and Disposal				
Excavation and loading	2,715	CY	$ 35	$ 95,019
Assumes 7,330-SF area with excavation depth of 10 ft bgs				
Shoring protection	1,100	SF	$ 11	$ 12,540
Off-site waste transportation and disposal	4,072	TON	$ 110	$ 447,944
Performance sampling and analysis	1	LS	$ 20,000	$ 20,000
Backfilling with In Situ Bioremediation Amendment and Repaving				
Bioremediation amendment	7,600	lbs	$ 8	$ 60,800
Assumes use of ORC-A pellets mixed with clean backfill material				
Backfilling	2,715	CY	$ 36	$ 97,733
Includes compaction in 12" layers				
Asphalt paving	814	SY	$ 10	$ 8,144
Binder course, 2" thick				
Professional / Technical Services				
Project management	6%	--	--	$ 45,730.84
Remedial design	12%	--	--	$ 91,461.69
Construction management	8%	--	--	$ 60,974.46
Subtotal				$ 960,348
Tax	8.5%			$ 81,630
Total Design, Permitting, Construction				**$ 1,041,977**
Periodic Costs				
Professional/Technical Services				
Five-year reviews and reporting	1	EA	$ 5,000	$ 5,000

Table 9-2
Preliminary Cost Estimate—AOC 1
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

PRESENT VALUE ANALYSIS, EXCAVATION WITH OFF-SITE DISPOSAL AND IN SITU BIOREMEDIATION

Discount rate	7%				
Total years	1				
COST TYPE	**YEAR**	**TOTAL COST**	**TOTAL COST PER YEAR**	**DISCOUNT FACTOR**	**NET PRESENT VALUE**
Capital	0	$ 1,041,977	$ 1,041,977	1.000	$ 1,041,977
Periodic	1	$ 5,000	$ 5,000	0.935	$ 4,673
		$ 1,046,977			$ 1,046,650
TOTAL NET PRESENT VALUE OF EXCAVATION, OFF-SITE DISPOSAL AND IN SITU BIOREMEDIATION OPTION					**$ 1,047,000**

NOTES:

Present value analysis uses a discount rate of 7% (USEPA 540-R-00-002, OSWER 9355.0-75, July 2000).

AOC = area of concern.

CUL = cleanup level.

CY = cubic yards.

DA = day.

EA = each.

ft bgs = feet below ground surface.

IHS = indicator hazardous substance.

ISGS = in situ geochemical stabilization.

LS = lump sum.

NAPL = nonaqueous-phase liquid.

ORC-A = oxygen release compound-advanced.

SF = square feet.

SY = square yards.

UIC = underground injection control program.

Table 9-3
Preliminary Cost Estimate—AOC 2
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

OPTION 1: MONITORED NATURAL ATTENUATION

Remedy components involve containment of contaminated soil, MNA, and institutional controls.

1) This area would be monitored for natural attenuation.

Assumptions

1) This option assumes that an environmental covenant will be implemented.

2) This area will be monitored for the length of the remedy (30 years).

Item	Quantity	Unit	Unit Cost	Cost
Planning Documents				
Compliance Monitoring Plan, Sampling and Analysis Plan, Health and Safety Plan	1	LS	$ 10,000	$ 10,000
Institutional Controls				
Preparation of environmental covenant	1	LS	$ 10,000	$ 10,000
Protective signage	1	LS	$ 500	$ 500
Professional / Technical Services				
Project management	10%	--	--	$ 2,050
Subtotal				$ 22,550
Tax	8.5%			$ 1,917
Total Design, Permitting, Construction				**$ 24,467**
Annual Operation & Maintenance				
Additional compliance monitoring	1	EA	$ 9,000	$ 9,000
Groundwater sampling event, analysis, and reporting				
Periodic Costs				
Five-year reviews and reporting	1	EA	$ 9,000	$ 9,000

PRESENT VALUE ANALYSIS, MONITORED NATURAL ATTENUATION

Discount rate 7%

Total years 30

COST TYPE	YEAR	TOTAL COST	TOTAL COST PER YEAR	DISCOUNT FACTOR	NET PRESENT VALUE
Capital	0	$ 24,467	$ 24,467	1.000	$ 24,467
Annual O&M	1 - 10	$ 270,000	$ 9,000	12.409	$ 111,681
Periodic	5	$ 9,000	$ 9,000	0.713	$ 6,417
Periodic	10	$ 9,000	$ 9,000	0.508	$ 4,575
Periodic	15	$ 9,000	$ 9,000	0.362	$ 3,262
Periodic	20	$ 9,000	$ 9,000	0.258	$ 2,326
Periodic	25	$ 9,000	$ 9,000	0.184	$ 1,658
Periodic	30	$ 9,000	$ 9,000	0.131	$ 1,182
		$ 348,467			$ 155,568
TOTAL NET PRESENT VALUE OF MNA OPTION					**$ 156,000**

Table 9-3
Preliminary Cost Estimate—AOC 2
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

OPTION 2: IN SITU BIOREMEDIATION

Remedy components involve treatment of contaminated soil through bioremediation injections and monitoring.

Assumptions
1) One round of treatment is sufficient to meet CULs (length of the remedy is assumed to be one year).
2) Groundwater monitoring as described in Table 9-1.
3) This area (1,230 sq. ft.) will be monitored for the length of the remedy (one year).

Item	Quantity	Unit	Unit Cost	Cost
Site Preparation				
Mobilization/demobilization	1	LS	$ 10,000	$ 10,000
Temp. erosion- and sedimentation-control measure	1	LS	$ 3,000	$ 3,000
In Situ Bioremediation				
Treatment area	500	CY	$ 20	$ 10,000
Total treatment costs (includes subcontractor, amendment, and injections)				
Professional / Technical Services				
Project management	10%	--	--	$ 1,300
Remedial design	20%	--	--	$ 2,600
Construction management	15%	--	--	$ 1,950
Permitting	1	LS	$ 15,000	$ 15,000
Preapplication meeting, city permits, UIC permit				
Planning Documents	1	LS	$ 10,000	$ 10,000
Drainage / erosion-control plans, monitoring plan				
Subtotal				$ 53,850
Tax	8.5%	--	--	$ 4,577
Total Design, Permitting, Construction				**$ 58,427**
Periodic Costs				
Remedial Action Completion Report	1	EA	$ 5,000	$ 5,000

PRESENT VALUE TOTAL, IN SITU BIOREMEDIATION OPTION

Discount rate 7%
Total years 1

COST TYPE	YEAR	TOTAL COST	TOTAL COST PER YEAR	DISCOUNT FACTOR	NET PRESENT VALUE
Capital	0	$ 58,427	$ 58,427	1.000	$ 58,427
Periodic	1	$ 5,000	$ 5,000	0.935	$ 4,673
		$ 63,427			$ 63,100
TOTAL NET PRESENT VALUE OF IN SITU BIOREMEDIATION OPTION					**$ 64,000**

Table 9-3
Preliminary Cost Estimate—AOC 2
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

NOTES:

Present value analysis uses a discount rate of 7% (USEPA 540-R-00-002, OSWER 9355.0-75, July 2000).

CUL = cleanup level.

CY = cubic yards.

EA = each.

LS = lump sum.

MNA = monitored natural attenuation.

sq. ft. = square feet.

UIC = underground injection control program.

Table 9-4
Preliminary Cost Estimate—AOC 3
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

OPTION 1: CAPPING WITH INSTITUTIONAL CONTROLS AND CAP MONITORING AND MAINTENANCE

Remedy components include containment of contaminated soil via an engineered asphalt cap, monitored natural attenuation, and institutional controls.

1) Little excavation is required under this option (some soil may be removed to accommodate cap installation).

2) After a demarcation layer is placed, the AOC will be capped and monitored.

Assumptions

1) This option assumes that an environmental covenant will be implemented.

2) The cap is approximately 52,400 SF and expands slightly beyond the Property boundary. It will be monitored for the length of the remedy (30 years).

Item	Quantity	Unit	Unit Cost	Cost
Site Preparation				
Mobilization/demobilization	1	LS	$ 10,000	$ 10,000
Temp. erosion- and sedimentation-control measures	1	LS	$ 3,000	$ 3,000
Clearing and grading	5,818	SY	$ 5	$ 29,089
Capping and Restoration				
Demarcation layer	5,818	SY	$ 2	$ 11,636
Asphalt cap	5,818	SY	$ 45	$ 259,454
Planning Documents	1	LS	$ 10,000	$ 10,000
Drainage / erosion-control plans, monitoring plan				
Institutional Controls				
Preparation of environmental covenant	1	LS	$ 10,000	$ 10,000
Protective signage	1	LS	$ 500	$ 500
Professional / Technical Services				
Project management	10%	--	--	$ 33,367.84
Remedial design	20%	--	--	$ 66,735.69
Construction management	15%	--	--	$ 50,052
Subtotal				$ 454,745
Tax	8.5%	--	--	$ 38,653
Total Design, Permitting, Construction				**$ 493,398**
Annual Operation & Maintenance				
Compliance monitoring	1	EA	$ 9,000	$ 9,000
Annual groundwater monitoring (in addition to costs from Table 9-1)				
Site inspections and maintenance	1	LS	$ 10,000	$ 10,000
Includes cap inspection and repair				
Total Annual Operation & Maintenance				**$ 19,000**
Periodic Costs				
Site maintenance				
Cap replacement/repair	1	EA	$ 259,454	$ 259,454
Project management	10%	--	--	$ 25,945
Professional / technical services				
Five-year reviews and reporting	1	EA	$ 5,000	$ 5,000

Table 9-4
Preliminary Cost Estimate—AOC 3
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

PRESENT VALUE ANALYSIS, CAPPING

Discount rate	7.0%							
Total years	30							
COST TYPE	**YEAR**		**TOTAL COST**		**TOTAL COST PER YEAR**	**DISCOUNT FACTOR**		**NET PRESENT VALUE**
Capital	0	$	493,398	$	493,398	1.000	$	493,398
Annual O&M	1 - 30	$	570,000	$	19,000	12.409	$	235,772
Periodic	5	$	5,000	$	5,000	0.713	$	3,565
Periodic	10	$	5,000	$	5,000	0.508	$	2,542
Periodic	15	$	5,000	$	5,000	0.362	$	1,812
Periodic	20	$	290,399		290,399	0.258	$	75,045
Periodic	25	$	5,000	$	5,000	0.184	$	921
Periodic	30	$	5,000	$	5,000	0.131	$	657
		$	1,378,798				$	813,712
TOTAL NET PRESENT VALUE OF CAPPING OPTION							**$**	**814,000**

Table 9-4
Preliminary Cost Estimate—AOC 3
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

OPTION 2: EXCAVATION AND OFF-SITE DISPOSAL					
Remedy components include excavation of soil containing IHSs above the cleanup level (with off-site disposal at a permitted, engineered, lined, and monitored landfill facility), backfilling, and repaving.					
Assumptions					
1) Soil density of 1.5 tons per CY.					
2) AOC area is approximately 52,400 SF.					
3) Length of the remedy is assumed to be five years. Groundwater monitoring as described in Table 9-1.					
Item	Quantity	Unit	Unit Cost		Cost
Site Preparation					
Mobilization/demobilization	1	LS	$	15,000	$ 15,000
Temp. erosion- and sedimentation-control measures	1	LS	$	5,000	$ 5,000
Clearing and grading	5,818	SY	$	5	$ 29,089
Excavation and Disposal					
Excavation and loading	1,939	CY	$	35	$ 67,874
Assumes 52,400-SF area with excavation depth of 1 ft bgs					
Off-site waste transportation and disposal	2,909	TON	$	50	$ 145,444
Performance sampling and analysis	1	LS	$	20,000	$ 20,000
Backfilling and Repaving					
Backfilling	1,939	CY	$	36	$ 69,813
Includes compaction in 12" layers					
Asphalt paving	5,818	SY	$	10	$ 58,178
Binder course, 2" thick					
Professional / Technical Services					
Project management	8%	--	--		$ 14,166.40
Remedial design	15%	--	--		$ 29,379.78
Construction management	10%	--	--		$ 19,587
Subtotal					$ 473,531
Tax	8.5%				$ 40,250
Total Design, Permitting, Construction					**$ 513,781**
Periodic Costs					
Professional / technical services					
Five-year reviews and reporting	1	EA	$	5,000	$ 5,000

Table 9-4
Preliminary Cost Estimate—AOC 3
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

PRESENT VALUE ANALYSIS, EXCAVATION AND OFF-SITE DISPOSAL

Discount rate	7%				
Total years	5				
COST TYPE	**YEAR**	**TOTAL COST**	**TOTAL COST PER YEAR**	**DISCOUNT FACTOR**	**NET PRESENT VALUE**
Capital	0	$ 513,781	$ 513,781	1.000	$ 513,781
Periodic	5	$ 5,000	$ 5,000	0.713	$ 3,565
		$ 518,781			$ 517,346
TOTAL NET PRESENT VALUE OF EXCAVATION AND OFF-SITE DISPOSAL OPTION					**$ 518,000**

NOTES:

Present value analysis uses a discount rate of 7% (USEPA 540-R-00-002, OSWER 9355.0-75, July 2000).

AOC = area of concern.

CY = cubic yards.

EA = each.

ft bgs = feet below ground surface.

IHS = indicator hazardous substance.

LS = lump sum.

SF = square feet.

SY = square yards.

Table 9-5
Preliminary Cost Estimate—AOC 4
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

MONITORED NATURAL ATTENUATION OPTION						
Remedy components involve containment of contaminated soil, MNA, and institutional controls.						
1) This area would be monitored for natural attenuation.						
Assumptions						
1) This option assumes that an environmental covenant will be implemented.						
2) This area will be monitored for the length of the remedy (30 years).						
Item	Quantity	Unit	Unit Cost		Cost	
Planning Documents						
Compliance Monitoring Plan, Sampling and Analysis Plan, Health and Safety Plan	1	LS	$	10,000	$	10,000
Institutional Controls						
Preparation of environmental covenant	1	LS	$	10,000	$	10,000
Protective signage	1	LS	$	500	$	500
Professional / Technical Services						
Project management	10%	--	--		$	2,050
Subtotal					$	22,550
Tax	8.5%				$	1,917
Total Design, Permitting, Construction					**$**	**24,467**
Annual Operation & Maintenance						
Additional compliance monitoring	1	EA	$	9,000	$	9,000
Groundwater sampling event, analysis, and reporting						
Periodic Costs						
Five-year reviews and reporting	1	EA	$	5,000	$	5,000

PRESENT VALUE ANALYSIS, MONITORED NATURAL ATTENUATION

Discount rate	7%
Total years	30

COST TYPE	YEAR	TOTAL COST	TOTAL COST PER YEAR	DISCOUNT FACTOR	NET PRESENT VALUE
Capital	0	$ 24,467	$ 24,467	1.000	$ 24,467
Annual O&M	1 - 10	$ 270,000	$ 9,000	12.409	$ 111,681
Periodic	5	$ 5,000	$ 5,000	0.713	$ 3,565
Periodic	10	$ 5,000	$ 5,000	0.508	$ 2,542
Periodic	15	$ 5,000	$ 5,000	0.362	$ 1,812
Periodic	20	$ 5,000	$ 5,000	0.258	$ 1,292
Periodic	25	$ 5,000	$ 5,000	0.184	$ 921
Periodic	30	$ 5,000	$ 5,000	0.131	$ 657
		$ 324,467			$ 146,937
TOTAL NET PRESENT VALUE OF MNA OPTION					**$ 147,000**

Table 9-5
Preliminary Cost Estimate—AOC 4
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Item	Quantity	Unit	Unit Cost	Cost
IN SITU BIOREMEDIATION OPTION				
Remedy components involve treatment of contaminated soil through bioremediation injections and monitoring.				
Assumptions				
1) One round of treatment is sufficient to meet CULs (length of the remedy is assumed to be one year).				
2) Groundwater monitoring as described in Table 9-1.				
3) This area (2,640 sq. ft.) will be monitored for the length of the remedy (five years).				
Site Preparation				
Mobilization/demobilization	1	LS	$ 10,000	$ 10,000
Temp. erosion- and sedimentation-control measures	1	LS	$ 3,000	$ 3,000
In Situ Bioremediation				
Treatment area	1,000	CY	$ 20	$ 20,000
Total treatment costs (includes subcontractor, amendment, and injections)				
Professional / Technical Services				
Project management	10%	--	--	$ 2,300
Remedial design	20%	--	--	$ 4,600
Construction management	15%	--	--	$ 3,450
Permitting	1	LS	$ 15,000	$ 15,000
Preapplication meeting, city permits, UIC permit				
Planning Documents	1	LS	$ 10,000	$ 10,000
Drainage / erosion-control plans, monitoring plan				
Subtotal				$ 68,350
Tax	8.5%	--	--	$ 5,810
Contingency	30%	--	--	$ 20,505
Total Design, Permitting, Construction				**$ 94,665**
Periodic Costs				
Five-year reviews and reporting	1	EA	$ 5,000	$ 5,000

PRESENT VALUE TOTAL, IN SITU BIOREMEDIATION OPTION

Discount Rate	7.0%
Total Years	1

COST TYPE	YEAR	TOTAL COST	TOTAL COST PER YEAR	DISCOUNT FACTOR	NET PRESENT VALUE
Capital	0	$ 94,665	$ 94,665	1.000	$ 94,665
Periodic	1	$ 5,000	$ 5,000	0.935	$ 4,673
		$ 99,665			$ 99,338

TOTAL NET PRESENT VALUE OF IN SITU BIOREMEDIATION OPTION **$ 100,000**

Table 9-5
Preliminary Cost Estimate—AOC 4
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

NOTES:

Present value analysis uses a discount rate of 7% (USEPA 540-R-00-002, OSWER 9355.0-75, July 2000).

AOC = area of concern.

CUL = cleanup level.

CY = cubic yards.

EA = each.

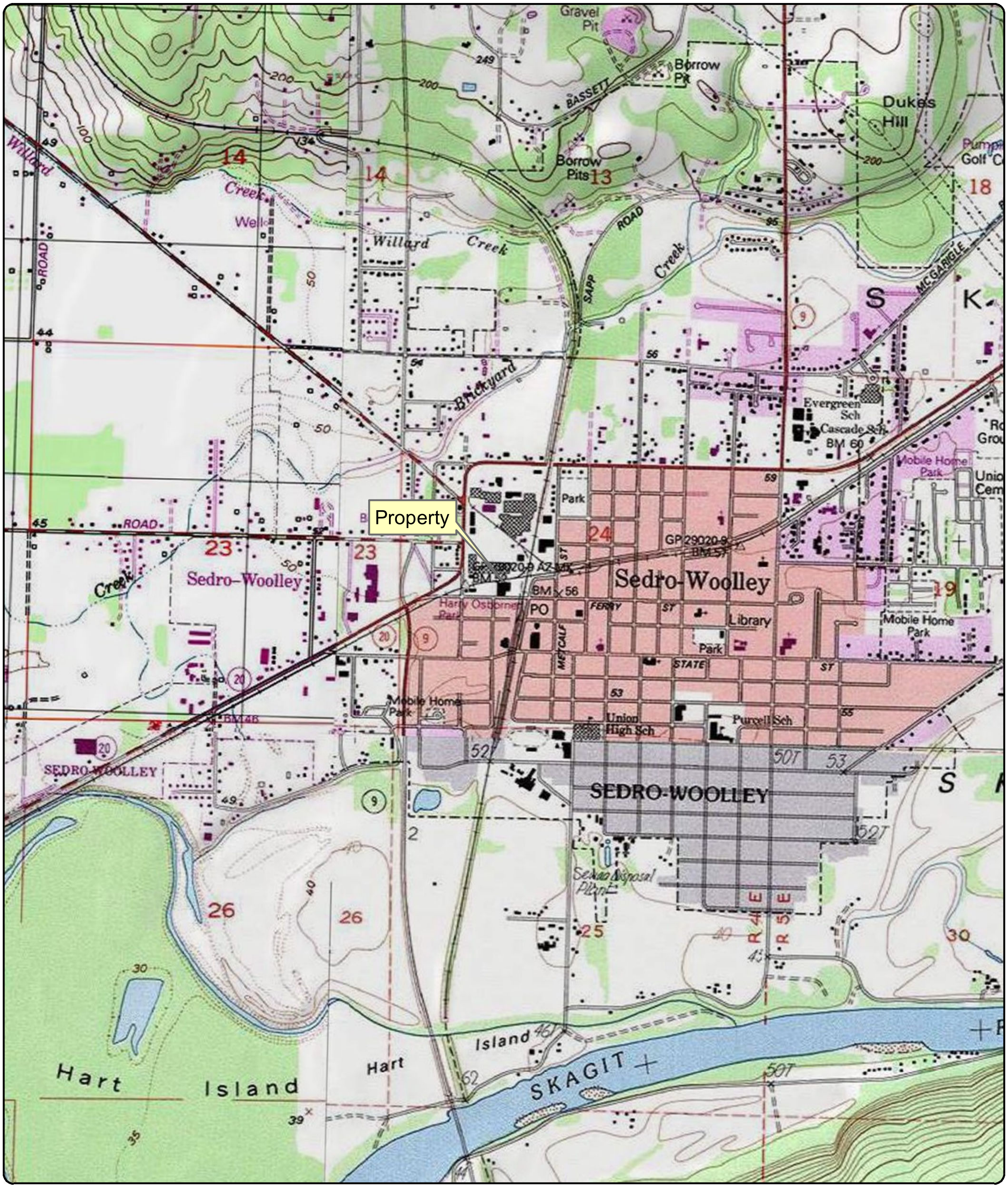
LS = lump sum.

MNA = monitored natural attenuation.

sq. ft. = square feet.

UIC = underground injection control program.

FIGURES



Site Address: 116 W Ferry Street, Sedro-Woolley, Washington
Source: US Geological Survey (1990) 7.5-minute topographic quadrangle: Sedro-Woolley North
Section 24, Township 35 North, Range 4 East

Figure 1-1
Property Location

North Cascade Ford Property
Sedro-Woolley, Washington

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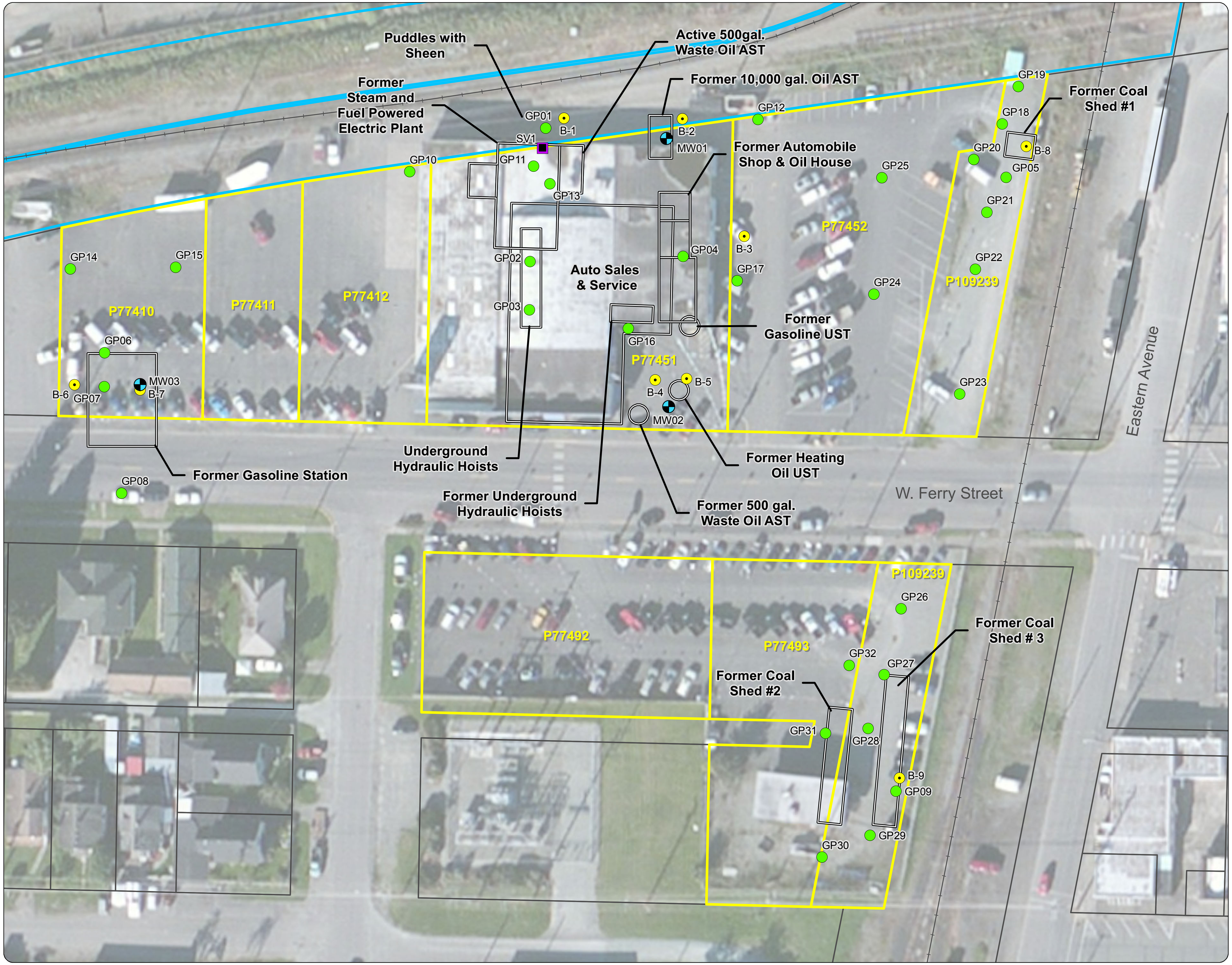
Figure 1-2
Site Features and Sample Locations

North Cascade Ford Property
Sedro-Woolley, Washington



Legend

- Boring Location
- Sub-slab Soil Vapor Probe
- Monitoring Well
- Phase II ESA Boring Location
- Railroad (Approximate)
- Property Parcels and Parcel Number
- BNSF-owned Parcels
- Skagit County Parcels

Notes:
1. All historical feature locations are approximate and shown for relative location reference only.
2. Boring and monitoring well locations were surveyed by Wilson Engineering, LLC on May 15, 2012 using a hand-held global positioning system device.
3. AST = aboveground storage tank.
4. BNSF = Burlington Northern Santa Fe Railway Company.
5. ESA = environmental site assessment.
6. UST = underground storage tank.

0 30 60
Feet

Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps; Parcels obtained from Skagit County GIS Department.

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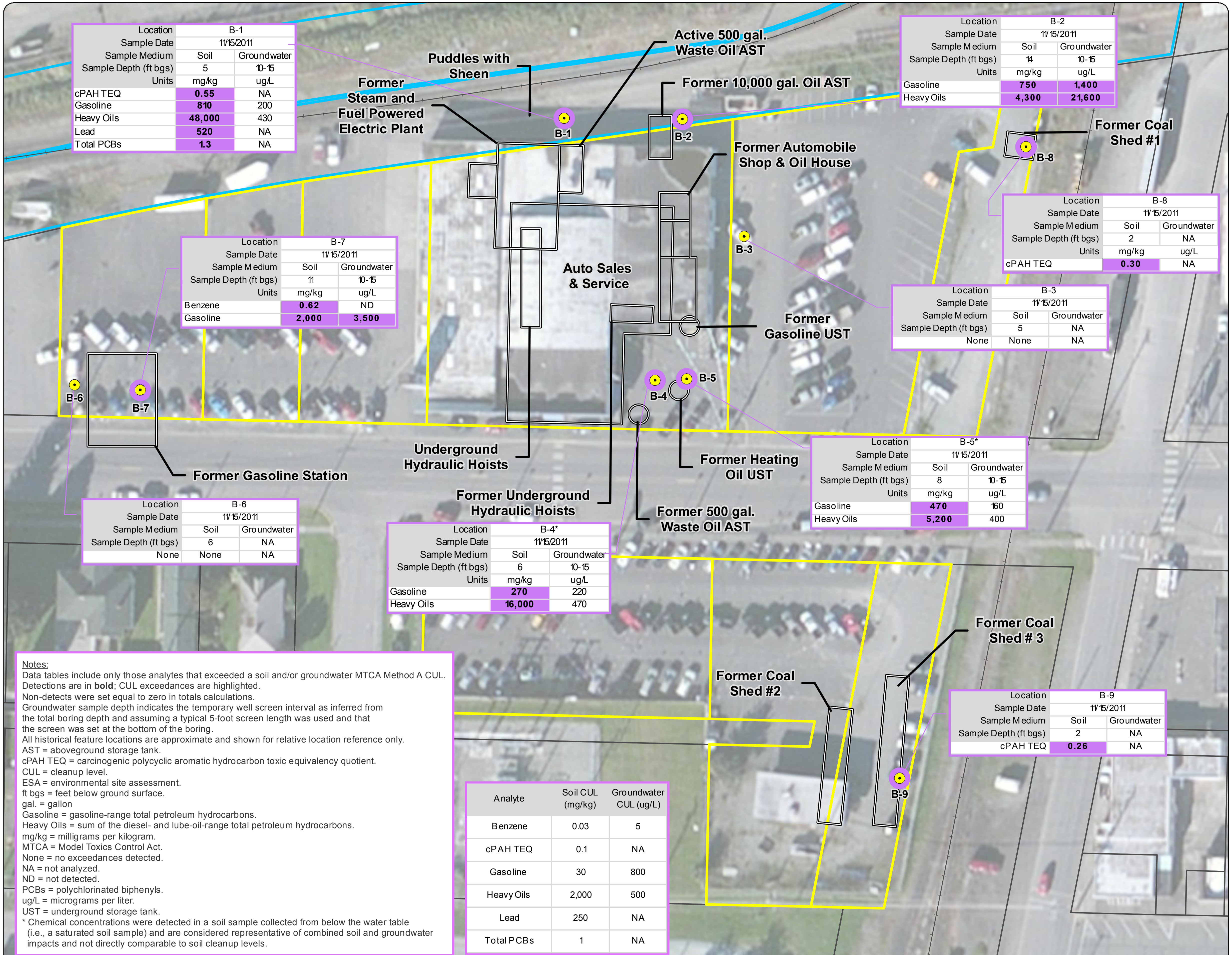
Print Date: 12/4/2015
Approved By: H. Good
Produced By: cwise
Project: 0747.01.05

Figure 2-1
Phase II ESA Cleanup Level Exceedances

North Cascade Ford Property
Sedro-Woolley, Washington



Location	B-1	
Sample Date	11/15/2011	
Sample Medium	Soil	Groundwater
Sample Depth (ft bgs)	5	10-15
Units	mg/kg	ug/L
cPAH TEQ	**0.55**	NA
Gasoline	**810**	200
Heavy Oils	**48,000**	430
Lead	**520**	NA
Total PCBs	**1.3**	NA

Location	B-2	
Sample Date	11/15/2011	
Sample Medium	Soil	Groundwater
Sample Depth (ft bgs)	14	10-15
Units	mg/kg	ug/L
Gasoline	**750**	**1,400**
Heavy Oils	**4,300**	**21,600**

Location	B-8	
Sample Date	11/15/2011	
Sample Medium	Soil	Groundwater
Sample Depth (ft bgs)	2	NA
Units	mg/kg	ug/L
cPAH TEQ	**0.30**	NA

Location	B-7	
Sample Date	11/15/2011	
Sample Medium	Soil	Groundwater
Sample Depth (ft bgs)	11	10-15
Units	mg/kg	ug/L
Benzene	**0.62**	ND
Gasoline	**2,000**	**3,500**

Location	B-3	
Sample Date	11/15/2011	
Sample Medium	Soil	Groundwater
Sample Depth (ft bgs)	5	NA
None	None	NA

Location	B-5*	
Sample Date	11/15/2011	
Sample Medium	Soil	Groundwater
Sample Depth (ft bgs)	8	10-15
Units	mg/kg	ug/L
Gasoline	**470**	160
Heavy Oils	**5,200**	400

Location	B-6	
Sample Date	11/15/2011	
Sample Medium	Soil	Groundwater
Sample Depth (ft bgs)	6	NA
None	None	NA

Location	B-4*	
Sample Date	11/15/2011	
Sample Medium	Soil	Groundwater
Sample Depth (ft bgs)	6	10-15
Units	mg/kg	ug/L
Gasoline	**270**	220
Heavy Oils	**16,000**	470

Location	B-9	
Sample Date	11/15/2011	
Sample Medium	Soil	Groundwater
Sample Depth (ft bgs)	2	NA
cPAH TEQ	**0.26**	NA

Notes:
Data tables include only those analytes that exceeded a soil and/or groundwater MTCA Method A CUL.
Detections are in **bold**; CUL exceedances are highlighted.
Non-detects were set equal to zero in totals calculations.
Groundwater sample depth indicates the temporary well screen interval as inferred from the total boring depth and assuming a typical 5-foot screen length was used and that the screen was set at the bottom of the boring.
All historical feature locations are approximate and shown for relative location reference only.
AST = aboveground storage tank.
cPAH TEQ = carcinogenic polycyclic aromatic hydrocarbon toxic equivalency quotient.
CUL = cleanup level.
ESA = environmental site assessment.
ft bgs = feet below ground surface.
gal. = gallon
Gasoline = gasoline-range total petroleum hydrocarbons.
Heavy Oils = sum of the diesel- and lube-oil-range total petroleum hydrocarbons.
mg/kg = milligrams per kilogram.
MTCA = Model Toxics Control Act.
None = no exceedances detected.
NA = not analyzed.
ND = not detected.
PCBs = polychlorinated biphenyls.
ug/L = micrograms per liter.
UST = underground storage tank.
* Chemical concentrations were detected in a soil sample collected from below the water table (i.e., a saturated soil sample) and are considered representative of combined soil and groundwater impacts and not directly comparable to soil cleanup levels.

Analyte	Soil CUL (mg/kg)	Groundwater CUL (ug/L)
Benzene	0.03	5
cPAH TEQ	0.1	NA
Gasoline	30	800
Heavy Oils	2,000	500
Lead	250	NA
Total PCBs	1	NA

Legend

- Phase II ESA Boring Location
- Soil and/or Groundwater Exceedance
- Property Parcels
- BNSF-owned Parcels
- Skagit County Parcels

0 30 60
Feet

Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps; Parcels obtained from Skagit County GIS Department.

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Print Date: 12/03/2015
Approved By: H. Good
Produced By: jmiller
Project: 0747.01

Figure 6-1
Water Well Locations

North Cascade Ford Property
Sedro-Woolley, Washington

Legend

- Water Well
- Property Extent
- Half-mile Radius

Notes:
1. Water well locations are approximate.

0 250 500
Feet

Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps; Parcels obtained from Skagit County GIS Department. Water well locations obtained from WA Department of Ecology.

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Print Date: 12/1/2015
Approved By: H. Good
Produced By: cwise
Project: 0747.01

Figure 6-2
Preliminary Conceptual Site Model
North Cascade Ford Property
Sedro-Woolley, Washington

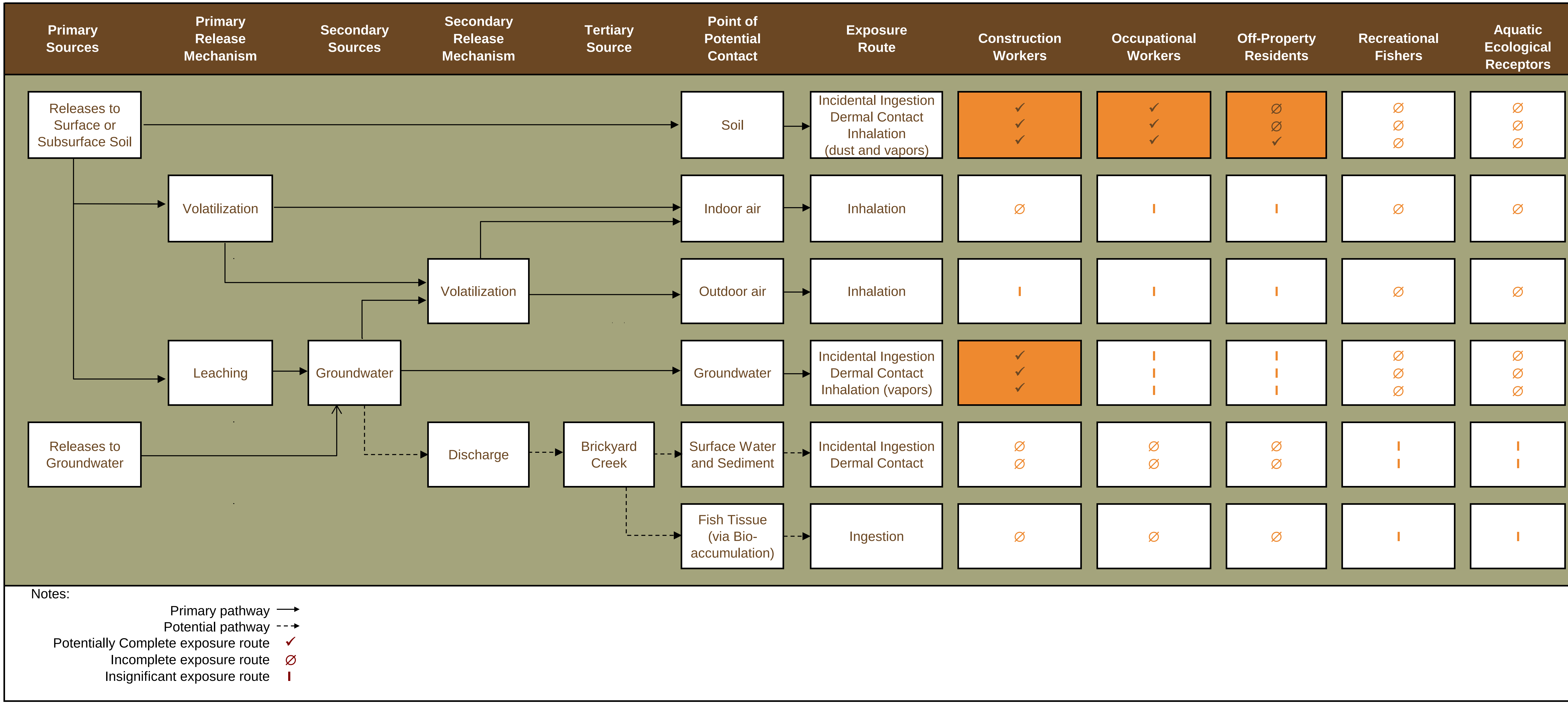
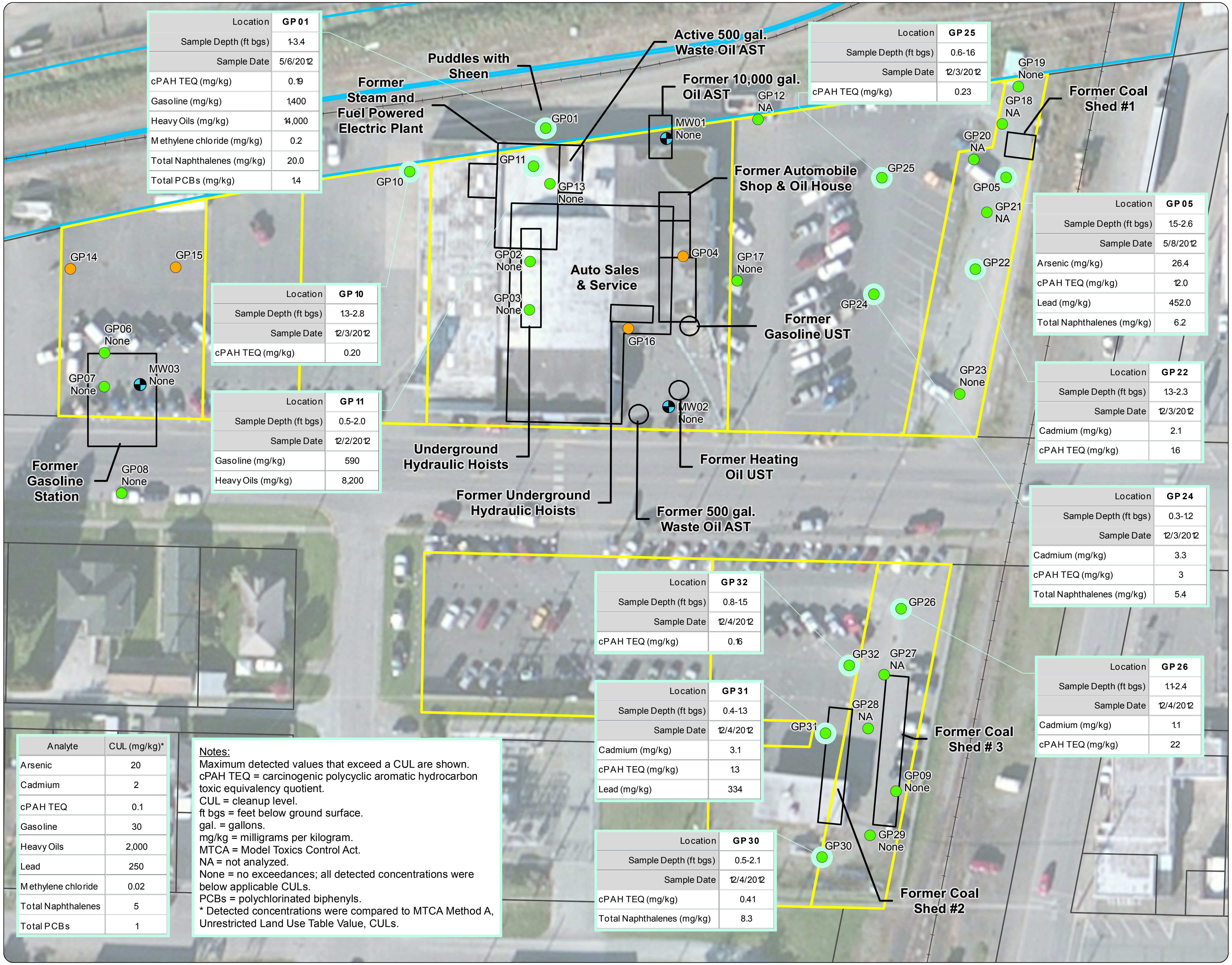


Figure 8-1
Soil Cleanup Level Exceedances
North Cascade Ford Property
Sedro-Woolley, Washington



Location	GP01
Sample Depth (ft bgs)	1-3.4
Sample Date	5/6/2012
cPAH TEQ (mg/kg)	0.19
Gasoline (mg/kg)	1,400
Heavy Oils (mg/kg)	14,000
Methylene chloride (mg/kg)	0.2
Total Naphthalenes (mg/kg)	20.0
Total PCBs (mg/kg)	1.4

Location	GP25
Sample Depth (ft bgs)	0.6-1.6
Sample Date	12/3/2012
cPAH TEQ (mg/kg)	0.23

Location	GP05
Sample Depth (ft bgs)	1.5-2.6
Sample Date	5/8/2012
Arsenic (mg/kg)	26.4
cPAH TEQ (mg/kg)	12.0
Lead (mg/kg)	452.0
Total Naphthalenes (mg/kg)	6.2

Location	GP10
Sample Depth (ft bgs)	1.3-2.8
Sample Date	12/3/2012
cPAH TEQ (mg/kg)	0.20

Location	GP11
Sample Depth (ft bgs)	0.5-2.0
Sample Date	12/2/2012
Gasoline (mg/kg)	590
Heavy Oils (mg/kg)	8,200

Location	GP22
Sample Depth (ft bgs)	1.3-2.3
Sample Date	12/3/2012
Cadmium (mg/kg)	2.1
cPAH TEQ (mg/kg)	1.6

Location	GP24
Sample Depth (ft bgs)	0.3-1.2
Sample Date	12/3/2012
Cadmium (mg/kg)	3.3
cPAH TEQ (mg/kg)	3
Total Naphthalenes (mg/kg)	5.4

Location	GP32
Sample Depth (ft bgs)	0.8-1.5
Sample Date	12/4/2012
cPAH TEQ (mg/kg)	0.16

Location	GP31
Sample Depth (ft bgs)	0.4-1.3
Sample Date	12/4/2012
Cadmium (mg/kg)	3.1
cPAH TEQ (mg/kg)	1.3
Lead (mg/kg)	334

Location	GP26
Sample Depth (ft bgs)	1.1-2.4
Sample Date	12/4/2012
Cadmium (mg/kg)	1.1
cPAH TEQ (mg/kg)	22

Location	GP30
Sample Depth (ft bgs)	0.5-2.1
Sample Date	12/4/2012
cPAH TEQ (mg/kg)	0.41
Total Naphthalenes (mg/kg)	8.3

Analyte	CUL (mg/kg)*
Arsenic	20
Cadmium	2
cPAH TEQ	0.1
Gasoline	30
Heavy Oils	2,000
Lead	250
Methylene chloride	0.02
Total Naphthalenes	5
Total PCBs	1

Notes:
Maximum detected values that exceed a CUL are shown.
cPAH TEQ = carcinogenic polycyclic aromatic hydrocarbon toxic equivalency quotient.
CUL = cleanup level.
ft bgs = feet below ground surface.
gal. = gallons.
mg/kg = milligrams per kilogram.
MTCA = Model Toxics Control Act.
NA = not analyzed.
None = no exceedances; all detected concentrations were below applicable CULs.
PCBs = polychlorinated biphenyls.
* Detected concentrations were compared to MTCA Method A, Unrestricted Land Use Table Value, CULs.

Legend
- Boring Location (No soil sample collected)
- Boring Location (Soil sample collected)
- Monitoring Well
- Soil Exceedance
- Property Parcels
- BNSF-owned Parcels
- Skagit County Parcels

Notes:
1. All historical feature locations are approximate and shown for relative location reference only.
2. Boring and monitoring well locations were surveyed by Wilson Engineering, LLC on May 15, 2012 using a hand-held global positioning system device.
3. AST = aboveground storage tank.
4. ESA = environmental site assessment.
5. UST = underground storage tank.

0 30 60
Feet

Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps; Parcels obtained from Skagit County GIS Department.

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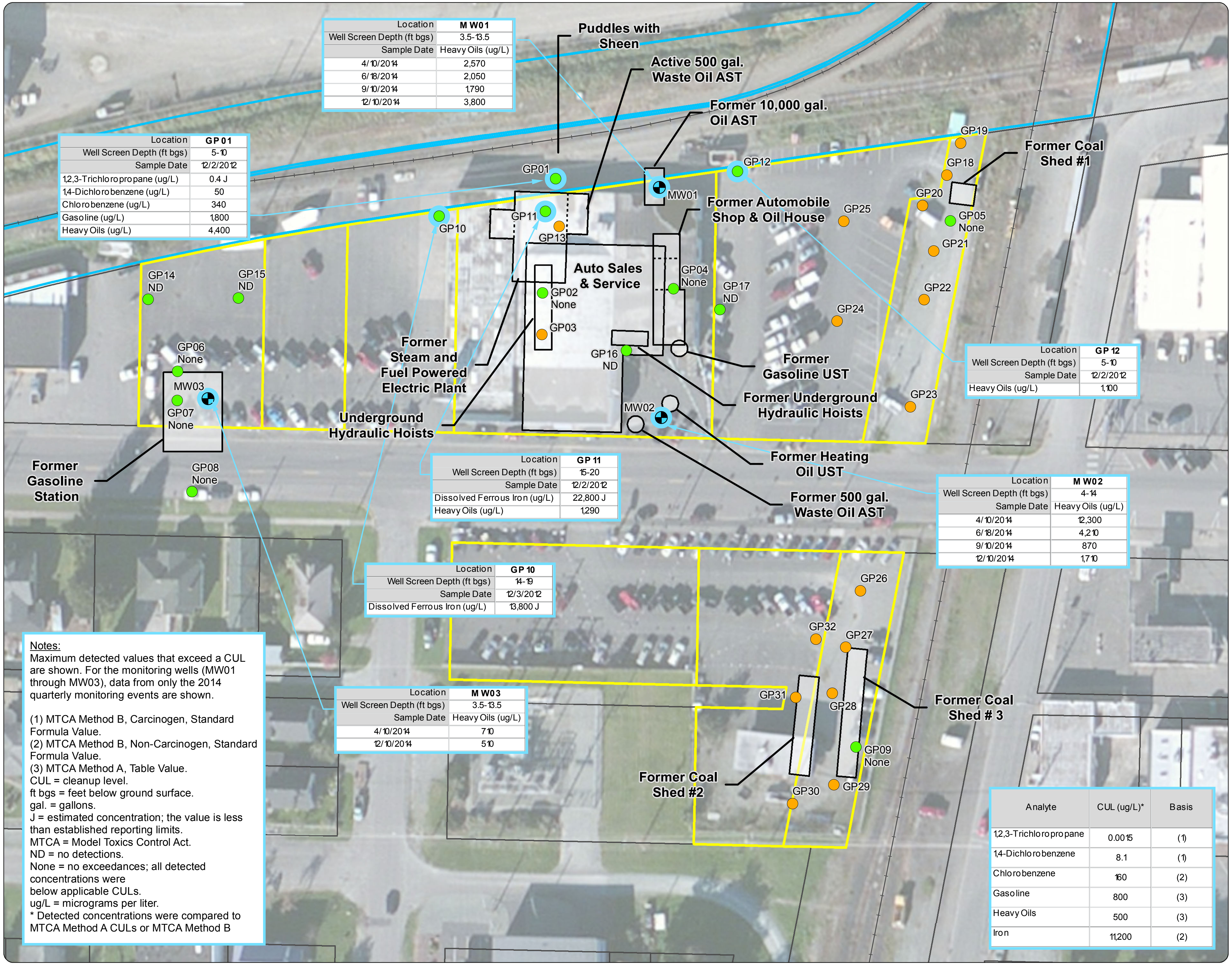
Figure 8-2
Groundwater Cleanup Level Exceedances

North Cascade Ford Property
Sedro-Woolley, Washington



Location	MW01
Well Screen Depth (ft bgs)	3.5-13.5
Sample Date	Heavy Oils (ug/L)
4/10/2014	2,570
6/18/2014	2,050
9/10/2014	1,790
12/10/2014	3,800

Location	GP01
Well Screen Depth (ft bgs)	5-10
Sample Date	12/2/2012
1,2,3-Trichloropropane (ug/L)	0.4 J
1,4-Dichlorobenzene (ug/L)	50
Chlorobenzene (ug/L)	340
Gasoline (ug/L)	1,800
Heavy Oils (ug/L)	4,400

Location	GP12
Well Screen Depth (ft bgs)	5-10
Sample Date	12/2/2012
Heavy Oils (ug/L)	1,100

Location	GP11
Well Screen Depth (ft bgs)	15-20
Sample Date	12/2/2012
Dissolved Ferrous Iron (ug/L)	22,800 J
Heavy Oils (ug/L)	1,290

Location	MW02
Well Screen Depth (ft bgs)	4-14
Sample Date	Heavy Oils (ug/L)
4/10/2014	12,300
6/18/2014	4,210
9/10/2014	870
12/10/2014	1,710

Location	GP10
Well Screen Depth (ft bgs)	14-19
Sample Date	12/3/2012
Dissolved Ferrous Iron (ug/L)	13,800 J

Location	MW03
Well Screen Depth (ft bgs)	3.5-13.5
Sample Date	Heavy Oils (ug/L)
4/10/2014	710
12/10/2014	510

Notes:
Maximum detected values that exceed a CUL are shown. For the monitoring wells (MW01 through MW03), data from only the 2014 quarterly monitoring events are shown.

(1) MTCA Method B, Carcinogen, Standard Formula Value.
(2) MTCA Method B, Non-Carcinogen, Standard Formula Value.
(3) MTCA Method A, Table Value.
CUL = cleanup level.
ft bgs = feet below ground surface.
gal. = gallons.
J = estimated concentration; the value is less than established reporting limits.
MTCA = Model Toxics Control Act.
ND = no detections.
None = no exceedances; all detected concentrations were below applicable CULs.
ug/L = micrograms per liter.
* Detected concentrations were compared to MTCA Method A CULs or MTCA Method B

Analyte	CUL (ug/L)*	Basis
1,2,3-Trichloropropane	0.0015	(1)
1,4-Dichlorobenzene	8.1	(1)
Chlorobenzene	160	(2)
Gasoline	800	(3)
Heavy Oils	500	(3)
Iron	11,200	(2)

Legend

- Groundwater Exceedance
- Boring Location (Groundwater sample collected)
- Boring Location (No groundwater sample collected)
- Monitoring Well
- BNSF-owned Parcels
- Property Parcels
- Skagit County Parcels

Notes:
1. All historical feature locations are approximate and shown for relative location reference only.
2. Boring and monitoring well locations were surveyed by Wilson Engineering, LLC on May 15, 2012 using a hand-held global positioning system device.
3. AST = aboveground storage tank.
4. ESA = environmental site assessment.
5. UST = underground storage tank.

0 30 60
Feet

Source: Aerial photograph obtained from Esri, ArcGIS Online; parcels obtained from Skagit County GIS Department.

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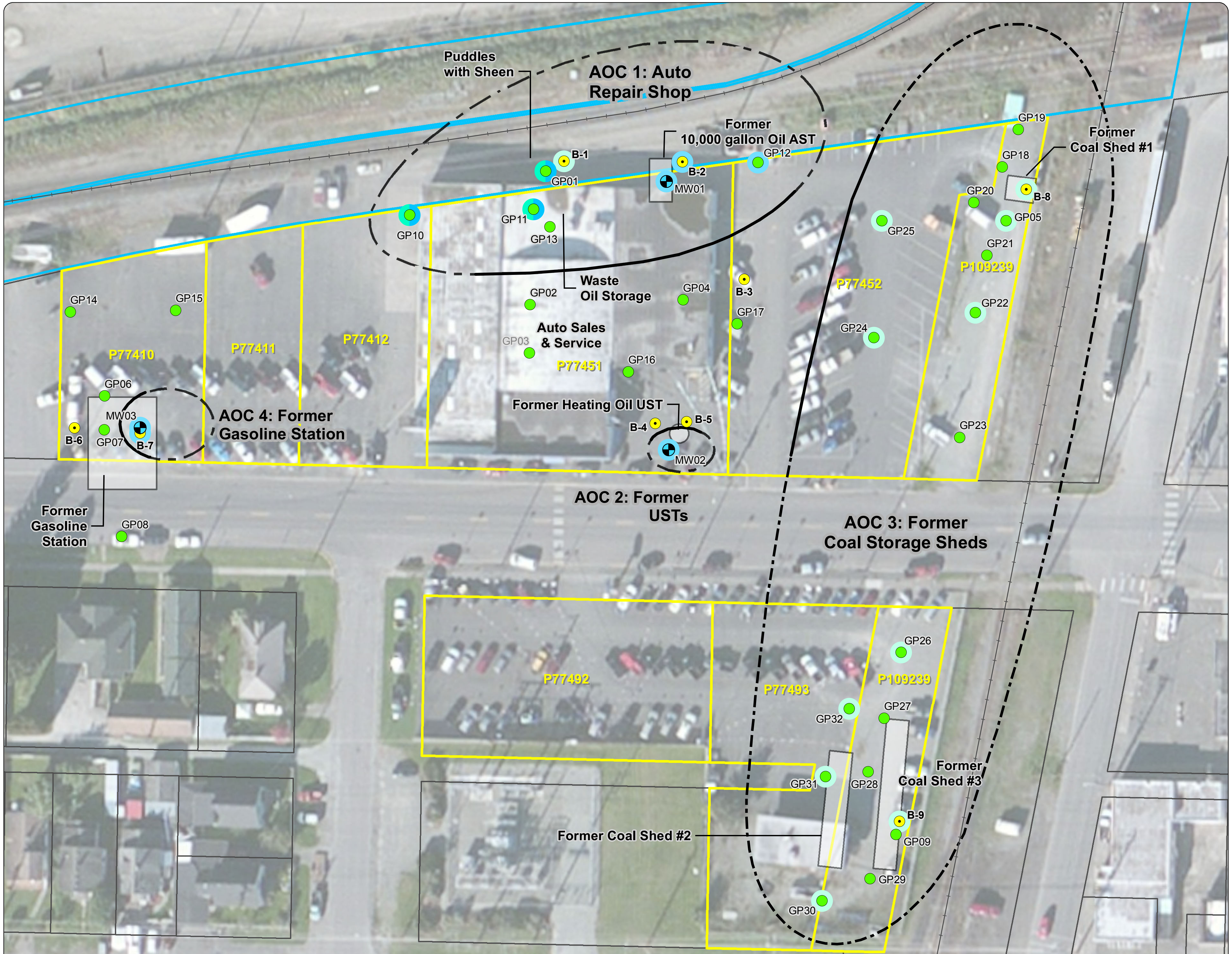
Figure 9-1
Areas of Concern

North Cascade Ford Property
Sedro-Woolley, Washington



Legend

- Boring Location
- Monitoring Well
- Phase II ESA Boring Location
- Soil Exceedance*
- Groundwater Exceedance*
- Soil and Groundwater Exceedance*
- AOC Boundary (dashed where inferred)
- Property Parcel and Parcel Number
- BNSF-owned Parcels
- Skagit County Parcels

Notes:
1. All historical feature locations are approximate and shown for relative location reference only.
2. Chemical detections in soil samples that were collected below the water table during the 2011 Phase II ESA were not compared to soil cleanup levels.
3. AOC = area of concern
4. AST = aboveground storage tank
5. BNSF = Burlington Northern Santa Fe Railway Company
6. ESA = environmental site assessment
7. UST = underground storage tank

*Model Toxics Control Act Method A cleanup level exceedance detected.

0 30 60
Feet

Source: Aerial photograph obtained from Esri, ArcGIS Online; parcels obtained from Skagit County GIS Department.

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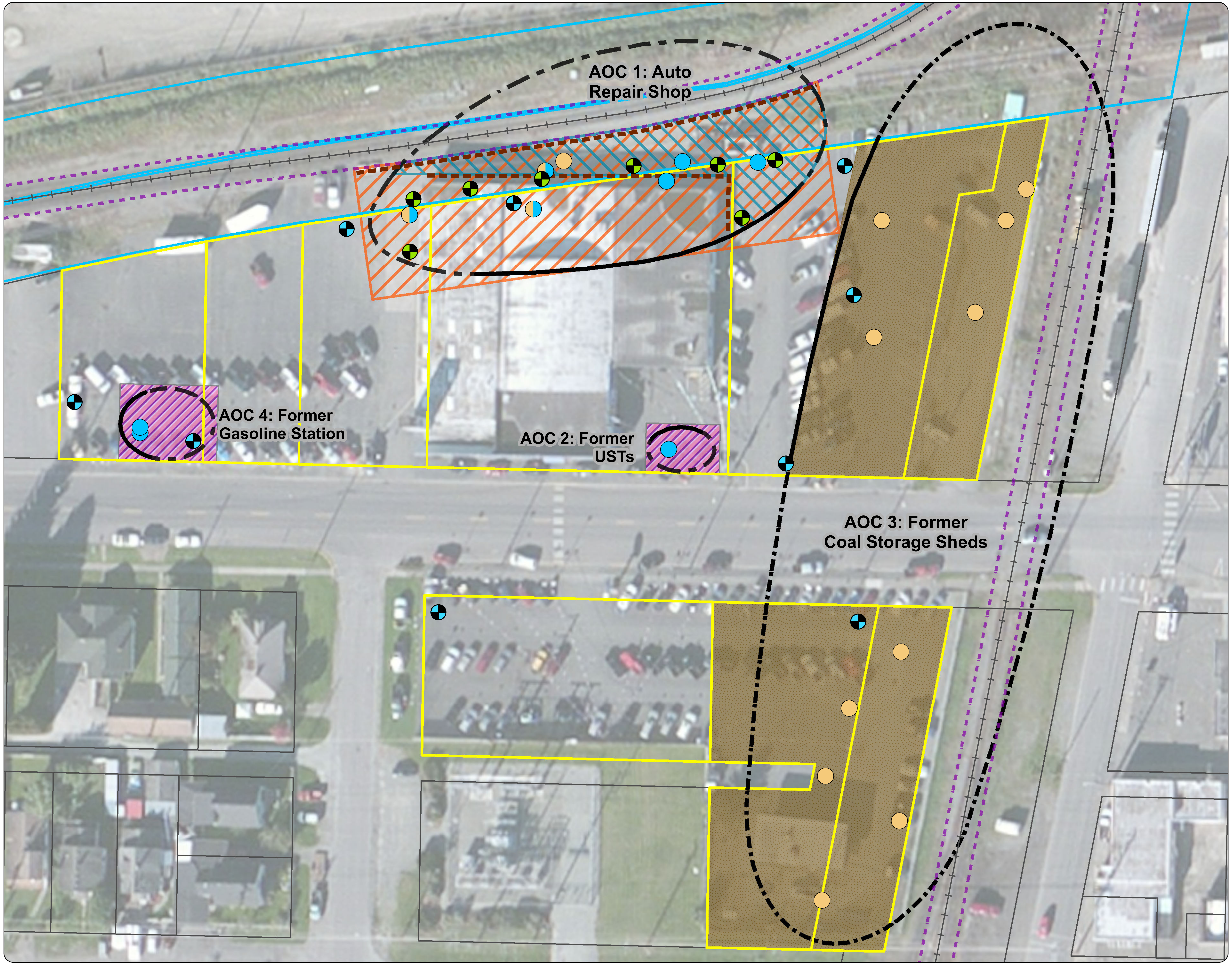

Figure 11-1
Preliminary Cleanup Options

North Cascade Ford Property
Sedro-Woolley, Washington

Legend

- Proposed Groundwater Circulating Well
- Proposed Groundwater Monitoring Well
- Soil Exceedance*
- Groundwater Exceedance*
- Soil and Groundwater Exceedance*
- Asphalt Cap or Excavation
- In Situ Bioremediation
- ISGS Treatment
- Excavation with bioremediation-amended backfill, off-site disposal, and asphalt cap
- Excavation Shoring/Sheeting Protection
- AOC Boundary (dashed where inferred)
- 10' Railroad Buffer
- Property Parcel
- BNSF-owned Parcels
- Skagit County Parcels

Notes:
1. Chemical detections in soil samples that were collected below the water table during the 2011 Phase II ESA were not compared to soil cleanup levels.
2. AOC = area of concern.
3. bgs = below ground surface.
4. BNSF = Burlington Northern Santa Fe Railway Company.
5. ISGS = in situ geochemical stabilization.

*Model Toxics Control Act Method A cleanup level exceedance detected.

0 30 60
Feet

Source: Aerial photograph obtained from Esri, ArcGIS Online; parcels obtained from Skagit County GIS Department.

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APPENDIX A

PHASE I AND II ENVIRONMENTAL SITE ASSESSMENTS

APPENDIX B

SUPPLEMENTAL HISTORICAL RECORDS REVIEW

APPENDIX C

BORING AND WELL INSTALLATION LOGS

APPENDIX D

GROUNDWATER ELEVATION CONTOUR MAPS

APPENDIX E

WELL DEVELOPMENT FORMS

APPENDIX F
FIELD SAMPLING DATA SHEETS

APPENDIX G

LABORATORY ANALYTICAL RESULTS

APPENDIX H

DATA VALIDATION MEMORANDA

APPENDIX I

TERRESTRIAL ECOLOGICAL EVALUATION

APPENDIX J

WATER WELL REPORTS

APPENDIX K

WATER RIGHTS

APPENDIX L

SITE-SPECIFIC TOTAL PETROLEUM HYDROCARBON CLEANUP LEVEL CALCULATIONS