PRELIMINARY REMEDIAL INVESTIGATION AND FEASIBILITY STUDY

NORTHERN STATE HOSPITAL PROPERTY
SEDRO-WOOLLEY, WASHINGTON

Prepared for
PORT OF SKAGIT
BURLINGTON, WASHINGTON
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The material and data in this report were prepared under the supervision and direction of the undersigned.

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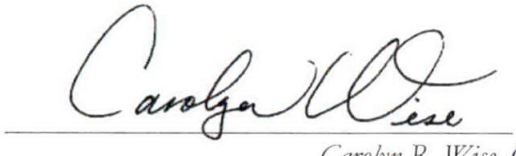

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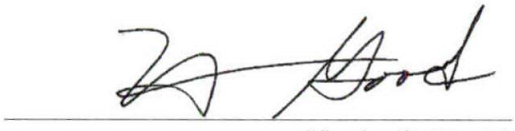

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ACRONYMS AND ABBREVIATIONS

90/90 UTL	90 percent upper tolerance limit (90 percent coverage)
AOC	area of concern
ARAR	applicable or relevant and appropriate requirements
AST	aboveground storage tank
AT	Eurofins Air Toxics, Inc.
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
COI	chemical of interest
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CSM	conceptual site model
CULs	cleanup levels
DCE	dichloroethene
DES	Washington State Department of Enterprise Services
Ecology	Washington State Department of Ecology
EIC	ecological indicator concentrations
FSA	focused site assessment
FSDS	field sampling data sheet
MFA	Maul Foster & Alongi, Inc.
mg/kg	milligrams per liter
MNA	monitored natural attenuation
MTCA	Model Toxics Control Act
NSRA	Northern State Recreation Area
OnSite	OnSite Environmental, Inc.
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
POC	point of compliance
PVC	polyvinyl chloride
Port	Port of Skagit, Burlington, Washington
ppm	parts per million
the Property	Northern State Hospital property located at 24909 Hub Drive in Sedro-Woolley, WA
RI/FS	remedial investigation and feasibility study
SL	screening level
SVOC	semi-volatile organic compound
TCE	trichloroethene
TEE	terrestrial ecological evaluation
TEQ	toxic equivalency quotient
TPH	total petroleum hydrocarbons
ug/L	micrograms per liter
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank

ACRONYMS AND ABBREVIATIONS (CONTINUED)

VOC	volatile organic compound
WAC	Washington Administrative Code

1 INTRODUCTION

On behalf of the Port of Skagit (Port), Maul Foster & Alongi, Inc. (MFA) has prepared this preliminary remedial investigation and feasibility study (RI/FS) for the Northern State Hospital property (the Property) located at 24909 Hub Drive within the urban growth area of Sedro-Woolley, Washington (Figure 1). The Property is currently owned and managed by the Washington State Department of Enterprise Services (DES), with buildings leased to multiple tenants, including the Cascade Job Corps, for on-site housing and educational services; the Pioneer Center, as a drug and alcohol treatment facility with on-site housing; and the National Guard, for a vehicle storage, maintenance, and fueling facility. Historically, the Property was used as a self-sustaining treatment and residence facility for people with mental illness that included on-site patient and staff housing, a power house, maintenance shops, a laundry, and a fueling station.

The Port is considering purchasing or taking over control of the Property to redevelop it for a greater community purpose. This preliminary RI/FS was conducted in support of environmental due diligence activities associated with that transaction, and to identify the nature and extent of environmental contamination associated with features of environmental concern and development of associated preliminary cleanup options and costs. This preliminary RI/FS incorporates information collected during the focused site assessment (FSA) (MFA, 2015a), which was completed under an integrated planning grant awarded to the Port by the Washington State Department of Ecology (Ecology), and supplemental investigations conducted in April and June 2015 under an interagency agreement between the Port and Ecology.

1.1 Regulatory Framework

This preliminary RI/FS was conducted in general accordance with guidance put forth in the Model Toxics Control Act (MTCA) (Washington Administrative Code [WAC] 173-340). The FSA and supplemental investigation activities included in this preliminary RI/FS were conducted consistent with industry standard techniques, the FSA work plan (MFA, 2014), and the partial RI work plan (MFA, 2015b).

1.2 RI/FS Objectives

The focus of the preliminary RI was to evaluate the nature and extent of environmental contamination at the Property, to assess the potential need for remedial action at the Property, and to assess how environmental impacts could be managed during redevelopment. Specific site assessment objectives included the following:

- Identify features of concern that could potentially have contributed to environmental contamination at the Property and evaluate the presence or absence contamination associated with those features

- Develop a preliminary conceptual site model (CSM) and data quality objectives for site characterization
- Characterize the nature and extent of hazardous substances present in environmental media at concentrations above MTCA cleanup levels (CULs)
- Evaluate potential exposure pathways and associated health risks to current and reasonably likely future human and ecological receptors on the Property
- Evaluate potential cleanup options for confirmed areas of contamination at the Property

2 BACKGROUND

2.1 Property Description

The Property is located in section 8 of township 35 north and range 5 east of the Willamette Meridian. The Property comprises four parcels: two rectangular-shaped parcels to the north with the same parcel number and a combined area of 143.23 acres (parcel number 38607); a square-shaped, 39.37-acre parcel (parcel number 39356) to the south; and an irregularly shaped, 33.57-acre parcel (parcel number 100632) to the east (see Figures 1 and 2a through 2d). The Property is located on a small plateau with a slight downward topographic slope toward the east, south, and southwest toward Hansen Creek and Brickyard Creek.

The Property is bordered by Fruitdale Road to the west and the Northern State Recreation Area (owned by Skagit County) to the north, south, and east. The Property is currently zoned urban reserve public open space and is outside the eastern edge of the Sedro-Woolley, Washington, city limits, but located within its urban growth area.

The Property currently comprises over 80 buildings and structures. The Property's current tenants, who primarily include the Cascade Job Corps, the Pioneer Center, and the National Guard, occupy some of the buildings, but many of the historical buildings are vacant.

2.2 Property History

The Property was developed in 1909 and operated as a treatment and residence facility and hospital for people with mental illness until its closure in 1973. After the facility's closure, the Property was transferred from the Department of Social and Health Services to the Department of Natural Resources and General Services Administration, which later combined to form DES.

The approximately 225-acre campus, which includes the former treatment and residence facility, hospital, and grounds, was designed to be self-sustaining and included on-site patient and staff housing, dedicated water supply reservoirs and associated potable water treatment facility, a fueling station for on-site vehicles, maintenance and paint shops, and a laundry facility. During the construction of the hospital, much of the Property was logged, graded, drained, and terraced to

provide a suitable ground surface for implementing the layout of the campus (Artifacts Consulting, 2008).

Several buildings have been demolished, and the debris from a few of these buildings reportedly has been buried and/or disposed of on site, as determined through interviews of maintenance staff at the Property (MFA, 2014). Many of the remaining buildings and structures associated with the former facility, as well as the campus landscape, are listed on the National Registry of Historic Places.

2.3 Features of Potential Environmental Concern

Features of potential environmental concern, defined as historical or current features with the potential to have contributed, or to continue to contribute, to environmental impacts at the Property, were identified as a result of the following environmental due diligence activities conducted as part of the FSA and during development of the preliminary RI/FS work plan (MFA, 2014, MFA, 2015a, and MFA, 2015b):

- Review of relevant environmental records in state and/or federal agency databases
- Review of reports documenting the development and historical uses of the Property
- Review of historical blueprints, building plans, and maps
- Review of existing environmental reports
- Site reconnaissance visits
- Interviews with DES employees, include facility maintenance staff, and a local government representative

Table 1 provides a summary of all features of potential environmental concern identified at the Property. Locations for the features of potential environmental concern are also show in Figures 2a through 2d.

Not all of the features of potential environmental concern identified at the Property were investigated. This preliminary RI/FS was designed to investigate features with the greatest potential for environmental impacts, as determined through consultation with Ecology staff and as identified in the FSA and work plans (MFA, 2014, MFA, 2015a, and MFA, 2015b). Those features that were investigated, and the associated investigation locations, are identified in Table 1.

Chemicals of interest (COIs) associated with the features of potential concern listed in Table 1 include: total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc).

2.4 Previous Investigations

The following subsurface investigations have been completed at the Property.

2.4.1 1993 UST Removal

In 1993, Lone Rock Resources evaluated soil contamination associated with four removed and one remaining, decommissioned underground storage tanks (USTs) near the Maintenance building, the Douglas building, and the Denny building (Lone Rock Resources, 1993). Samples were collected from the soil surrounding the four former and one decommissioned UST locations and analyzed for petroleum constituents to evaluate potential petroleum releases to the subsurface. Concentrations of gasoline were identified in soil near the two former USTs near the Maintenance building at concentrations up to 7,000 parts per million (ppm), which is above the MTCA Method A CUL of 100 ppm (no benzene detected). Groundwater was confirmed to be in contact with impacted soil, but was not sampled. Diesel and gasoline were not detected in soil at concentrations above the MTCA Method A CULs in the other UST locations that were investigated during this event. No additional assessment of soil or groundwater contamination in association with these USTs was conducted, until this preliminary RI/FS, which evaluated contamination in association with the USTs near the Maintenance building (see Table 1).

2.4.2 2014 Focused Site Assessment

On August 19, 2014, MFA conducted a limited subsurface investigation at the Property to evaluate the presence or absence of environmental impacts associated features of potential environmental concern identified in the FSA work plan (MFA, 2014). Features of environmental concern, including those identified in the FSA work plan as well as others identified in the FSA report (MFA, 2015a) and partial RI work plan (MFA, 2015b), are summarized in Table 1 and discussed in Section 2.3.

The investigation included the collection of two reconnaissance groundwater samples and eight soil samples from ten temporary borings (locations GP1 through GP10) advanced by a direct-push Geoprobe™ (see Figure 3a). Samples collected and analyzed as part of the FSA are summarized in Table 2 and boring logs are included in Appendix A. Analytical results from the 2014 FSA investigation are also included in this report; however, field and laboratory methodology are not included, but were included in the FSA report (MFA, 2015a).

In the FSA, MFA recommended additional investigation to address data gaps associated with confirmed soil and groundwater impacts and to evaluate features of potential environmental concern that had not previously been evaluated (MFA, 2015a). Investigation activities to address those data gaps were included in the RI work plan (MFA, 2015b).

3 SUPPLEMENTAL INVESTIGATIONS

Subsurface investigations were conducted in April and June 2015 to supplement the findings of the FSA. The April 2015 investigation focused on addressing data gaps identified in the FSA (MFA, 2015a) and evaluating the presence or absence of COIs associated with features of potential environmental concern that had not previously been evaluated, in accordance with the scope of

work provided in the partial RI work plan (MFA, 2015b). The features of concern with which the supplemental investigation locations are associated are summarized in the Table 1. The June 2015 investigation was conducted to supplement the preliminary findings of the April 2015 investigation.

Investigation locations are shown in Figures 3a, 3b, and 4. Samples collected and analyzed as part of the April and June 2015 supplemental investigations are summarized in Table 2.

During the supplemental investigation, groundwater samples from borings GP24, GP26, and GP27 (located adjacent to the former Laundry building) were also analyzed for indicators of natural attenuation (i.e., calcium, chloride, ferrous iron, magnesium, manganese, nitrate, and total organic carbon; see Table 2) in order to evaluate monitored natural attenuation (MNA) as a potential cleanup remedy for tetrachloroethene (PCE) and trichloroethene (TCE) impacts in groundwater near the former Laundry building.

The supplemental investigations included the following activities:

- Collection and analysis of soil and/or groundwater samples from 36 temporary borings (GP11 through GP21, and GP23 through GP48) and 14 hand auger locations (HA1 to HA14)
- Installation of four monitoring wells (MW01 through MW04) and collection and analysis of groundwater samples
- A survey of the measuring point (i.e., top of casing or top of polyvinyl chloride [PVC]) elevations for the four monitoring wells
- Measurement of water levels in the four monitoring wells
- Installation of a soil vapor probe through the former Laundry building foundation, and collection and analysis of a sub-slab soil vapor sample

Field and analytical methods used during the supplemental investigations were described in the sampling and analysis plan, included as appendix to the partial RI work plan (MFA, 2015b). Boring logs from the FSA and the supplemental investigations, and monitoring well construction logs, are included as Appendix A. Field sampling data sheets (FSDSs) for soil and groundwater samples collected during the supplemental investigations are included as Appendix B; groundwater quality data collected during the low-flow purging performed prior to collecting groundwater samples are included on the water FSDSs. FSDSs for samples collected during the FSA are not included in this report, but are included in the FSA (MFA, 2015a). Analytical results are discussed in Section 5.

Soil conditions were described and visual and olfactory observations were recorded during drilling; documentation included soil types, lithologic contacts, moisture, and sample depths (Appendix A). Geographic coordinates for the boring locations were recorded using a hand-held global positioning system device; the monitoring wells were surveyed by Skagit Surveyors & Engineers on June 16, 2015.

Total boring depths, screened intervals, and sample collection dates and depths are summarized in Table 2 and included on the boring and well completion logs (Appendix A). Specific chemical

analyses were chosen for each location based on potential chemical sources, as identified in the partial RI work plan (MFA, 2015b). Soil and groundwater samples were submitted for analysis to OnSite Environmental, Inc. (OnSite) of Redmond, Washington, under standard chain-of-custody procedures. Soil vapor samples were submitted for analysis to Eurofins Toxics, Inc. of Folsom, California, under standard chain-of-custody procedures.

Hand auger sample locations were adjusted in the field to provide a varied representation of building types and conditions.

A boring was advanced at location GP22 for collection of a groundwater sample, but no groundwater was encountered in the boring; therefore, no samples were collected from that location, but soil observations were recorded (see Appendix A).

An attempt was made to install a fifth monitoring well, co-located with boring GP30; however, the well was not installed after a storm drain was ruptured during drilling.

No samples were collected from borings G43 and GP44 in the former Ward buildings area (see Figure 3b) because debris was not observed in the borings.

4 PHYSICAL SETTING

4.1 Topographic Setting

The Property is located on a slight topographic plateau to the north of the Skagit Valley and is within the Lower Skagit-Samish watershed. Both Hansen and Brickyard Creeks are tributaries of the Skagit River, which is located to the south of the Property. In general, the Property slopes to the south and southeast toward the Skagit Valley and the Skagit River (Water Resource Inventory Area No. 3). Goat Hill, located in the northwest corner of the Property, contains the highest point of elevation at the Property (approximately 310 feet above sea level). The lowest elevation point lies along the southern boundary of the Property at approximately 100 feet above sea level.

4.2 Geology

According to the Geologic Map of the Sedro-Woolley North and Lyman 7.5-minute quadrangles, the Property and vicinity are underlain by Quaternary glaciomarine drift (Dragovich et al., 1999). The glaciomarine deposits typically consist of "poorly sorted, poorly compacted diamicton consisting of silty, sandy, gravelly clay to clayey gravel; moderately well- to well-sorted sandy silt, sandy clay, clayey silt, and clay" (Dragovich et al., 1999). Geologic cross sections developed through interpretation of well log, geotechnical boring, and field information, show approximately horizontally oriented, 100- to 130-foot thick deposits of Quaternary glaciomarine drift within the vicinity of the Property (Dragovich, et al., 1999).

MFA reviewed well logs from Ecology's online well log database for wells located in the nearest quarter sections adjacent to the Property tax parcels to better understand the local geology and identify potential water-bearing zones that may be encountered at the Property. Several logs were identified for geotechnical borings located on the Property. The exact location of these borings is unknown, but the logs indicate that the Property is underlain by approximately 25 feet of silt in some locations and approximately 15 feet of sand and gravel overlying silty sand in other locations (MFA, 2015a).

Soil observations recorded during the FSA and supplemental investigations indicate that the geology is relatively consistent throughout the Property, except at locations near Hansen Creek (see Figures 3a, 3b, and 4 for boring locations and the associated boring logs in Appendix A). Thick units of soft to hard, non-plastic, silt and clay with varying amounts of fine sand to depths of approximately 9 to 15 feet below ground surface (bgs) were encountered in most boring locations. Underlying the silt unit, thick deposits of bluish gray silty clay to clay was observed to the maximum depth of 25 feet bgs. Minor lenses of silty sand and silty or sandy gravel were encountered intermittently within silt and clay units at depths between 10 and 25 feet bgs, the deepest depth explored. Borings that were located in closer proximity to Hansen Creek to the north of the Power House (GP17, GP18, GP19, GP20), contained sandy and gravelly soils a depths below the silt and silty sand unit at approximately six feet. Borings located topographically higher than those borings north of the Power House, but close to Hansen Creek, contained sand and gravel units at approximately 15 feet bgs.

Fill containing brick pieces and woody debris has been observed up to 15 feet bgs in the area to the north of the Power House (see locations GP33, GP34, and MW04 in Figure 3a and the associated boring logs in Appendix A) .

Heterogeneities and cross-cutting layers are typical of this type of geologic environment; therefore, environmental impacts at the Property are not likely to migrate significant distances because conductive soil layers are probably not well interconnected or continuous.

4.3 Surface Water

Two creeks, Hansen and Brickyard, intersect the Property (Figure 1). Hansen Creek bounds the north, east, and southeast portions of the Property. Brickyard Creek is located along the western perimeter of the Property. Both of these creeks discharge to the Skagit River to the south of the Property. Tributaries of Hansen Creek are located along the southwest slope of Lyman Hill and areas to the north of Goat Hill. Brickyard Creek contains tributaries to the south of Goat Hill and to the east of Fruitdale Road. A small retention pond that bisects Brickyard Creek is located to the east of the National Guard Armory facility.

4.4 Groundwater

Groundwater was encountered between 6 and 14 feet bgs during the UST removal investigation (Lone Rock Resources, 1993). Several logs from Ecology's online well log database for domestic water wells in the general vicinity indicate that shallow groundwater is present at depths from less than 20 feet bgs to greater than 80 feet bgs (MFA, 2015a). These domestic water well logs suggest

that the local geology is variable and is generally composed of water-bearing zones consisting of sand and gravel interspersed with layers of silt and clay. This type of variable geologic environment is consistent with MFA's understanding of the glaciomarine drift deposits present in the area.

Groundwater was encountered in temporary borings at depths between 6 and 18 feet bgs during the FSA and the supplemental investigations (see water FSDSs in Appendix B and MFA, 2015a). Water-bearing zones were generally encountered at depths below 10 feet (see boring logs in Appendix A). Static water levels were measured in monitoring wells MW01 through MW04 at depths between 10.4 and 17.8 feet bgs (see Table 3).

Groundwater elevations were determined using the surveyed measuring point elevations and measured depth to water elevations from the four monitoring wells (see Table 3). Using these groundwater elevations, groundwater across the northern portion of the Property was determined to flow towards the east (Figure 5). Due to the large size of the Property and the limited area represented by the four monitoring wells, it is possible that the groundwater flow direction varies throughout the Property. It is inferred that groundwater in other areas of the Property flows either southeast due to the gradual topographic slope of the area toward the Skagit River Valley, west towards Brickyard Creek, or east towards Hansen Creek depending on the location at the Property (see Figure 1).

4.5 Terrestrial and Aquatic Life

The ground surface at the Property generally consists of grass and well established trees and shrubs, which are dispersed throughout the Property, as well as localized areas covered with paved parking and roads and impervious structures (see Figures 2a through 2d); most of the Property is vegetated and unpaved. The original planting plan for the entire campus consisted of thousands of trees and shrubs (Artifacts Consulting, 2008). Many of these same trees and shrubs remain on the campus today. The Property abuts the Northern State Recreation Area (NSRA), which includes more than 700 acres of open, vegetated space to the north, east, and south of the Property. Residential development borders the Property to the west. The NSRA area contains heavily vegetated forestland and wetlands that have the potential to support a wide variety of wildlife.

Hansen Creek, located along the north, east, and southeast boundaries of the Property, is a salmon-bearing stream. The Upper Skagit Indian Tribe, in collaboration with Skagit County, completed an over $2.7 million floodplain restoration project in 2009 to restore salmon habitat in a portion of the Hansen Creek watershed located immediately south of the Property.

Vaux's swifts, a small swift native to North America and northern South America, roost in the Power House smokestack by the thousands in the spring and fall during their yearly migration.

5 ANALYTICAL RESULTS

Laboratory analytical reports from the preliminary RI are provided in Appendix C. 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 U.S. Environmental Protection Agency (USEPA) procedures for evaluating laboratory analytical data (USEPA, 2004, 2008, 2014) and appropriate laboratory and method-specific guidelines (OnSite, 2012 and 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 D. The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

Analytical laboratory reports and data validation memoranda from the FSA are included in the FSA report (MFA, 2015a).

The following is a summary of the soil and groundwater analytical results for samples collected during the FSA and supplemental investigations. The analyses performed are summarized in Table 2; analytical results are summarized in Tables 4a, 4b, 5, and 6; and sample locations are shown in Figures 3a, 3b, and 4.

5.1 Soil

PAHS

PAHs were analyzed in samples collected from suspected building demolition debris piles, suspected incinerator and landfill refuse disposal areas, former coal storage and handling areas, and near the diesel ASTs. PAHs were detected in shallow soil samples collected north and northeast of the Power House at depths up to seven feet bgs (GP2, GP3, GP4, GP9, GP32, and GP34; see Table 4a and Figure 3a).

PCBS

PCBs were analyzed in samples collected from the former refuse incinerator and former PCB-containing transformer vault locations. PCBs were not detected in any of the samples analyzed (see Table 4a).

TPH

Samples from the area near the former gasoline USTs, former Superintendent's residence building demolition debris pile, suspected incinerator and landfill refuse disposal areas, and near the diesel ASTs were analyzed for identification of hydrocarbons. No gasoline-range hydrocarbons were identified in any of the samples (see Table 4a). Heavy-oil-range hydrocarbons (i.e., diesel-range and/or lube-oil-range hydrocarbons) were identified in samples from near the diesel ASTs; therefore, those samples and additional samples from that area were analyzed for heavy-oil-range hydrocarbons (see Table 4a).

Heavy-oil-range hydrocarbons were detected in the samples collected near the diesel ASTs in the area to the north and northeast of the Power House at depths up to 12 feet bgs. Heavy oils concentrations (represented as the sum of the diesel-range and lube-oil range hydrocarbon concentrations) ranged from 150 milligrams per kilogram (mg/kg) to 2,920 mg/kg. The highest concentrations were detected in shallow soil samples from locations GP9 and GP10 (see Figure 3a).

Gasoline-range hydrocarbons were analyzed in samples collected from borings near the existing unleaded gasoline AST and former gasoline USTs (GP7 and GP12, see Figure 3a), but were not detected.

SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCS)

One soil sample, from boring GP12 located near the Maintenance building (see Figure 3a), was analyzed for SVOCs, but no detections were identified.

VOCS

Samples from the area near the former gasoline USTs, former Superintendent's residence building demolition debris pile, suspected incinerator and landfill refuse disposal areas, and near the former Laundry building were analyzed for VOCs. Acetone was detected in samples from the suspected incinerator and landfill refuse disposal area and former Laundry building (GP4, GP5, GP12 and GP23; see Figure 3a) at depths up to 15 feet bgs and at concentrations ranging from 0.01 mg/kg to 0.16 mg/kg (see Table 4a). PCE and TCE were detected at GP23 (located near the former Laundry building) at a depth of 5 feet bgs at concentrations of 0.011 mg/kg and 0.0035 mg/kg, respectively: PCE and TCE were not detected in a sample collected at 15 feet bgs from this same location. No other VOCs were detected.

Samples collected near the diesel ASTs (GP9 and GP10) and near the existing gasoline AST (GP7) were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), but not detections were identified.

METALS

Metals (includes arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc) were analyzed in samples collected near the Maintenance building, the former Superintendent's residence building demolition debris pile, suspected incinerator and landfill refuse disposal areas, former coal storage and handling areas, and near the diesel ASTs (boring locations GP1, GP2, GP3, GP4, GP5, GP9, and GP39; see Figures 3a and 3b). All metals were detected at least once and all samples had at least one metal detected (see Table 4b). Metals were detected in soil at depths up to 14.5 feet bgs and concentrations were general low and relatively consistent between locations, which indicates they may be representative of area-wide background conditions and not associated with a hazardous substance release.

Additional borings were advanced at the Property to evaluate area-wide background metals concentrations in order to determine whether the previously detected metals concentrations (as discussed above) are representative of area-wide background conditions or a result of a potential hazardous substance release. Samples from borings located in landscaped areas of the Property where there were no known features of environmental concern were analyzed for metals for an area-wide background determination (boring locations GP14, GP16, GP19, GP35, GP36, GP37, GP38,

and GP42; see Figure 4). The area-wide background metals determination is discussed in Section 7.1. Metals were detected in soil at depths up to 9 feet bgs and at generally low and relatively consistent concentrations between locations, with the following exceptions:

- Lead was detected at 900 mg/kg at 0.5 feet bgs and arsenic at 22 mg/kg at 9 feet bgs at GP16 in the athletic field at the north end of the campus (see Figure 3a)
- Arsenic was detected at 71 mg/kg at 0.5 feet bgs at GP36 near the former Ward buildings (see Figure 3b)

Additional samples were collected to further evaluate the elevated lead and arsenic detections listed above. Samples from borings GP45 through GP47 (located in the athletic field) were analyzed for lead and arsenic and samples from hand auger locations HA12 through HA14 were analyzed for arsenic (see Figures 3a and 3b). Lead and arsenic concentrations in the samples from GP45 through GP47 were generally low and relatively consistent with concentrations observed in other samples collected across the Property (as discussed above). Arsenic concentrations in the samples from HA12 through HA14 were elevated and ranged from 18 mg/kg to 61 mg/kg.

Additional samples were also collected from boring GP48, located south of the carpentry, paint, and planer shops, and analyzed for arsenic in order to evaluate soil in that location as a potential source for elevated arsenic concentrations detected in groundwater, as discussed in the next section (the greatest dissolved arsenic concentration in groundwater was detected at GP30, located adjacent to GP48).

Samples were collected from hand auger locations HA2 through HA9 (see Figures 3a and 3b) at a depth of 0.5 feet bgs and analyzed for lead to evaluate potential lead contamination in shallow soil associated with lead-based paint on the surfaces of historic buildings. Lead was detected in all samples at concentrations ranging from 25 mg/kg to 1,300 mg/kg; five out of the eight samples had lead concentrations greater than 250 mg/kg.

5.2 Groundwater

METALS

Reconnaissance groundwater samples were collected from borings GP2, near the diesel ASTs and in the former coal storage and handling area, and GP30, near the carpentry, paint, and planer shops, and analyzed for metals (including arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc)(see Figure 3a and Table 5); the sample from GP2 was analyzed for dissolved metals and the sample from GP30 was analyzed for total and dissolved metals. Dissolved arsenic, barium, and copper were detected at GP2 at relatively low concentrations. All total metals analyzed were detected at relatively high concentrations at GP30, but arsenic was the only dissolved metal detected at 58 micrograms per liter (ug/L).

Reconnaissance groundwater samples from borings located in potential downgradient locations (as determined based on topography and presence of surface water, prior to obtaining water elevation measurements to determine a flow direction) from features of potential concern located in the northeastern portion of the Property (boring locations GP15, GP17, GP18, GP20, GP21, and

GP29; see Figure 3a) were also analyzed for total and dissolved metals (see Table 5). Metals were detected in all the samples and the following total metals were detected at relatively elevated concentrations: arsenic, barium, chromium (total and assumed to be present in the trivalent form since no hexavalent chromium sources have been identified at the Property), lead, and selenium. Arsenic and barium were the only dissolved metals detected and of those metals, only arsenic was elevated with a maximum concentration of 17 ug/L detected at GP17.

In order to determine whether the total metals concentrations detected in the reconnaissance groundwater samples collected from borings were artificially elevated due to the high turbidity of the samples (see FSDSs in Appendix B) monitoring wells were installed adjacent to several of the boring locations and developed so that representative groundwater samples could be collected and analyzed for metals. Groundwater samples from those wells (MW01 through MW04; see Figure 3a) were analyzed for total and dissolved metals (see Table 5). Total and dissolved arsenic, barium, and lead were detected. Total and dissolved arsenic and lead concentrations were generally elevated; the detected barium concentrations were generally low. Total metals concentrations in samples collected from the wells were generally much lower than the concentrations detected in the reconnaissance groundwater samples from the borings, which indicates that the total metals concentrations from the borings are not representative of groundwater conditions and are likely a result of turbidity associated with the sampling method.

VOCS

Reconnaissance groundwater samples collected from borings located near the carpentry, paint, and planer shops; the former Laundry building; and the former gasoline USTs were analyzed for VOCs (see Figure 3a and Table 5). The following VOCs were detected: carbon disulfide, cis-1,2-dichloroethene (DCE), n-propylbenzene, PCE, sec-butylbenzene, and TCE; only PCE was detected at an elevated concentration (11 ug/L at GP8).

Samples from monitoring wells MW01 and MW02, located in inferred (as determined prior to measuring water elevations) downgradient locations from the former Laundry building, were also analyzed for only PCE and a sample from boring GP2, located near the diesel ASTs, was analyzed for BTEX. None of these constituents were detected.

SVOCS

Reconnaissance groundwater samples from borings located near the Maintenance building (GP11 and GP12) and in inferred (as determined prior to measuring water elevations) downgradient locations from the carpentry, paint, and planer buildings (GP21, GP29, and GP30), were analyzed for SVOCs (see Figure 3a). SVOCs were not detected in any of the samples analyzed (see Table 5).

PAHS

Reconnaissance groundwater samples from borings located near the Maintenance building (GP11 and GP12), near the former coal storage and handling areas and the diesel ASTs (GP2), and in inferred (as determined prior to measuring water elevations) downgradient locations from the carpentry, paint, and planer buildings (GP21, GP29, and GP30), were analyzed for PAHs (see Figure 3a). Naphthalenes, pyrene, and several carcinogenic PAHs (cPAHs) were detected, but only the cPAHs were detected at elevated concentrations at locations GP21 and GP29, as determined by the cPAH toxic equivalency quotients (TEQs)(see Table 5).

In order to determine whether the cPAH concentrations detected in the reconnaissance groundwater samples collected from borings GP21 and GP29 were artificially elevated due to the high turbidity of the samples (see FSDSs in Appendix B) monitoring wells were installed adjacent to the boring locations (MW01 and MW02; see Figure 3a) and developed so that representative groundwater samples could be collected and analyzed for cPAHs. cPAHs were detected in the sample from MW01, but were not detected at MW02 (see Table 5). The concentration detected at MW01 was over an order of magnitude less than the concentration detected in the sample from the boring completed in the same location (GP29)(see Table 5), which indicates that the cPAH concentrations from the borings are not representative of groundwater conditions and are likely a result of turbidity associated with the sampling method.

TPH

Reconnaissance groundwater samples collected from borings near the diesel ASTs (GP2), the former Laundry building (GP8), and the paint, planer, and carpentry shops (GP30) were analyzed for identification of hydrocarbons. No gasoline-range hydrocarbons were identified in any of the samples (see Table 5). Heavy-oil-range hydrocarbons (i.e., diesel-range and lube-oil-range hydrocarbons) were identified in the sample from near the diesel ASTs (GP2); therefore, that sample and additional samples from that area (GP15, GP17, GP18, GP20, GP32, and GP33) were analyzed for heavy-oil-range hydrocarbons (see Table 5). Heavy oils were only detected in the sample from GP2 at a concentration of 1,740 ug/L.

Gasoline-range hydrocarbons were analyzed in reconnaissance groundwater samples collected from borings near the former gasoline USTs (GP11, GP12, and GP13) and from borings in inferred downgradient locations (as determined prior to measuring water elevations) from the existing unleaded gasoline AST (GP21 and GP29)(see Figure 3a), but were not detected.

MONITORED NATURAL ATTENUATION PARAMETERS

MNA parameters were analyzed in samples collected from borings GP24, GP26, and GP27 (see Figure 3a). MNA parameter results and relevant field-measured water quality parameters are summarized in Table 6 and discussed in Section 6.1.1.

5.3 Soil Vapor

Given the elevated PCE concentration observed in groundwater adjacent to the former Laundry building (GP8), a sub-slab soil vapor sample was collected from below the foundation of the building (see Figure 3a) to determine if there is a potential for VOCs in soil or groundwater to migrate into indoor air within the building. The vapor sample was analyzed for PCE, TCE, 1-1 DCE, cis-1,2 – DCE, trans-1,2-DCE, and vinyl chloride (see Table 7). The sample was also analyzed for helium in order to ensure that no leaks were present in the sampling system. PCE was detected at 100 micrograms per cubic meter. No other constituents were detected (see Table 7).

5.4 Areas of Concern

Given the analytical results of the FSA and supplemental investigations conducted in August 2014, April 2015, and June 2015, as discussed above; the distribution of impacts, and the historical and current use of the Property, the following areas of concern (AOCs) were identified:

- AOC 1: Former Laundry Building – PCE and associated break-down products in shallow soil, groundwater, and soil vapor near the former laundry building
- AOC 2: Power House Building – heavy oils and cPAHs in surface soil and heavy oils in groundwater in the area to the north and northeast of the Power House
- AOC 3: Lead – lead in shallow soil adjacent to historic buildings, in the athletic field, and in groundwater north of the paint, planer, and carpentry buildings
- AOC 4: Arsenic – arsenic in soil in the athletic field and near the former Ward buildings and in groundwater in the northeastern portion of the Property
- AOC 5: Background Metals – slightly elevated, and relatively consistent metals concentrations were detected in soil throughout the Property

These AOCs are considered preliminary and may be refined through the development of and screening to CULs and additional background assessment and/or site characterization. A preliminary CSM was developed for these AOCs, as discussed in the next section. Based on the CSM, preliminary CULs were developed for comparison to detected COI concentrations (see Section 7). CUL exceedances by AOC are discussed in Section 8.

6 PRELIMINARY CONCEPTUAL SITE MODEL

The preliminary CSM describes potential chemical sources, release mechanisms, environmental transport processes, exposure routes, and receptors. The primary purpose of the CSM is to describe pathways by which human and ecological receptors could be exposed to site-related chemicals. A complete exposure pathway consists of four necessary elements: 1) a source and mechanism of chemical release to the environment, 2) an environmental transport medium for a released chemical, 3) a point of potential contact with the impacted medium (referred to as the exposure point), and 4) an exposure route (e.g., soil ingestion) at the exposure point.

The preliminary CSM describes potential exposure scenarios based on information collected during the Property investigations. Elements of potentially complete exposure scenarios relevant to human health and ecological receptors are discussed below and are presented in Figure 6. The preliminary CSM diagram focuses on Property receptors and potential exposure pathways related to historical releases from the Property. Limited data are available for areas outside of the Property boundaries, which may be affected by sources unrelated to on-Property historical releases. Potential off-Property sources and potential exposure pathways are therefore not well understood. The CSM may be subject to further modification as additional information becomes available. The CSM and exposure scenarios for a site play a role in selection of cleanup standards.

6.1 Source Characterization

Potential sources of contamination associated with historical and current operations at the Property were identified during the environmental due diligence activities conducted as part of the FSA work

plan (MFA, 2014), the results of the FSA (MFA, 2015a), and the partial RI work plan (MFA, 2015b) as discussed in Section 2.4 and listed in Table 1. COIs associated with those features of potential environmental concern were detected in soil, groundwater, and soil vapor at the Property during the FSA and supplemental field investigations. COIs detected in soil and groundwater include metals, TPH, VOCs, and PAHs; PCE was detected in soil vapor. The features of potential environmental concern associated with confirmed impacts to soil, groundwater, and/or soil vapor are described in the sections below.

6.1.1 AOC 1: Former Laundry Building

PCE and TCE (a breakdown product of PCE) were detected in soil and groundwater to the northeast of the former laundry building and PCE was detected in soil vapor collected from beneath the building foundation. PCE has been the primary solvent used for dry cleaning activities since the late 1950s. No records of dry cleaning operations at the former laundry building were located; however, the presence of PCE in groundwater, soil, and soil vapor indicates that a solvent containing PCE was likely used at some point during historical operations in the building.

Historical building plans and utility maps were reviewed as part of the Property environmental due diligence. Laundry extractor machines were identified on the plans located at the north end of the former laundry building and a potential drainage pipe was identified on the utility maps at the northeast corner of the building in the approximate location of borings GP8 and GP23 (see Figure 3a). The suspected use of PCE in the extractors is substantiated by the PCE and TCE detections in soil and groundwater to the northeast of the building. The most likely source area for PCE is in the vicinity of the extractors and discharge pipe at the north end of the building, which is supported by the absence of PCE detections in groundwater to the west, southeast, and southwest of the building.

PCE was detected in soil, which indicates there may be a soil source under the building; however, the PCE concentration in soil vapor was relatively low, which suggests that a soil source, if present, is likely minimal.

6.1.2 AOC 2: Power House Building

Historically, coal was imported by rail and stored in bins behind the Power House where it was burned in the smokestack as a fuel for heating the boilers used to steam-heat the campus. Diesel fuel, stored in two approximately 5,000-gallong ASTs, is used as a backup fuel to heat the boilers (natural gas is currently used as the primary fuel). The diesel ASTs are located in a covered structure off the north side of the Power House building and equipped with a handheld fuel dispenser.

Heavy oils in the shallow soil and groundwater were detected in locations immediately north and northeast of the Power House building. Impacts appear to be fairly localized to the area immediately to the north and northeast of the Power House, but additional soil and groundwater impacts may be present underneath the building, in particular under the diesel ASTs. However, potential leaks and/or drips from the handheld fuel dispenser is likely the primary source of the heavy oils impacts, which would suggest that contamination is largely localized to the area behind the building.

Coal fragments were observed in shallow soil to the northeast of the Power House, but the extent was fairly minimal and no thick layers of coal were observed in any of the borings (see Appendix A). cPAHs were detected in the shallow soil to the north of the Power House and are likely associated with coal material, but cPAH impacts appear to be fairly localized. However, coal-related impacts (i.e., heavy metals, PAHs) may be present in soil immediately adjacent to the smokestack. No samples were collected immediately adjacent to the smokestack due to utility access constraints.

6.1.3 AOC 3: Lead

Elevated concentrations of lead were identified in shallow soil immediately adjacent to historical buildings and at one location in the athletic field (GP16)(see Figure 7). The Cultural Resources Assessment report for the campus indicated that paint treated with lead and zinc was historically used on the campus buildings (Artifacts Consulting, 2008). Elevated lead concentrations were detected in shallow soil immediately adjacent to vacant historic buildings that have been vacant since the hospital's closure in 1973; lead concentrations in shallow soil adjacent to maintained, occupied buildings and newer buildings on the campus were generally lower. Next to the vacant buildings, a significant number of paint chips were observed during soil sample collection. Paint may have flaked or peeled off of the building surfaces, or may have been removed by sandblasting, and deposited in shallow soil. The elevated concentrations of lead identified in these soil samples suggests that lead paint is/was present in the exterior paint of the historical buildings and has impacted the soil at the Property.

Lead impacts in soil associated with lead-based paint are likely localized to shallow soil in the immediate vicinity of the historical buildings, but may also have been redistributed to other locations on the Property by wind-based transport or by excavation and replacement of soil. An elevated lead concentration was also detected in shallow soil in the athletic field (GP16) and total and dissolved lead were detected in groundwater in monitoring wells near Hansen Creek (MW01 and MW02). It is unclear whether those lead detections are associated with other sources or if lead-based-paint-contaminated soil has migrated or been re-deposited in other locations at the campus. Aside from these localized detections in the groundwater sample, and in soil from the athletic field and adjacent to historical buildings, lead concentrations in soil at other locations sampled throughout the Property have been fairly low.

6.1.4 AOC 4: Arsenic

Elevated concentrations of arsenic in soil and groundwater have been identified at the Property. Arsenic occurs naturally in soil and groundwater throughout Washington State due to the chemical makeup of the geologic materials common in this area. Ecology has determined that the natural background for arsenic is 7 mg/kg in soil and 5 ug/L in groundwater; however, arsenic concentrations in some geologic environments may be even greater (Welch A. et. al., 2000).

Another potential source of arsenic may be the historical use of pesticides at the Property. Inorganic arsenic was a widely used in pesticides in the United States until its ban in 1988. The use of inorganic arsenic is unconfirmed at the Property, but is possible given the significant landscaping that has been performed on the Property since its development. During the historical operation of the self-

sustaining farm and greenhouse, the grounds keepers could have used arsenic-based pesticides to prevent destruction of plants in order to preserve the integrity of the campus and ensure sustainable food production.

6.1.5 AOC 5: Background Metals

Aside from arsenic and lead, as discussed above, which have been detected at highly elevated concentrations in some cases, other metals, including barium, chromium, copper, selenium, and zinc, have been detected at slightly elevated concentrations in soil throughout the Property. Given the relatively consistent concentration distribution of these metals, they are suspected as being related to an area-wide or natural background condition, but additional assessment is needed to make a determination.

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 widely vegetated, with large areas of unpaved ground surface. The soil-to-groundwater migration pathway is potentially complete because of the potential for infiltration of precipitation through the unpaved ground surface 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 area or downgradient of the source area 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.

Shallow groundwater beneath the Property likely discharges to Hansen Creek, which is located to the north, east, and southeast of the Property. Dissolved-phase contamination migrating downgradient of the source area could potentially discharge to Hansen Creek, resulting in surface water and sediment impacts.

6.3 Potential Receptors and Exposure Pathways

Potential human and ecological receptors and exposure pathways are shown in Figure 6.

The Property is currently used for commercial and residential purposes. Buildings historically used for hospital operations now provide temporary housing for Cascade Job Corps students and Pioneer Center residents. Redevelopment plans for the Property include expanded residential use of the

existing buildings as well as development of new structures on building pads of former structures and new development along the southern boundary of the Property. Therefore, based on current and potential future uses of the Property, human receptors may include construction workers, occupational workers, and residents.

Hansen Creek, located along the north end of the Property, provides salmon habitat that may attract recreational fishers. Therefore, recreational fishers are also potential receptors at the Property.

Ecological receptors could potentially be exposed to chemical impacts at the Property. As discussed in Section 3.5, the Property abuts the NSRA, which includes more than 700 acres of undeveloped forestland, grasslands, and wetlands and likely supports a diverse population of ecological receptors.

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

Occupational Workers and On-Site Residents—Occupational workers and residents currently occupy the Property for incremental amounts of time for activities related to the operation of the Cascade Job Corps and the Pioneer Center. Future redevelopment may include increased residential use of the Property. The pathways by which current or future residents could potentially be exposed to chemicals at the Property include:

- Direct skin contact with, incidental ingestion of, and inhalation of wind-borne particulates from chemically impacted shallow soil
- Inhalation of indoor air vapors emanating from soil or groundwater with volatile chemical impacts
- Direct skin contact with, ingestion of, and inhalation of volatizing chemically impacted potable groundwater
- Direct skin contact with and incidental ingestion of surface water or sediment in Hansen Creek that has been chemically impacted via discharges of chemically impacted groundwater

On-Site Construction Workers—There are currently no construction workers (e.g., excavation workers, trench workers) on the Property. However, construction activities may be performed as part of the Property's redevelopment or future maintenance or improvement activities. Future construction workers could potentially be exposed to chemicals at the Property by the following pathways:

- Direct skin contact with, incidental ingestion of, and inhalation of wind-borne particulates from chemically impacted soil in excavations
- Inhalation of indoor air vapors emanating from soil or groundwater with volatile chemical impacts

- Dermal contact with, incidental ingestion of, or inhalation of vapors emanating from chemically impacted shallow groundwater encountered in excavations below the water table, or ingestion of groundwater if used for potable purposes
- Direct skin contact with and incidental ingestion of surface water or sediment in Hansen Creek that has been chemically impacted via discharges of chemically impacted groundwater

Recreational Fishers—Hansen Creek, a tributary of the Skagit River, has been identified as a salmon habitat area and may be used by recreational fishers. Recreational fishers could potentially be exposed to chemicals at the Property by the following pathways:

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

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

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

Groundwater contamination was detected at relatively low concentrations approximately 20 feet or more from Hansen Creek. Therefore, exposure pathways that include discharges of chemically impacted groundwater to surface water and sediment in Hansen Creek are potentially insignificant, but will be retained as potentially complete pathways pending further investigation.

Scenarios involving exposure to vapors in outdoor air are also considered insignificant, given the attenuation that would likely occur in outdoor air.

6.4 Terrestrial Ecological Evaluation

Potential ecological exposure pathways are shown in Figure 6. Ecological receptors could potentially be exposed to chemical impacts at the Property via the potential exposure pathways discussed above. The Property abuts the NSRA, which includes more than 700 acres of undeveloped forestland, grasslands, and wetlands. Because this large area of undeveloped open space is likely to attract wildlife to the Property, a site-specific terrestrial ecological evaluation (TEE) was performed as part of the FSA (MFA, 2015a). The purpose of the TEE is to evaluate potential risk to ecological receptors from contamination at the Property (see WAC 173-340-7490(1)(b)). The exposure routes assessed for the TEE included plant uptake of chemicals in soil, ingestion of soil, and ingestion of

chemicals in plant material or prey. Ecological screening levels may be used as potential soil cleanup levels, as discussed below.

7 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. Historically, the Property has been used for residential purposes and it is anticipated that it may be used for residential purposes in the future. 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 above, a site-specific TEE conducted as part of the FSA (MFA, 2015a) indicated that ecological indicator concentrations (EICs) may be need to be used to screen detections of chemicals in soil. Detections of chemicals in soil were compared to EICs for plants, soil biota, and wildlife from Table 749-3 of WAC 173-340-900.

Metals occur naturally in soils and consistent and slightly elevated metals concentrations were detected throughout the Property, which suggests elevated metals concentrations in soil may be an area-wide or natural background condition and not related to a hazardous substance release. Sample locations in areas with no known impacts were identified in coordination with Ecology for conducting an area-wide background assessment (see Figure 4). Sample locations and depths were

selected to provide spatial distribution, and multiple depth intervals were analyzed to evaluate the vertical concentration profile (see Table 2 and 4b). Metals concentrations of 26 samples collected from ten locations (26 samples from 12 locations for arsenic concentrations) were used to calculate a metals-specific 90 percent upper tolerance limit with 90 percent coverage (90/90 UTL) concentrations (see output calculations in Appendix E). Elevated arsenic concentrations detected in the area near the former Ward building (GP36, HA12, HA13, and HA14; see Figures 3b and 4) were considered outliers and not included in the background calculation for arsenic.

These 90/90 UTL values are considered area-wide background soil concentrations and were calculated for arsenic, barium, chromium, copper, selenium, and zinc. Background concentrations were not calculated for lead, since lead appears to only be elevated in localized areas and is likely associated with a hazardous substance release(s) given the relatively high concentrations detected. Background concentrations were also not calculated for cadmium, mercury, or silver since these metals were either not detected or detected at relatively low concentrations in soil.

Soil screening levels or EICs that are less than the 90/90 UTL background concentrations may not apply (see Table 4b). However, soil metals concentrations were preliminarily screened to the MTCA Method A (or Method B when no Method A value was available) or EIC values pending additional assessment of background conditions.

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, they are used to evaluate groundwater conditions.

7.1.1 Points 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 and for ecological receptors is 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 and applicable or relevant and appropriate requirements (ARARs) for freshwater surface water. For certain constituents, Method A CULs were not available and Method B CULs were used. The minimum concentration of the state and federal aquatic life and human health freshwater water quality standards were selected as the surface water ARARs. These ARARs are for protection of aquatic species via direct contact with surface water potentially impacted by discharges of chemically impacted ground water. Screening to surface water ARARs was completed for every detected constituent except arsenic. The MTCA Method A CUL for arsenic is developed form background concentrations in Washington State and so the Method A CUL for arsenic was used for surface water screening. Additional CULs may be required to be protective of benthic species via direct contact with sediment impacted by discharges of chemically

impacted groundwater; however, additional assessment of this pathway is needed to determine if it is potentially complete.

Concentrations of VOCs detected in groundwater were also compared to groundwater screening levels for vapor intrusion, from Ecology's draft guidance on evaluation soil vapor intrusion (Ecology, 2015). Groundwater CULs, surface water ARARs, and vapor screening levels are summarized in Table 5.

7.2.1 Points 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. 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 for groundwater is not proposed at this time.

7.3 Soil Vapor

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

7.3.1 Points of Compliance in Soil Vapor

For soil gas 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 this Property.

8 PRELIMINARY CLEANUP LEVEL EXCEEDANCES

Soil concentrations are compared to preliminary CULs in Tables 4a and 4b. Soil exceedances of human-health-based CULs are shown in Figure 8; EIC exceedances are shown in Tables 4a and 4b, but are not shown on a figure since potential EIC exceedances require further evaluation relative to background conditions.

Groundwater concentrations are compared to preliminary CULs in Table 5. Groundwater CUL exceedances are shown in Figure 9. Total metals and cPAH exceedances in reconnaissance groundwater samples collected from borings are indicated in Table 5, but are not included on Figure 9 and are not discussed below because these exceedances were determined to be associated with

interference from the turbid water collected from the borings and not representative of groundwater conditions (as discussed in Section 5.2).

Detected concentrations of some constituents were summed for comparison to applicable CULs as follows:

- A TEQ was calculated for cPAHs for comparison to the benzo(a)pyrene CUL.
- Diesel-range and lube-oil-range hydrocarbons were summed for comparison to the heavy oils CUL.
- M-, p-, and o-xylenes were summed for comparison to the total xylenes CUL.
- 1- and 2-methylnaphthalene and naphthalene were summed for comparison to the naphthalene CUL.

CUL exceedances are discussed for each AOC, as identified in Section 5.4, below. Preliminary cleanup options to address CUL exceedances in each AOC are discussed in Section 9. These AOCs may be refined following development of final CULs.

8.1 AOC 1: Former Laundry Building

A single concentration of PCE exceeded the MTCA Method A CUL of 5 ug/L and the surface water ARAR of 0.69 ug/L in the groundwater off the northeast corner of the former laundry building at 11 ug/L in GP8 (see Figure 9). No other detections of PCE, TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, or vinyl chloride were identified in the groundwater collected around the perimeter of the building or in reconnaissance groundwater collected to the northwest of the detection at GP8 near Hansen Creek (GP25). PCE was detected in a reconnaissance groundwater sample collected to the north of the former laundry building near Hansen Creek (GP29), but was determined to not exceed surface water screening criteria. PCE was not detected in a monitoring well installed adjacent to GP29 (MW01). Given the low concentration of PCE detected in the sample locations near Hansen Creek, it is unlikely that impacts are migrating to surface water and the absence of detections of PCE or any of its daughter products at any other sample location near the former laundry building suggests that the groundwater impacts are likely localized to an area off the northeast corner of the laundry building.

Soil collected from a location to the south and immediately adjacent to the location of the detection in groundwater identified low detections of PCE and TCE in a soil sample collected at 5 feet bgs, but were not detected at the 15 foot sampling depth in the same boring location (GP23). Both the detection of PCE and TCE were below MTCA Method A CULs for unrestricted land use.

The detection of PCE in sub-slab soil vapor collected within the northeast corner of the former laundry building was below the MTCA Method B SL for sub-slab soil gas and indicates that volatizing concentrations of PCE are not entering the indoor air of the building at concentrations harmful to human health.

Additional characterization of the groundwater to the east and northeast sampling location with the exceeding PCE concentration in groundwater may help better determine the lateral extent of impacts given the lack of data at the other locations around the former laundry building. However, given the low concentrations detected in soil, groundwater, and soil vapor, it is likely that impacts may be able to naturally attenuate to concentrations below CULs over time and will not require immediate cleanup action.

MNA parameters (e.g., anions, dissolved metals, total organic carbon [TOC], ferrous iron) were analyzed in samples collected around the perimeter of the building (GP24, GP26, and GP27). MNA results from those locations indicate the following:

- High concentrations of a competing electron acceptor (nitrate) could impede reductive dechlorination of PCE and its breakdown products
- Favorable pH for microbial populations
- The elevated ferrous iron, chloride, manganese, magnesium, and calcium concentrations suggest anaerobic degradation may be naturally occurring
- The high turbidity concentration measured at GP26 indicates that there may be possible interference from the aquifer material and MNA parameter results may not be representative of aquifer conditions

These results indicate that conditions are not ideal for anaerobic degradation, but that it may be naturally occurring. However, neither PCE nor any of its daughter products were detected at these locations where the MNA parameters were analyzed. Therefore, the MNA results may not representative of conditions within the PCE plume, making these results inconclusive.

8.2 AOC 2: Power House Building

Exceedances of heavy oil and the cPAH TEQ concentrations were identified in shallow soil to north of the Power House building above MTCA Method A CULs (see Figure 8 and Table 4a). Exceedances of heavy oils were detected in surface soil at approximately 0.5 feet bgs, but were not detected at 3 feet bgs in the same area. Additional soil samples collected approximately 20 feet to the north, northeast, and east of the heavy oil and cPAH TEQ exceedances did not identify heavy oil or cPAH TEQ concentrations above MTCA Method A CULs. Impacts related to cPAHs and heavy oils to the north of the Power House building are likely localized and located within the shallow soil beneath the asphalt below the fuel dispenser to the diesel ASTs.

Groundwater was determined to have been impacted by a heavy oil concentration of 1,740 ug/L, above the MTCA Method A CUL of 500 ug/L, immediately north and adjacent to the handheld fuel dispenser connected to the diesel ASTs. Additional groundwater samples were collected approximately 20 feet to the north and northeast of the exceeding groundwater sample location toward Hansen Creek. A detection of heavy oils was not observed in either location. Given the lack of detections observed in the other two sampling locations, it is likely that heavy oil impacted

groundwater is relatively localized to immediately adjacent to the north side of the Power House building.

Heavy oils concentrations in soil in three locations (GP9, GP10, and GP34) located north to northeast of the Power House also exceeded EICs (see Table 4a). However, any remedial action to address petroleum contamination in this AOC would also likely address the EIC exceedance areas.

8.3 AOC 3: Lead

Lead concentrations in soil exceeding the MTCA Method A CUL of 250 mg/kg were observed at locations immediately adjacent to buildings on the campus, specifically those that have been seldom used since the closure of the hospital in 1973 and are currently in significant disrepair (Figure 7). Six lead detections significantly exceed the MTCA Method A CUL with concentrations ranging between 250 and 1,300 mg/kg.

One significant CUL exceedance of lead was located in the surface soil of a sampling location (GP16) that had been proposed for use in the background metals calculation as there had been no indication of any nearby source area. This indicates that lead exceedances in shallow soil may not be restricted to locations immediately adjacent to dilapidated buildings, but could instead illustrate the potential for small areas on the Property to contain elevated lead concentrations caused by widespread historic lead paint use on the exterior of buildings in the campus. Lead concentrations in soil in this area also exceeded EICs (see Table 4b).

The lateral and vertical extent of lead impacts in the soil surrounding the buildings and potentially throughout the campus are not well delineated and will likely require additional assessment prior to redevelopment and reuse of the historical structures.

A single CUL exceedance of dissolved lead above surface water criteria of 0.54 ug/L was identified at MW02 at 1 ug/L. No other exceedances or detections of dissolved lead were identified at any other sampling location. Given the low detection and that the MTCA Method A CUL for groundwater is 15 ug/L, this exceedance does not likely indicate an immediate cleanup is required for groundwater near MW02; however, additional characterization and/or monitoring of the groundwater is suggested to observe lead concentrations over time and attempt to identify any other lead exceedances in groundwater that could affect the nearby creek.

Total lead was also detected in monitoring wells, but the dissolved concentrations are considered representative of the concentrations available for potential migration to surface water. However, total lead concentrations may pose a drinking water concern if groundwater is used as potable water.

8.4 AOC 4: Arsenic

Arsenic soil concentrations in most locations sampled exceed EICs and/or human-health-based CULs (see Table 4b and Figure 8). As discussed in Section 6.1.4, arsenic occurs naturally in soils, and further investigation was conducted to establish and area-wide background concentration for the Property.

Arsenic was detected in 24 of the 29 samples[1]. The detections were consistent throughout the Property, generally ranging between 10 to 15 mg/kg in surface and subsurface soils up to 17 feet bgs. The consistency of the results both laterally and vertically strongly suggests that the concentrations are reflective of natural processes, rather than a surficial widespread source (e.g., historical use of an inorganic arsenic pesticide). Even under alkaline soil conditions supporting arsenic mobility it is unlikely that surficial arsenic would leach to depths up to 17 feet (Landau Associates, 2006 and USDHHS, 2007). At multiple locations, concentrations at deeper depths are higher than at shallow depths (e.g. GP16, GP37, and GP38), further indicating concentrations are not related to surface impacts. An exception to the general trends described above is a small area sampled (GP36, HA12, HA13, and HA14; see Figure 3b) with arsenic detections in near surface soil ranging between 38 and 71 mg/kg. These concentrations are well above other sample results and typical background conditions and likely reflect a locally impacted area. These sample results were therefore not included in background calculations.

The area-wide arsenic background concentration was calculated using a 90/90 UTL, consistent with recent Ecology guidance (Ecology, 2015), as discussed in Section 7.1. The 90/90 UTL is 17.2 mg/kg (see Table 4b and Appendix E). Note that this value is within the natural background range established for the state of Oregon (DEQ, 2013). The value is below the MTCA Method A value for unrestricted land use (20 mg/kg, based on "urban background") and above the wildlife and plant EICs of 7 and 10 ppm, respectively (Table 749-3 of WAC 173-340-900). MFA recommends using the 90/90 UTL value of 17.2 mg/kg when evaluating potential adverse effects to ecological receptors rather than the wildlife or plant EICs.

Given the identification of one localized area consisting of elevated arsenic, it is possible that localized areas of arsenic are present at the Property. Additional assessment of arsenic in soil is recommended to determine if the detections identified during this investigation are the result of area background or a natural background condition of arsenic at the Property. All non-background sample results (GP1, GP2, GP3, GP9, and GP39) collected in suspected source areas are below 90/90 UTL of 17.2 mg/kg and the MTCA Method A CUL of 20 mg/kg with the exception of the small area around GP36 which contains arsenic concentrations above both the site-specific background value and the human health criteria.

Arsenic was detected in groundwater at concentrations above the MTCA Method A value of 5 ug/L (see Figure 9). The value is based on natural background concentrations for the state of Washington (Table 720-1 of WAC 173-340-900) and is protective of the drinking water pathway. Note that typical background concentrations for the state can exceed 5 ug/L and be as high as 25 ug/L (Ecology, 2011) and concentrations in samples collected at the Property generally ranged between 1.2 and 21 ug/L, with the exception of GP-30 (58 ug/L) and MW01 (37 ug/L). Property arsenic soil and groundwater concentrations do not appear to be co-located and it is not known to what extent subsurface arsenic concentrations are affecting groundwater or if there are larger regional processes affecting the concentrations. For example, GP30 contained the highest concentration of arsenic in groundwater at 58 ug/L; however, an adjacent soil boring, GP48, had a maximum soil concentration

[1] The three samples that were reported as non-detect for arsenic had method reporting limits of either 6.5 mg/kg (two samples at GP35 and one sample at GP38). It is likely that concentrations of arsenic below these reporting limits may be present within those four non-detect samples.

of only 13 mg/kg at 17 feet bgs. Similar trends between high groundwater concentrations and low soil concentrations were observed between GP4 (6.2 mg/kg) and GP17 (17 ug/L), as well as at GP14 (14 mg/kg) and MW01 (21 ug/L). For example, GP30 contained the highest concentration of arsenic in groundwater at 58 ug/L; however, an adjacent soil boring, GP48, had a maximum soil concentration of only 13 mg/kg at 17 feet bgs. Similar trends between high groundwater concentrations and low soil concentrations were observed between GP4 (6.2 mg/kg) and GP17 (17 ug/L), as well as at GP14 (14 mg/kg) and MW01 (21 ug/L). Groundwater is not currently used for drinking water and thus immediate cleanup action is likely not required at this time; however, further monitoring of the groundwater near the creek may be considered.

Total arsenic was also detected in monitoring wells, but the dissolved concentrations are considered representative of the concentrations available for potential migration to surface water. However, total arsenic concentrations may pose a drinking water concern if groundwater is used as potable water.

Groundwater at the Property may discharge to surface water (Hansen Creek) and the MTCA Method A background value was applied for a preliminary evaluation of potential groundwater discharge to surface water impacts. Arsenic concentrations exceeding 5 ug/L were detected in groundwater near Hansen Creek. It is unknown if and at what concentrations groundwater discharges to the creek. Restoration of the creek is currently being conducted by the Upper Skagit Indian Tribe. Surface water, pore water sampling, or a seep survey may be considered to evaluate whether elevated arsenic concentrations are entering the creek.

8.5 AOC 5: Background Metals

Other metals, aside from arsenic and lead as discussed above, including barium, chromium, copper, selenium, and zinc, have been detected at concentrations above EICs in soil throughout the Property (see Table 4b). Given the relatively consistent concentration distribution of these metals, they are suspected as being related to an area-wide or natural background condition, but additional assessment is needed in order to make a determination. Therefore, preliminary cleanup options are not considered for this AOC in this report.

9 PRELIMINARY CLEANUP OPTIONS

Based on the current, partial understanding of the nature and extent of CUL exceedances within each AOC, this section describes the most likely set of cleanup options and associated costs for addressing each AOC. This discussion includes multiple options, as appropriate, for each AOC.

The primary goal is to identify any existing exposure risks, and offer remedial options to effectively eliminate these risks. This allows for addressing immediate exposure risks and potentially delaying cleanup actions to dovetail with property redevelopment plans. Preliminary cost estimates were developed to accompany these conceptual-level cleanup options.

9.1 Criteria for Cleanup Option Selection

Criteria typically 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. These criteria are as follows:

- 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

The cleanup options for each AOC presented in this section were selected either to a) address immediate exposure concerns (i.e., interim actions), or b) 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 will be generally considered in the selection of cleanup options (include discussion of criteria, e.g., permanence, protectiveness, etc.).

9.2 AOC 1: Former Laundry Building

As described in Section 6.1 above, PCE was detected in concentrations above the MTCA Method A CUL for groundwater near the former laundry building. Boring location GP8 exceeded CULs for PCE. In order to define the lateral extent of contamination, an additional boring was sampled (GP23). Although nearby boring GP23 had detections of PCE in the soil, they were below the CULs. Therefore, based on available information, the contamination is limited to a small area near (and possibly beneath) the former laundry building.

Exposure Routes –Three potential exposure routes exist for groundwater: inhalation of vapors, incidental ingestion, and direct contact. Complete pathways for incidental ingestion and direct contact only exist if workers are digging in soil below the water table. Potential inhalation exposure to occupants of the building is not a concern based on recently updated MTCA indoor air screening levels (Ecology, 2015).

Potential Remedies—There are several potential remedies for groundwater contaminated with PCE. Common remedial techniques considered for Area 1 are discussed below.

- **MNA**—Natural attenuation consists of allowing naturally occurring processes such as dilution, dispersion, adsorption, and subsequent biodegradation to destroy cVOC mass and reduce concentrations. Site conditions may be favorable for natural attenuation to occur. MNA is commonly combined with institutional controls and monitoring.

    - **Institutional Controls**—An environmental covenant containing language approved by Ecology would be recorded in Skagit County. The covenant would document the on-site environmental conditions and the associated proactive measures intended to limit exposure potential during future development. Requirements for Ecology notification prior to initiating subsurface activity would be included. The environmental covenant should also include notification requirements to utility workers that may have contact with contaminated groundwater while installing utilities or undertaking other construction activities.

    - **Monitoring Plan**—A long-term monitoring plan would be developed to support an MNA remedy. The plan would likely include quarterly monitoring, which would reduce to semiannual or annual monitoring over time.

- **Bioremediation**—In this process, microorganisms degrade contaminants through use or transformation of the target substances. Enhanced bioremediation involves the addition of substrates and/or nutrients to the subsurface to increase bacterial growth and degradation rates. Bioremediation has been successful at sites with low levels of contamination.

- **Source control measures**—These measures included excavation and off-site disposal of impacted soil, restoration of pavement and sidewalk concrete, and installation of a passive soil ventilation system in the gravel bedding around the building footprint. There is the potential for contamination (or source areas) to be located under the building. For the purposes of this document, it is assumed that areas beneath the building are not accessible for source control methods of removal. Additionally, since the impacted area is relatively small, and PCE concentrations are relatively low, source removal excavation is not necessary for this area. Therefore no cost estimate was prepared for this option. However, if during future redevelopment any plans include removal of this building, source control excavation could be considered.

Recommendations—Based on the concentrations of PCE in groundwater and near the former laundry building, there are no immediate risks of exposure. Therefore, an interim action is not

needed to address this AOC. A cleanup of this AOC could be scheduled at a future date to occur concurrently with the redevelopment timeline.

In terms of remediating this AOC in the future, the most cost effective solution is likely in situ bioremediation. An enhanced in situ bioremediation program (in the vicinity of GP8) could be implemented to reduce groundwater solvent concentrations. This can be accomplished by injecting amendments directly into the ground around the building footprint. A combination of amendments could be designed to enhance degradation of chlorinated ethenes through biotic and abiotic processes. This would use direct-push technology and a high-pressure pneumatic pump. Semiannual performance monitoring data would inform progress for the remaining PCE in the groundwater.

For the purposes of the cost estimate, one injection event is assumed to be sufficient to address the residual contamination in the area. It may require multiple injection events. Groundwater monitoring will be conducted in the vicinity to verify the effectiveness of the treatment system.

Both bioremediation and MNA would reduce contaminant mass and potentially reduce concentrations below preliminary CULs. Bioremediation is expected to have a shorter restoration time frame than MNA. MNA was selected as the preferred immediate action for the AOC because the reduction in restoration time frame with bioremediation does not justify the additional cost. Conceptual level cost estimates for the remedial options at the former laundry building are provided in Table 8. These costs estimates are preliminary and for comparison purposes; costs would be revisited once a preferred remedial option is selected.

9.3 AOC 2: Power House Building

As described above in Section 6.2, petroleum hydrocarbons (heavy oils, diesel, and lube oil) were detected in both soil and groundwater samples collected from north of the power house building. These detections were above MTCA Method A CULs and generally limited to near surface soils (detected at 0.5 feet bgs but not at 3 feet bgs). For the purposes of this report, it is assumed that exceedances are limited to this vertical extent. A total heavy oil exceedance was also observed in a single groundwater sampling location (GP2). The sample depth at this location was approximately 10 feet bgs.

Based on these investigation results, the contamination appears limited to a small area just to the north and northeast of the power house building.

Exposure Routes—Three potential exposure routes exist for the contaminated soil and groundwater at the power house building: inhalation of vapors, incidental ingestion, and direct contact. The primary exposure routes of concern are the direct contact and incidental ingestion of near surface soils. There is risk of exposure for workers who may be digging in near surface soils within the AOC.

Potential Remedies—There are several potential remedies for soil and groundwater contaminated with petroleum hydrocarbons. Common remedial techniques include bioremediation, chemical oxidation, removal via excavation, and containment via capping. MNA may also be considered. These remedies are generally consistent with the approaches discussed in Section 8.2.

Recommendations—Based on the concentrations of petroleum hydrocarbons detected in the soil and groundwater, there are limited immediate risks of exposure. As mentioned above, the primary concern is for workers that would disturb the near surface soil (i.e., utility maintenance) around the power house building. Therefore, some form of immediate interim action is recommended for this AOC.

In terms of remediating this AOC, the most cost effective solution is likely to be near surface soil excavation and backfilling with an amended soil material. The contaminated near surface soil would be removed by excavation. The backfill material would be amended (mixed) with a controlled-release oxygen product in order to address any residual contamination that may remain beyond the excavation. The controlled-release oxygen product will accelerate the biodegradation of petroleum hydrocarbons in the AOC.

The capital costs of implementing a removal and amendment action are higher than MNA or containment via capping. However, because the contaminant degradation rate is accelerated compared to natural degradation, there is minimal site disturbance; and application would be easy, this would be a faster cleanup than could be provided by the other options. Additionally, the capping and MNA options will require ongoing groundwater monitoring, which would have a longer duration than removal and amendment.

The removal and amendment option can be accomplished by a single event. This event would include excavation, off-site removal and disposal of contaminated soil, and mixing backfill material with a chemical oxidant that destroys petroleum contaminants. The amendment works by converting the contaminants to innocuous compounds that are commonly found in nature. Semiannual performance monitoring data would be collected to monitor for petroleum degradation progress in the groundwater.

All three options could reduce contaminant mass and potentially reduce concentrations below preliminary CULs. Excavation with amendment backfill would have a much shorter restoration time frame than the other two options. Conceptual level cost estimates for the remedial options at the power house building are provided in Table 9. These costs estimates are preliminary and for comparison purposes; they would be revised once a preferred remedial option is selected.

9.4 AOC 3: Lead

Lead was identified to exceed the MTCA Method A CUL near several of the historic buildings on the campus. Additional characterization of the lateral and vertical extent of impacts to the soil surrounding the buildings is recommended to help guide any future redevelopment actions in those areas of the Property. Additional monitoring of lead in groundwater near Hansen Creek may be used to determine if surface water is being affected by elevated dissolved lead concentrations at the Property as described in Section 6.

9.5 AOC 4: Arsenic

As discussed in Section 6, one area on the Property was identified to have been impacted by arsenic in shallow soil (GP36, HA12, HA13, and HA14). Additional characterization of the lateral extent of

arsenic impacts in this area is recommended to determine if concentrations are related to a larger source area or are generally localized. Arsenic detections exceeding 5 ug/L were identified in groundwater near Hansen Creek. It is unknown if and at what concentrations groundwater discharges to the Creek. Surface water or pore water sampling and a seep survey may be considered to evaluate whether elevated arsenic concentrations are entering the Creek.

10 RECOMMENDATIONS

Additional investigation and site characterization may be warranted to further delineate the contamination and associated risks. These remedial cleanup options were developed to a conceptual level. Prior to implementing any interim actions, or selecting any final cleanup options, a data gap investigations should be conducted. Additionally, further evaluation (MTCA comparison and evaluation of the alternatives) and analysis (disproportionate cost analysis) of the cleanup options is recommended.

All remedial cleanup options should be verified to meet the MTCA threshold requirements before being considered as a cleanup action. Any cleanup alternatives considered should provide for a reasonable restoration time frame. Under MTCA, the most practicable permanent solution should be used as the baseline against which other alternatives are compared. This MTCA evaluation has not yet been completed, however, preliminary conceptual remedial options and a preliminary MTCA evaluation have been developed. Following additional site characterization, these 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.

Former Laundry Building—Based on the concentrations of PCE in groundwater and near the former laundry building, there are no immediate risks of exposure. Therefore, an interim action is not needed to address this AOC. A cleanup of this AOC could be scheduled at a future date to occur concurrently with the redevelopment timeline. At this time, MFA suggests MNA as the preferred immediate action for the former laundry building because the reduction in restoration time frame with bioremediation does not justify the additional cost. An environmental covenant and protective signage would be required for protection of site workers and to warn of potentially harmful substances beneath the asphalt. Quarterly groundwater monitoring would be conducted in the vicinity to monitoring the MNA progress.

Power House Building—MFA recommends limited excavation and backfilling with amended soil material in the vicinity of the power house building. The excavation actions will remove near surface soil contamination (and risk associated with direct contact). The amended backfill material will help reduce groundwater petroleum concentrations. Groundwater monitoring should be conducted in in the vicinity to verify the effectiveness of the treatment.

Lead in Soil and Groundwater—MFA recommends additional characterization of the lead concentrations in the soil adjacent to the historical buildings and throughout the Property to identify

the presence/absence of any other localized impacts as observed at GP16 and additional monitoring of lead in groundwater near Hansen Creek.

Arsenic in Soil and Groundwater—MFA recommends additional characterization of arsenic concentration is soil near GP36 and throughout the Property to identify the presence or absence of any other localized impacts and additional monitoring and characterization of arsenic in groundwater.

Other Metals in Soil—MFA recommends additional characterization of metals in soil throughout the Property to determine whether EIC exceedances are a result of a natural background condition or a hazardous substance release.

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.

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TABLES

Table 1
Features of Potential Environmental Concern
Northern State Hospital Property
Port of Skagit
Sedro-Woolley, WA

	Location ID	Report figure showing this feature/boring location	Feature Index Number on Figures
Features of Potential Environmental Concern[a]			
Potential parts cleaning and other maintenance-related activities in the Maintenance Building and former 1,000- and 2,000-gallon gasoline USTs	GP1, GP11, GP12	2a, 3a	17, 18, 19
Two existing 8,000-gallon (approximately) diesel ASTs with a fuel dispenser and former coal bin and smokestack located north of the Power House	GP2, GP9, GP10, GP32, GP33, GP34	2a, 3a	14, 15, 16
Former refuse incinerator and potential coal storage and/or disposal location east of the Power House	GP3	2a, 3a	12
Buried debris pile with potential building demolition debris, landfill refuse, coal, and asphalt located east and northeast of the Power House	GP4, GP5	2a, 3a	9, 11
Drinking water chlorination chemical storage and use in the former Filtration Building	GP6	2a, 3a	6, 7
Existing 500-gallon (approximately) unleaded gasoline AST located north of the Paint and Planer shops	GP7	2a, 3a	2
Potential dry cleaning solvent use in the former Laundry Building	GP8, GP23, GP24, GP26, GP27, GP31	2a, 3a	1
Potential southern migration of dissolved-phase COIs via groundwater transport	GP13, GP15, GP28, MW03	2a, 3a	1, 15, 17, 18, 19
Potential discharge of COIs in groundwater to surface water in Hansen Creek	GP17, GP18, GP20, GP21, GP25, GP29, MW01, MW02, MW04	2a, 3a	1, 3, 4, 5, 15
Area-wide background metals concentrations in soil	GP14, GP16, GP19, GP35, GP36, GP37, GP38, GP42	4	NA
Elevated concentrations of arsenic and/or lead in soil	GP45, GP46, GP47, GP48, HA12, HA13, HA14	3a, 3b, 4	NA
Historical operation of the former Paint, Planer, and Carpentry Shops, including storage of wood painting materials	GP22, GP30	2a, 3a	3, 4, 5
Former PCB-containing Transformer Locations: the location and resulting impacts of storage of formerly used PCB-containing transformers.	HA1, HA10, HA11	3a, 3b	NA

Table 1
Features of Potential Environmental Concern
Northern State Hospital Property
Port of Skagit
Sedro-Woolley, WA

	Location ID	Report figure showing this feature/boring location	Feature Index Number on Figures
Building Debris: several buildings have been buried in-place on site potentially resulting in impacts to soil due to asbestos or heavy metals, including the former Ward, Employee and Winfield Garage, and Horton buildings; and the former Superintendent's Residence. Building debris was reportedly buried in the former septic tanks and may have been buried in the former Mill Pond area and near the former incinerator.	GP39, GP40, GP41, GP43, GP44	2a, 2b, 2c, 2d, 3b	9, 11
Potential lead and other heavy metal contamination in soil from chips of and sandblasting grit from historical exterior building paint[d]	GP1, GP2, GP9, HA2, HA3, HA4, HA5, HA6, HA7, HA8, HA9	2a, 3a, 3b	NA
Former approximately 500-gallon diesel UST and associated soil and/or groundwater impacts adjacent to the Douglas Building	NA	2a	26
Chlorination Activities: the types of chemicals used and the duration of operation of a former chlorination plant are unknown	NA	2a	6, 7
The National Guard Armory:.a fueling island, an oil/water separator, and an AST are currently present on the facility	NA	2d	NA
Laundry Building: presence/absence of dry cleaning activities	NA	2a	1
Building materials and waste or debris in historical buildings	NA	2a	NA
Unknown USTs: there may be unknown USTs that were associated with former heating or generator fuel storage	NA	NA	NA
Waste Management: unknown or unmarked landfills may be present on the Property containing debris from historical operation of the hospital	NA	NA	NA

Notes:

AST = aboveground storage tank.

bgs = below ground surface.

COIs = chemicals of interest.

MTCA = Model Toxics Control Act.

PAH = polycyclic aromatic hydrocarbon.

PCE = tetrachloroethene.

UST = underground storage tank.

[a]These features of concern were identified during due diligence activities conducted as part of the focused site assessment work plan (MFA, 2014), focused site assessment (MFA, 2015a), and partial remedial investigation work plan (MFA, 2015b). Only those features of primary concern were evaluated during the field investigation, as indicated in the second column of the this table.

[b]A summary of sampling details and laboratory analytical testing is provided in Table 2.

[c]Sampling recommendations are discussed in Section 7.

[d]The Cultural Resource Assessment (Artifacts Consulting, 2008) indicates a white lead and zinc paint blend was used on wood surfaces of the buildings exteriors. Heavy metals may also be present in the paint and pigment that was used on the wood surfaces and/or stucco of the buildings exteriors.

[e]As discussed in the 1993 Lone Rock Resources UST Removal Report.

Table 2
Sample and Analysis Summary
Northern State Hospital Property
Port of Skagit
Sedro-Woolley, WA

Location ID	Total Depth (feet bgs)	Sample Matrix	Date of Sample Collection	Sample Collection Depth (feet bgs)	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx[b]	BTEX	VOCs	SVOCs	Total Metals	Dissolved Metals	PAHs	PCBs	Redox Chemicals[c]
GP1	16	Soil	8/19/2014	1.4	X	--	--	--	--	--	X	--	--	--	--
GP11	20	Groundwater	4/20/2015	18	--	--	X	--	X	X	--	--	X	--	--
GP12	20	Soil	4/20/2015	15	--	--	X	--	X	X	--	--	--	--	--
		Groundwater	4/20/2015	15	--	--	X	--	X	X	--	--	X	--	--
GP3	16	Soil	8/19/2014	7	X	--	--	--	--	--	X	--	X	X	--
GP4	16	Soil	8/19/2014	5.4	X	--	--	--	X	--	X	--	X	--	--
GP5	16	Soil	8/19/2014	14.5	X	--	--	--	X	--	X	--	X	--	--
GP6	16	Groundwater	8/19/2014	12.5	--	--	--	--	--	--	--	--	--	--	--
GP7	16	Soil	8/19/2014	12.5	X	--	X	X	--	--	--	--	--	--	--
GP13	15	Groundwater	4/20/2015	13	--	--	X	--	X	--	--	--	--	--	--
GP15	20	Groundwater	4/20/2015	18	--	X	--	--	--	--	X	X	--	--	--
GP28	15	Groundwater	4/22/2015	13	--	--	--	--	X	--	--	--	--	--	--
MW03	20	Groundwater	6/10/2015	15	--	--	--	--	--	--	X	X	--	--	--
GP17	25	Groundwater	4/20/2015	13.5	--	X	--	--	--	--	X	X	--	--	--
GP18	20	Groundwater	4/21/2015	13	--	X	--	--	--	--	X	X	--	--	--
GP20	15	Groundwater	4/21/2015	13	--	X	--	--	--	--	X	X	--	--	--
GP21	20	Groundwater	4/21/2015	19	--	--	X	--	X	X	X	X	X	--	--
GP25	20	Groundwater	4/21/2015	15	--	--	--	--	X	--	--	--	--	--	--
GP29	20	Groundwater	4/22/2015	15	--	--	X	--	X	X	X	X	X	--	--
MW01	25	Groundwater	6/10/2015	20	--	--	--	--	X[d]	--	X	X	X[e]	--	--
MW02	20	Groundwater	6/10/2015	18	--	--	--	--	X[d]	--	X	X	X[e]	--	--
MW04	20	Groundwater	6/10/2015	16.5	--	--	--	--	--	--	X	X	--	--	--
GP8	19	Groundwater	8/19/2014	12.5	X	--	--	--	X	--	--	--	--	--	--
GP23	15	Soil	4/21/2015	5 15	--	--	--	--	X	--	--	--	--	--	--
GP24	20	Groundwater	4/21/2015	18	--	--	--	--	X	--	--	--	--	--	X
GP26	15	Groundwater	4/21/2015	12.5	--	--	--	--	X	--	--	--	--	--	X
GP27	15	Groundwater	4/22/2015	10	--	--	--	--	X	--	--	--	--	--	X
GP31	0.5	Soil Vapor	4/22/2015	0.5	--	--	--	--	X[f]	--	--	--	--	--	--
GP22[g]	25	NA	4/21/2015	NA	--	--	--	--	--	--	--	--	--	--	--
GP30	25	Groundwater	4/22/2015	20	X	--	--	--	X	X	X	X	X	--	--

Table 2
Sample and Analysis Summary
Northern State Hospital Property
Port of Skagit
Sedro-Woolley, WA

Location ID	Total Depth (feet bgs)	Sample Matrix	Date of Sample Collection	Sample Collection Depth (feet bgs)	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx[b]	BTEX	VOCs	SVOCs	Total Metals	Dissolved Metals	PAHs	PCBs	Redox Chemicals[c]
GP2	12	Soil	8/19/2014	3	X	--	--	--	--	--	X	--	X	X	--
		Groundwater	8/19/2014	10	X	X	--	X	--	--	--	X	X	--	--
GP9	8	Soil	8/19/2014	0.5	X	X	--	X	--	--	X	--	X	X	--
GP10	8	Soil	8/19/2014	0.5	X	X	--	X	--	--	--	--	--	--	--
GP32	20	Soil	4/22/2015	2.1 9.8	--	X	--	--	--	--	--	--	X	--	--
		Groundwater	4/22/2015	15	--	X	--	--	--	--	--	--	--	--	--
GP33	15.5	Soil	4/22/2015	5.0 14.5	--	X	--	--	--	--	--	--	X	--	--
		Groundwater	4/22/2015	12	--	X	--	--	--	--	--	--	--	--	--
GP34[g]	13	Soil	4/22/2015	4.0 12.0	--	X	--	--	--	--	--	--	X	--	--
GP14	10	Soil	4/20/2015	0.5 4.0 9.0	--	--	--	--	--	--	X	--	--	--	--
GP16	10	Soil	4/20/2015	0.5 6.0 9.0	--	--	--	--	--	--	X	--	--	--	--
GP19	10	Soil	4/21/2015	0.5 3.0 7.0	--	--	--	--	--	--	X	--	--	--	--
GP35	10	Soil	4/23/2015	0.5 3.0 7.5	--	--	--	--	--	--	X	--	--	--	--
GP36	10	Soil	4/23/2015	0.5 3.5 8.0	--	--	--	--	--	--	X	--	--	--	--
GP37	10	Soil	4/23/2015	0.5 4.5 7.5	--	--	--	--	--	--	X	--	--	--	--
GP38	10	Soil	4/23/2015	0.5 4.0 8.5	--	--	--	--	--	--	X	--	--	--	--
GP42	10	Soil	4/23/2015	0.5 4.0 6.5	--	--	--	--	--	--	X	--	--	--	--
GP39	10	Soil	4/23/2015	3.5	X	--	--	--	X	--	X	--	X	--	--
GP40[h]	10	NA	4/23/2015	NA	--	--	--	--	--	--	--	--	--	--	--
GP41	10	Soil	4/23/2015	1.5	--	--	--	--	--	--	X	--	X	--	--
GP43[h]	10	NA	4/23/2015	NA	--	--	--	--	--	--	--	--	--	--	--

Table 2
Sample and Analysis Summary
Northern State Hospital Property
Port of Skagit
Sedro-Woolley, WA

Location ID	Total Depth (feet bgs)	Sample Matrix	Date of Sample Collection	Sample Collection Depth (feet bgs)	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx[b]	BTEX	VOCs	SVOCs	Total Metals	Dissolved Metals	PAHs	PCBs	Redox Chemicals[c]
GP44[h]	5	NA	4/23/2015	NA	--	--	--	--	--	--	--	--	--	--	--
HA1	0.5	Soil	4/23/2015	0.5	--	--	--	--	--	--	--	--	--	X	--
HA10	0.5	Soil	4/23/2015	0.5	--	--	--	--	--	--	--	--	--	X	--
HA11	0.5	Soil	4/23/2015	0.5	--	--	--	--	--	--	--	--	--	X	--
HA2	0.5	Soil	4/23/2015	0.5	--	--	--	--	--	--	X (lead only)	--	--	--	--
HA3	0.5	Soil	4/23/2015	0.5	--	--	--	--	--	--	X (lead only)	--	--	--	--
HA4	0.5	Soil	4/23/2015	0.5	--	--	--	--	--	--	X (lead only)	--	--	--	--
HA5	0.5	Soil	4/23/2015	0.5	--	--	--	--	--	--	X (lead only)	--	--	--	--
HA6	0.5	Soil	4/23/2015	0.5	--	--	--	--	--	--	X (lead only)	--	--	--	--
HA7	0.5	Soil	4/23/2015	0.5	--	--	--	--	--	--	X (lead only)	--	--	--	--
HA8	0.5	Soil	4/23/2015	0.5	--	--	--	--	--	--	X (lead only)	--	--	--	--
HA9	0.5	Soil	4/23/2015	0.5	--	--	--	--	--	--	X (lead only)	--	--	--	--
GP45	10	Soil	6/9/2015	0.2 - 0.7 1.8 - 2.2 8.7 - 9.3	--	--	--	--	--	--	X (only lead or arsenic)	--	--	--	--
GP46	10	Soil	6/9/2015	0.2 - 0.6 1.7 - 2.1 8.7 - 9.2	--	--	--	--	--	--	X (only lead or arsenic)	--	--	--	--
GP47	10	Soil	6/9/2015	0.3 - 0.7 1.8 - 2.3 8.6 - 9.2	--	--	--	--	--	--	X (only lead or arsenic)	--	--	--	--
GP48	20	Soil	6/9/2015	0.6 - 2.3 2.3 - 14.8 15.6 - 19.7	--	--	--	--	--	--	X (arsenic only)	--	--	--	--
HA12	1	Soil	6/10/2015	0.0 - 0.5 0.5 - 1.0	--	--	--	--	--	--	X (arsenic only)	--	--	--	--
HA13	1	Soil	6/10/2015	0.0 - 0.5 0.5 - 1.0	--	--	--	--	--	--	X (arsenic only)	--	--	--	--
HA14	1	Soil	6/10/2015	0.0 - 0.5 0.5 - 1.0	--	--	--	--	--	--	X (arsenic only)	--	--	--	--

Table 2
Sample and Analysis Summary
Northern State Hospital Property
Port of Skagit
Sedro-Woolley, WA

NOTES:

– = not analyzed.

X = analyzed.

AST = aboveground storage tank.

bgs = below ground surface.

BTEX = benzene, toluene, ethylbenzene, and xylenes by USEPA Method 8021B.

COIs = contaminants of interest.

Metals (total and dissolved) = arsenic, barium, cadmium, chromium, copper, lead, selenium, silver, and zinc, analysis by USEPA Method 200.8.

NA = not available; no sample collected.

NWTPH-Dx = Northwest Total Petroleum Hydrocarbon method for analysis of diesel-range organics.

NWTPH-Gx = Northwest Total Petroleum Hydrocarbon method for analysis of gasoline-range organics.

NWTPH-HCID = Northwest Total Petroleum Hydrocarbons-Hydrocarbon Identification method.

PAHs = polycyclic aromatic hydrocarbons, analysis by USEPA Method 8270.

PCBs = polychlorinated biphenyls, analysis by USEPA Method 8082A.

SVOCs = semivolatile organic compounds by USEPA Method 8270C.

USEPA = U.S. Environmental Protection Agency.

UST = underground storage tank.

VOCs = volatile organic compounds, analysis by USEPA Method 8260B.

[a]Environmental analyses associated with boring GP6 were limited to recording of field groundwater parameters; no sample was submitted to the analytical laboratory for analysis.

[b]Soil samples analyzed by NWTPH-Gx and USEPA 8260B were collected using the USEPA 5035 method.

[c]Redox Chemicals include one or more of the following: total organic carbon by USEPA Method 415.1; nitrate as nitrogen, chloride, and sulfate by USEPA Method 300.0; dissolved calcium, magnesium, manganese, and iron by USEPA Method 200.7; and ferrous iron using a Hach test kit in the field.

[d]Only analyzed for tetrachloroethene.

[e]Only analyzed for carcinogenic polycyclic aromatic hydrocarbons.

[f]Soil vapor was analyzed for tetrachloroethene, trichloroethene, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride using TO-15 low-level method.

[g]A groundwater sample was planned for this location, but was not collected due to lack of available water in boring.

[h]No soil samples were collected because no evidence of debris was observed in the borings; groundwater was not encountered in the borings.

Table 3
Water Level Measurements
Northern State Hospital Property
Port of Skagit
Sedro-Woolley, Washington

Location	MP Elevation (feet)	Datum	Measurement Date	Depth to Water (feet)	Groundwater Elevation (feet)
MW01	133.81	NAD27	06/10/15	14.34	119.47
MW02	131.03	NAD27	06/10/15	17.78	113.25
MW03	125.86	NAD27	06/10/15	10.40	115.46
MW04	117.39	NAD27	06/10/15	12.94	104.45

NOTES:
MP = measuring point from north side of top of well casing.
NAD27 = North American Datum of 1927.

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP1	GP2	GP3	GP4	GP5	GP7	GP9	GP10
					Sample Name:	GP1-S-1.4	GP2-S-3.0	GP3-S-7.0	GP4-S-5.4	GP5-S-14.5	GP7-S-0.8	GP9-S-0.5	GP10-S-0.5
					Collection Date:	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014
					Collection Depth (ft bgs):	1.4	3	7	5.4	14.5	0.8	0.5	0.5
			Ecological Indicator Concentrations[a]										
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife								
PCBs (mg/kg)													
Aroclor 1016	NV	--	NV	NV	NV	--	0.032 U	0.033 U	--	--	--	0.032 U	--
Aroclor 1221	NV	--	NV	NV	NV	--	0.032 U	0.033 U	--	--	--	0.032 U	--
Aroclor 1232	NV	--	NV	NV	NV	--	0.032 U	0.033 U	--	--	--	0.032 U	--
Aroclor 1242	NV	--	NV	NV	NV	--	0.032 U	0.033 U	--	--	--	0.032 U	--
Aroclor 1248	NV	--	NV	NV	NV	--	0.032 U	0.033 U	--	--	--	0.032 U	--
Aroclor 1254	NV	--	NV	NV	NV	--	0.032 U	0.033 U	--	--	--	0.032 U	--
Aroclor 1260	NV	--	NV	NV	NV	--	0.032 U	0.033 U	--	--	--	0.032 U	--
Total PCB Aroclors	1	0.5	40	NV	0.65	--	0.032 U	0.033 U	--	--	--	0.032 U	--
VOCs (mg/kg)													
1,1,1,2-Tetrachloroethane	NV	38.5	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
1,1,1-Trichloroethane	2	160000	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
1,1,2,2-Tetrachloroethane	NV	5	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
1,1,2-Trichloroethane	NV	17.5	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
1,1-Dichloroethane	NV	17.5	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
1,1-Dichloroethene	NV	4000	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
1,1-Dichloropropene	NV	NV	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
1,2,3-Trichlorobenzene	NV	NV	NV	20	NV	--	--	--	0.0087 U	0.0074 U	--	--	--
1,2,3-Trichloropropane	NV	NV	NV	NV	NV	--	--	--	0.0035 U	0.003 U	--	--	--
1,2,4-Trichlorobenzene	NV	34.5	NV	20	NV	--	--	--	0.0087 U	0.0074 U	--	--	--
1,2,4-Trimethylbenzene	NV	NV	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
1,2-Dibromo-3-chloropropane	NV	1.25	NV	NV	NV	--	--	--	0.0087 U	0.0074 U	--	--	--
1,2-Dibromoethane	0.005	0.5	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
1,2-Dichlorobenzene	NV	7200	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
1,2-Dichloroethane	NV	11	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
1,2-Dichloropropane	NV	27.8	NV	700	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
1,3,5-Trimethylbenzene	NV	800	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
1,3-Dichlorobenzene	NV	NV	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
1,3-Dichloropropane	NV	NV	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
1,4-Dichlorobenzene	NV	185	NV	20	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
2,2-Dichloropropane	NV	NV	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
2-Butanone	NV	48000	NV	NV	NV	--	--	--	0.0087 U	0.0074 U	--	--	--
2-Chloroethylvinyl ether	NV	NV	NV	NV	NV	--	--	--	0.0087 U	0.0074 U	--	--	--

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP1	GP2	GP3	GP4	GP5	GP7	GP9	GP10
					Sample Name:	GP1-S-1.4	GP2-S-3.0	GP3-S-7.0	GP4-S-5.4	GP5-S-14.5	GP7-S-0.8	GP9-S-0.5	GP10-S-0.5
					Collection Date:	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014
					Collection Depth (ft bgs):	1.4	3	7	5.4	14.5	0.8	0.5	0.5
			Ecological Indicator Concentrations[a]										
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife								
2-Chlorotoluene	NV	1600	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
2-Hexanone	NV	NV	NV	NV	NV	--	--	--	0.0087 U	0.0074 U	--	--	--
4-Chlorotoluene	NV	1600	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
4-Isopropyltoluene	NV	8000	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
4-Methyl-2-pentanone	NV	NV	NV	NV	NV	--	--	--	0.0087 U	0.0074 U	--	--	--
Acetone	NV	72000	NV	NV	NV	--	--	--	**0.16**	**0.055**	--	--	--
Acrolein	NV	40	NV	NV	NV	--	--	--	0.087 U	0.074 U	--	--	--
Acrylonitrile	NV	NV	NV	NV	NV	--	--	--	0.0087 U	0.0074 U	--	--	--
Benzene	0.03	18.2	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	0.014 U	0.016 U	0.021 U
Bromobenzene	NV	NV	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Bromodichloromethane	NV	16.1	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Bromoethane	NV	NV	NV	NV	NV	--	--	--	0.0035 U	0.003 U	--	--	--
Bromoform	NV	127	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Bromomethane	NV	112	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Carbon disulfide	NV	8000	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Carbon tetrachloride	NV	14.3	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Chlorobenzene	NV	1600	NV	40	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Chlorobromomethane	NV	NV	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Chloroethane	NV	NV	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Chloroform	NV	32.3	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Chloromethane	NV	NV	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
cis-1,2-Dichloroethene	NV	160	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
cis-1,3-Dichloropropene	NV	10	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Dibromochloromethane	NV	11.9	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Dibromomethane	NV	NV	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Dichlorodifluoromethane	NV	16000	NV	NV	NV	--	--	--	--	--	--	--	--
Ethylbenzene	6	8000	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	0.014 U	0.016 U	0.021 U
Freon 113	NV	2400000	NV	NV	NV	--	--	--	0.0035 U	0.003 U	--	--	--
Hexachlorobutadiene	NV	12.8	NV	NV	NV	--	--	--	0.0087 U	0.0074 U	--	--	--
Isopropylbenzene	NV	800	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
m,p-Xylene	9[b]	16000[b]	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	0.027 U	0.032 U	0.042 U
Methyl iodide	NV	NV	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Methyl tert-butyl ether	NV	556	NV	NV	NV	--	--	--	--	--	--	--	--

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP1	GP2	GP3	GP4	GP5	GP7	GP9	GP10
					Sample Name:	GP1-S-1.4	GP2-S-3.0	GP3-S-7.0	GP4-S-5.4	GP5-S-14.5	GP7-S-0.8	GP9-S-0.5	GP10-S-0.5
					Collection Date:	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014
					Collection Depth (ft bgs):	1.4	3	7	5.4	14.5	0.8	0.5	0.5
			Ecological Indicator Concentrations[a]										
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife								
Methylene chloride	0.02	500	NV	NV	NV	--	--	--	0.0099 U	0.0071 U	--	--	--
Naphthalene	5	1600	NV	NV	NV	--	--	--	0.0087 U	0.0074 U	--	--	--
n-Butylbenzene	NV	NV	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
n-Propylbenzene	NV	800	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
o-Xylene	9[b]	16000[b]	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	0.014 U	0.016 U	0.021 U
sec-Butylbenzene	NV	NV	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Styrene	NV	16000	300	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
tert-Butylbenzene	NV	NV	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Tetrachloroethene	0.05	476	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Toluene	7	6400	200	NV	NV	--	--	--	0.0017 U	0.0015 U	0.014 U	0.016 U	0.021 U
trans-1,2-dichloroethene	NV	1600	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
trans-1,3-Dichloropropene	NV	10	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
trans-1,4-Dichloro-2-butene	NV	NV	NV	NV	NV	--	--	--	0.0087 U	0.0074 U	--	--	--
Trichloroethene	0.03	12	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Trichlorofluoromethane	NV	24000	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Vinyl Acetate	NV	80000	NV	NV	NV	--	--	--	0.0087 U	0.0074 U	--	--	--
Vinyl chloride	NV	240	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	--	--	--
Xylenes, Total	9	16000	NV	NV	NV	--	--	--	0.0017 U	0.0015 U	0.027 U	0.032 U	0.042 U
SVOCs (mg/kg)													
1,2,4-Trichlorobenzene	NV	34.5	NV	20	NV	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	NV	7200	NV	NV	NV	--	--	--	--	--	--	--	--
1,2-Dinitrobenzene	NV	8	NV	NV	NV	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	NV	185	NV	NV	NV	--	--	--	--	--	--	--	--
1,4-Dinitrobenzene	NV	8	NV	NV	NV	--	--	--	--	--	--	--	--
2,3,4,6-Tetrachlorophenol	NV	2400	NV	NV	NV	--	--	--	--	--	--	--	--
2,3,5,6-Tetrachlorophenol	NV	NV	20	20	NV	--	--	--	--	--	--	--	--
2,3-Dichloroaniline	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	NV	8000	4	9	NV	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	NV	80	NV	10	NV	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	NV	240	NV	NV	NV	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	NV	1600	NV	NV	NV	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	NV	160	20	NV	NV	--	--	--	--	--	--	--	--

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP1	GP2	GP3	GP4	GP5	GP7	GP9	GP10
					Sample Name:	GP1-S-1.4	GP2-S-3.0	GP3-S-7.0	GP4-S-5.4	GP5-S-14.5	GP7-S-0.8	GP9-S-0.5	GP10-S-0.5
					Collection Date:	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014
					Collection Depth (ft bgs):	1.4	3	7	5.4	14.5	0.8	0.5	0.5
			Ecological Indicator Concentrations[a]										
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife								
2,4-Dinitrotoluene	NV	3.23	NV	NV	NV	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	0.667	NV	NV	NV	--	--	--	--	--	--	--	--
2-Chloronaphthalene	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
2-Chlorophenol	NV	400	NV	NV	NV	--	--	--	--	--	--	--	--
2-Methylphenol	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
2-Nitroaniline	NV	800	NV	NV	NV	--	--	--	--	--	--	--	--
2-Nitrophenol	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
3- & 4-Methylphenol	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	NV	2.22	NV	NV	NV	--	--	--	--	--	--	--	--
3-Nitroaniline	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
4-Bromophenylphenyl ether	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
4-Chloroaniline	NV	5	NV	NV	NV	--	--	--	--	--	--	--	--
4-Chlorophenylphenyl ether	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
4-Nitroaniline	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
4-Nitrophenol	NV	NV	NV	7	NV	--	--	--	--	--	--	--	--
Aniline	NV	175	NV	NV	NV	--	--	--	--	--	--	--	--
Benzidine	NV	0.00435	NV	NV	NV	--	--	--	--	--	--	--	--
Benzyl alcohol	NV	8000	NV	NV	NV	--	--	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
Bis(2-chloroethyl)ether	NV	0.909	NV	NV	NV	--	--	--	--	--	--	--	--
Bis(2-chloroisopropyl)ether	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	NV	71.4	NV	NV	NV	--	--	--	--	--	--	--	--
Butylbenzylphthalate	NV	526	NV	NV	NV	--	--	--	--	--	--	--	--
Carbazole	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
Di(2-ethylhexyl)adipate	NV	833	NV	NV	NV	--	--	--	--	--	--	--	--
Dibenzofuran	NV	80	NV	NV	NV	--	--	--	--	--	--	--	--
Diethyl phthalate	NV	64000	100	NV	NV	--	--	--	--	--	--	--	--
Dimethyl phthalate	NV	NV	NV	200	NV	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	NV	NV	200	NV	NV	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	800	NV	NV	NV	--	--	--	--	--	--	--	--
Hexachlorobenzene	NV	0.625	NV	NV	NV	--	--	--	--	--	--	--	--

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP1	GP2	GP3	GP4	GP5	GP7	GP9	GP10
					Sample Name:	GP1-S-1.4	GP2-S-3.0	GP3-S-7.0	GP4-S-5.4	GP5-S-14.5	GP7-S-0.8	GP9-S-0.5	GP10-S-0.5
					Collection Date:	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014
					Collection Depth (ft bgs):	1.4	3	7	5.4	14.5	0.8	0.5	0.5
			Ecological Indicator Concentrations[a]										
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife								
Hexachlorobutadiene	NV	12.8	NV	NV	NV	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	480	NV	NV	NV	--	--	--	--	--	--	--	--
Hexachloroethane	NV	25	NV	NV	NV	--	--	--	--	--	--	--	--
Hydrazine, 1,2-diphenyl	NV	0.33	NV	NV	NV	--	--	--	--	--	--	--	--
Isophorone	NV	1050	NV	NV	NV	--	--	--	--	--	--	--	--
m-Dinitrobenzene	NV	8	NV	NV	NV	--	--	--	--	--	--	--	--
Nitrobenzene	NV	160	NV	40	NV	--	--	--	--	--	--	--	--
N-Nitrosodimethylamine	NV	0.00667	NV	NV	NV	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	204	NV	20	NV	--	--	--	--	--	--	--	--
N-Nitrosodipropylamine	NV	0.143	NV	NV	NV	--	--	--	--	--	--	--	--
Pentachlorophenol	NV	2.5	NV	NV	NV	--	--	--	--	--	--	--	--
Phenol	NV	24000	70	30	NV	--	--	--	--	--	--	--	--
Pyridine	NV	80	NV	NV	NV	--	--	--	--	--	--	--	--
PAHs (mg/kg)													
1-Methylnaphthalene	NV	34.5	NV	NV	NV	--	**0.013**	**0.56**	**0.0076**	0.0046 U	--	0.06 UJ	--
2-Methylnaphthalene	NV	320	NV	NV	NV	--	**0.018**	**0.6**	**0.0091**	0.0046 U	--	0.06 UJ	--
Acenaphthene	NV	4800	20	NV	NV	--	0.0049 U	**0.086**	0.0048 U	0.0046 U	--	0.06 UJ	--
Acenaphthylene	NV	NV	NV	NV	NV	--	**0.0065**	**0.052**	0.0048 U	0.0046 U	--	**0.12** J	--
Anthracene	NV	24000	NV	NV	NV	--	**0.014**	**0.052**	**0.0058**	0.0046 U	--	**0.11** J	--
Benzo(a)anthracene	NV	1.37	NV	NV	NV	--	**0.041**	**0.051**	**0.0099**	0.0046 U	--	**0.26** J	--
Benzo(a)pyrene	0.1	0.137	NV	NV	12	--	**0.046**	**0.03**	**0.011**	0.0046 U	--	**0.39** J	--
Benzo(b)fluoranthene	NV	1.37	NV	NV	NV	--	--	--	--	--	--	--	--
Benzo(ghi)perylene	NV	NV	NV	NV	NV	--	**0.051**	**0.019**	**0.0091**	0.0046 U	--	**0.25** J	--
Benzo(j+k)fluoranthene	NV	13.7	NV	NV	NV	--	--	--	--	--	--	--	--
Chrysene	NV	137	NV	NV	NV	--	**0.07**	**0.057**	**0.014**	0.0046 U	--	**0.35** J	--
Dibenzo(a,h)anthracene	NV	0.137	NV	NV	NV	--	**0.007**	**0.0074**	0.0048 U	0.0046 U	--	**0.069** J	--
Dibenzofuran	NV	80	NV	NV	NV	--	**0.011**	**0.11**	**0.0088**	0.0046 U	--	0.06 UJ	--
Fluoranthene	NV	3200	NV	NV	NV	--	**0.097**	**0.068**	**0.028**	0.0046 U	--	**0.26** J	--
Fluorene	NV	3200	NV	30	NV	--	**0.0089**	**0.023**	0.0048 U	0.0046 U	--	0.06 UJ	--
Indeno(1,2,3-cd)pyrene	NV	1.37	NV	NV	NV	--	**0.028**	**0.012**	**0.0064**	0.0046 U	--	**0.2** J	--
Naphthalene	5	1600	NV	NV	NV	--	**0.06**	**0.38**	**0.019**	0.0046 U	--	0.06 UJ	--
Phenanthrene	NV	NV	NV	NV	NV	--	**0.079**	**0.21**	**0.021**	0.0046 U	--	**0.12** J	--
Pyrene	NV	2400	NV	NV	NV	--	**0.089**	**0.071**	**0.024**	0.0046 U	--	**0.29** J	--

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

						Location:	GP1	GP2	GP3	GP4	GP5	GP7	GP9	GP10
						Sample Name:	GP1-S-1.4	GP2-S-3.0	GP3-S-7.0	GP4-S-5.4	GP5-S-14.5	GP7-S-0.8	GP9-S-0.5	GP10-S-0.5
						Collection Date:	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014
						Collection Depth (ft bgs):	1.4	3	7	5.4	14.5	0.8	0.5	0.5
			Ecological Indicator Concentrations[a]											
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife									
Total Benzofluoranthenes	NV	1.37	NV	NV	NV		--	**0.087**	**0.062**	**0.017**	0.0046 U	--	**0.68** J	--
Total Naphthalenes	5	1600	NV	NV	NV		--	**0.091**	**1.54**	**0.0357**	0.0046 U	--	0.06 UJ	--
cPAH TEQ	0.1	--	NV	NV	NV		--	**0.063**	**0.044**	**0.015**	ND	--	**0.51** J	--
TPH Identification (Presence/Absence)														
Gasoline	NV	NV	NV	NV	NV		ND	20 U	20 U	ND	ND	--	ND	ND
Diesel	NV	NV	NV	NV	NV		ND	50 U	50 U	ND	ND	--	**DETECT**	**DETECT**
Lube Oil	NV	NV	NV	NV	NV		ND	100 U	100 U	ND	ND	--	**DETECT**	**DETECT**
TPH (mg/kg)														
Gasoline	100[c]	NV	NV	100	5000		--	--	--	--	--	5.4 U	--	--
Diesel	2000	NV	NV	200	6000		--	--	--	--	--	--	**220**	**220**
Lube Oil	2000	NV	NV	NV	NV		--	--	--	--	--	--	**2700**	**2300**
Heavy Oils (Diesel + Lube Oil)	2000	--	NV	200	6000		--	--	--	--	--	--	**2920**	**2520**

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP12	GP23	GP23	GP32	GP32	GP33	GP33	GP34
					Sample Name:	GP12-S-15.0	GP23-S-5.0	GP23-S-15.0	GP32-S-2.1	GP32-S-9.8	GP33-S-5.0	GP33-S-14.5	GP34-S-4.0
					Collection Date:	4/20/2015	4/21/2015	4/21/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015
					Collection Depth (ft bgs):	15	5	15	2.1	9.8	5	14.5	4
			Ecological Indicator Concentrations[a]										
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife								
PCBs (mg/kg)													
Aroclor 1016	NV	--	NV	NV	NV	--	--	--	--	--	--	--	--
Aroclor 1221	NV	--	NV	NV	NV	--	--	--	--	--	--	--	--
Aroclor 1232	NV	--	NV	NV	NV	--	--	--	--	--	--	--	--
Aroclor 1242	NV	--	NV	NV	NV	--	--	--	--	--	--	--	--
Aroclor 1248	NV	--	NV	NV	NV	--	--	--	--	--	--	--	--
Aroclor 1254	NV	--	NV	NV	NV	--	--	--	--	--	--	--	--
Aroclor 1260	NV	--	NV	NV	NV	--	--	--	--	--	--	--	--
Total PCB Aroclors	1	0.5	40	NV	0.65	--	--	--	--	--	--	--	--
VOCs (mg/kg)													
1,1,1,2-Tetrachloroethane	NV	38.5	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,1,1-Trichloroethane	2	160000	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,1,2,2-Tetrachloroethane	NV	5	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,1,2-Trichloroethane	NV	17.5	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,1-Dichloroethane	NV	17.5	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,1-Dichloroethene	NV	4000	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,1-Dichloropropene	NV	NV	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,2,3-Trichlorobenzene	NV	NV	NV	20	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,2,3-Trichloropropane	NV	NV	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,2,4-Trichlorobenzene	NV	34.5	NV	20	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,2,4-Trimethylbenzene	NV	NV	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,2-Dibromo-3-chloropropane	NV	1.25	NV	NV	NV	0.0052 U	0.0066 U	0.0054 U	--	--	--	--	--
1,2-Dibromoethane	0.005	0.5	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,2-Dichlorobenzene	NV	7200	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,2-Dichloroethane	NV	11	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,2-Dichloropropane	NV	27.8	NV	700	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,3,5-Trimethylbenzene	NV	800	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,3-Dichlorobenzene	NV	NV	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,3-Dichloropropane	NV	NV	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
1,4-Dichlorobenzene	NV	185	NV	20	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
2,2-Dichloropropane	NV	NV	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
2-Butanone	NV	48000	NV	NV	NV	0.0052 U	0.0066 U	0.0054 U	--	--	--	--	--
2-Chloroethylvinyl ether	NV	NV	NV	NV	NV	0.0052 U	0.0066 U	0.0054 U	--	--	--	--	--

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP12	GP23	GP23	GP32	GP32	GP33	GP33	GP34
					Sample Name:	GP12-S-15.0	GP23-S-5.0	GP23-S-15.0	GP32-S-2.1	GP32-S-9.8	GP33-S-5.0	GP33-S-14.5	GP34-S-4.0
					Collection Date:	4/20/2015	4/21/2015	4/21/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015
					Collection Depth (ft bgs):	15	5	15	2.1	9.8	5	14.5	4
			Ecological Indicator Concentrations[a]										
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife								
2-Chlorotoluene	NV	1600	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
2-Hexanone	NV	NV	NV	NV	NV	0.0052 U	0.0066 U	0.0054 U	--	--	--	--	--
4-Chlorotoluene	NV	1600	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
4-Isopropyltoluene	NV	8000	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
4-Methyl-2-pentanone	NV	NV	NV	NV	NV	0.0052 U	0.0066 U	0.0054 U	--	--	--	--	--
Acetone	NV	72000	NV	NV	NV	**0.01**	0.0066 U	**0.013**	--	--	--	--	--
Acrolein	NV	40	NV	NV	NV	--	--	--	--	--	--	--	--
Acrylonitrile	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
Benzene	0.03	18.2	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Bromobenzene	NV	NV	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Bromodichloromethane	NV	16.1	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Bromoethane	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
Bromoform	NV	127	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Bromomethane	NV	112	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Carbon disulfide	NV	8000	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Carbon tetrachloride	NV	14.3	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Chlorobenzene	NV	1600	NV	40	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Chlorobromomethane	NV	NV	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Chloroethane	NV	NV	NV	NV	NV	0.0052 U	0.0066 U	0.0054 U	--	--	--	--	--
Chloroform	NV	32.3	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Chloromethane	NV	NV	NV	NV	NV	0.0052 U	0.0066 U	0.0054 U	--	--	--	--	--
cis-1,2-Dichloroethene	NV	160	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
cis-1,3-Dichloropropene	NV	10	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Dibromochloromethane	NV	11.9	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Dibromomethane	NV	NV	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Dichlorodifluoromethane	NV	16000	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Ethylbenzene	6	8000	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Freon 113	NV	2400000	NV	NV	NV	--	--	--	--	--	--	--	--
Hexachlorobutadiene	NV	12.8	NV	NV	NV	0.0052 U	0.0066 U	0.0054 U	--	--	--	--	--
Isopropylbenzene	NV	800	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
m,p-Xylene	9[b]	16000[b]	NV	NV	NV	0.0021 U	0.0026 U	0.0022 U	--	--	--	--	--
Methyl iodide	NV	NV	NV	NV	NV	0.0052 U	0.0066 U	0.0054 U	--	--	--	--	--
Methyl tert-butyl ether	NV	556	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP12	GP23	GP23	GP32	GP32	GP33	GP33	GP34
					Sample Name:	GP12-S-15.0	GP23-S-5.0	GP23-S-15.0	GP32-S-2.1	GP32-S-9.8	GP33-S-5.0	GP33-S-14.5	GP34-S-4.0
					Collection Date:	4/20/2015	4/21/2015	4/21/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015
					Collection Depth (ft bgs):	15	5	15	2.1	9.8	5	14.5	4
			Ecological Indicator Concentrations[a]										
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife								
Methylene chloride	0.02	500	NV	NV	NV	0.0052 U	0.0066 U	0.0054 U	--	--	--	--	--
Naphthalene	5	1600	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
n-Butylbenzene	NV	NV	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
n-Propylbenzene	NV	800	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
o-Xylene	9[b]	16000[b]	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
sec-Butylbenzene	NV	NV	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Styrene	NV	16000	300	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
tert-Butylbenzene	NV	NV	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Tetrachloroethene	0.05	476	NV	NV	NV	0.001 U	**0.011**	0.0011 U	--	--	--	--	--
Toluene	7	6400	200	NV	NV	0.0052 U	0.0066 U	0.0054 U	--	--	--	--	--
trans-1,2-dichloroethene	NV	1600	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
trans-1,3-Dichloropropene	NV	10	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
trans-1,4-Dichloro-2-butene	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--
Trichloroethene	0.03	12	NV	NV	NV	0.001 U	**0.0035**	0.0011 U	--	--	--	--	--
Trichlorofluoromethane	NV	24000	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Vinyl Acetate	NV	80000	NV	NV	NV	0.0052 U	0.0066 U	0.0054 U	--	--	--	--	--
Vinyl chloride	NV	240	NV	NV	NV	0.001 U	0.0013 U	0.0011 U	--	--	--	--	--
Xylenes, Total	9	16000	NV	NV	NV	0.0021 U	0.0026 U	0.0022 U	--	--	--	--	--
SVOCs (mg/kg)													
1,2,4-Trichlorobenzene	NV	34.5	NV	20	NV	0.044 U	--	--	--	--	--	--	--
1,2-Dichlorobenzene	NV	7200	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
1,2-Dinitrobenzene	NV	8	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NV	NV	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
1,4-Dichlorobenzene	NV	185	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
1,4-Dinitrobenzene	NV	8	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
2,3,4,6-Tetrachlorophenol	NV	2400	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
2,3,5,6-Tetrachlorophenol	NV	NV	20	20	NV	0.044 U	--	--	--	--	--	--	--
2,3-Dichloroaniline	NV	NV	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	NV	8000	4	9	NV	0.044 U	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	NV	80	NV	10	NV	0.044 U	--	--	--	--	--	--	--
2,4-Dichlorophenol	NV	240	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
2,4-Dimethylphenol	NV	1600	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
2,4-Dinitrophenol	NV	160	20	NV	NV	0.22 U	--	--	--	--	--	--	--

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP12	GP23	GP23	GP32	GP32	GP33	GP33	GP34
					Sample Name:	GP12-S-15.0	GP23-S-5.0	GP23-S-15.0	GP32-S-2.1	GP32-S-9.8	GP33-S-5.0	GP33-S-14.5	GP34-S-4.0
					Collection Date:	4/20/2015	4/21/2015	4/21/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015
					Collection Depth (ft bgs):	15	5	15	2.1	9.8	5	14.5	4
			Ecological Indicator Concentrations[a]										
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife								
2,4-Dinitrotoluene	NV	3.23	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	0.667	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
2-Chloronaphthalene	NV	NV	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
2-Chlorophenol	NV	400	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
2-Methylphenol	NV	NV	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
2-Nitroaniline	NV	800	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
2-Nitrophenol	NV	NV	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
3- & 4-Methylphenol	NV	NV	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	NV	2.22	NV	NV	NV	0.22 U	--	--	--	--	--	--	--
3-Nitroaniline	NV	NV	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	NV	NV	NV	NV	NV	0.22 U	--	--	--	--	--	--	--
4-Bromophenylphenyl ether	NV	NV	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	NV	NV	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
4-Chloroaniline	NV	5	NV	NV	NV	0.22 U	--	--	--	--	--	--	--
4-Chlorophenylphenyl ether	NV	NV	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
4-Nitroaniline	NV	NV	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
4-Nitrophenol	NV	NV	NV	7	NV	0.044 U	--	--	--	--	--	--	--
Aniline	NV	175	NV	NV	NV	0.22 U	--	--	--	--	--	--	--
Benzidine	NV	0.00435	NV	NV	NV	0.44 U	--	--	--	--	--	--	--
Benzyl alcohol	NV	8000	NV	NV	NV	0.22 U	--	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	NV	NV	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
Bis(2-chloroethyl)ether	NV	0.909	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
Bis(2-chloroisopropyl)ether	NV	NV	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	NV	71.4	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
Butylbenzylphthalate	NV	526	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
Carbazole	NV	NV	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
Di(2-ethylhexyl)adipate	NV	833	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
Dibenzofuran	NV	80	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
Diethyl phthalate	NV	64000	100	NV	NV	0.22 U	--	--	--	--	--	--	--
Dimethyl phthalate	NV	NV	NV	200	NV	0.044 U	--	--	--	--	--	--	--
Di-n-butyl phthalate	NV	NV	200	NV	NV	0.044 U	--	--	--	--	--	--	--
Di-n-octyl phthalate	NV	800	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
Hexachlorobenzene	NV	0.625	NV	NV	NV	0.044 U	--	--	--	--	--	--	--

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP12	GP23	GP23	GP32	GP32	GP33	GP33	GP34
					Sample Name:	GP12-S-15.0	GP23-S-5.0	GP23-S-15.0	GP32-S-2.1	GP32-S-9.8	GP33-S-5.0	GP33-S-14.5	GP34-S-4.0
					Collection Date:	4/20/2015	4/21/2015	4/21/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015
					Collection Depth (ft bgs):	15	5	15	2.1	9.8	5	14.5	4
			Ecological Indicator Concentrations[a]										
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife								
Hexachlorobutadiene	NV	12.8	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	480	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
Hexachloroethane	NV	25	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
Hydrazine, 1,2-diphenyl	NV	0.33	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
Isophorone	NV	1050	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
m-Dinitrobenzene	NV	8	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
Nitrobenzene	NV	160	NV	40	NV	0.044 U	--	--	--	--	--	--	--
N-Nitrosodimethylamine	NV	0.00667	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	204	NV	20	NV	0.044 U	--	--	--	--	--	--	--
N-Nitrosodipropylamine	NV	0.143	NV	NV	NV	0.044 U	--	--	--	--	--	--	--
Pentachlorophenol	NV	2.5	NV	NV	NV	0.22 U	--	--	--	--	--	--	--
Phenol	NV	24000	70	30	NV	0.044 U	--	--	--	--	--	--	--
Pyridine	NV	80	NV	NV	NV	0.44 U	--	--	--	--	--	--	--
PAHs (mg/kg)													
1-Methylnaphthalene	NV	34.5	NV	NV	NV	0.0088 U	--	--	0.0087 U	0.012 U	0.0092 U	0.0098 U	**0.038**
2-Methylnaphthalene	NV	320	NV	NV	NV	0.0088 U	--	--	0.0087 U	0.012 U	0.0092 U	0.0098 U	**0.038**
Acenaphthene	NV	4800	20	NV	NV	0.0088 U	--	--	0.0087 U	0.012 U	0.0092 U	0.0098 U	0.0074 U
Acenaphthylene	NV	NV	NV	NV	NV	0.0088 U	--	--	0.0087 U	0.012 U	0.0092 U	0.0098 U	0.0074 U
Anthracene	NV	24000	NV	NV	NV	0.0088 U	--	--	0.0087 U	0.012 U	0.0092 U	0.0098 U	**0.008**
Benzo(a)anthracene	NV	1.37	NV	NV	NV	0.0088 U	--	--	0.0087 U	0.012 U	0.0092 U	0.0098 U	**0.023**
Benzo(a)pyrene	0.1	0.137	NV	NV	12	0.0088 U	--	--	0.0087 U	0.012 UJ	0.0092 U	0.0098 U	**0.029**
Benzo(b)fluoranthene	NV	1.37	NV	NV	NV	0.0088 U	--	--	**0.015**	0.012 UJ	0.0092 U	0.0098 U	**0.034**
Benzo(ghi)perylene	NV	NV	NV	NV	NV	0.0088 U	--	--	0.0087 U	0.012 UJ	0.0092 U	0.0098 U	**0.027**
Benzo(j+k)fluoranthene	NV	13.7	NV	NV	NV	0.0088 U	--	--	0.0087 U	0.012 UJ	0.0092 U	0.0098 U	**0.012**
Chrysene	NV	137	NV	NV	NV	0.0088 U	--	--	0.0087 U	0.012 U	0.0092 U	0.0098 U	**0.034**
Dibenzo(a,h)anthracene	NV	0.137	NV	NV	NV	0.0088 U	--	--	0.0087 U	0.012 U	0.0092 U	0.0098 U	0.0074 U
Dibenzofuran	NV	80	NV	NV	NV	--	--	--	--	--	--	--	--
Fluoranthene	NV	3200	NV	NV	NV	0.0088 U	--	--	0.0087 U	0.012 U	0.0092 U	0.0098 U	0.022
Fluorene	NV	3200	NV	30	NV	0.0088 U	--	--	0.0087 U	0.012 U	0.0092 U	0.0098 U	0.0074 U
Indeno(1,2,3-cd)pyrene	NV	1.37	NV	NV	NV	0.0088 U	--	--	0.0087 U	0.012 UJ	0.0092 U	0.0098 U	**0.016**
Naphthalene	5	1600	NV	NV	NV	0.0088 U	--	--	0.0087 U	0.012 U	0.0092 U	0.0098 U	**0.018**
Phenanthrene	NV	NV	NV	NV	NV	0.0088 U	--	--	0.0087 U	0.012 U	0.0092 U	0.0098 U	**0.041**
Pyrene	NV	2400	NV	NV	NV	0.0088 U	--	--	**0.0088**	0.012 U	0.0092 U	0.0098 U	**0.026**

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

						Location:	GP12	GP23	GP23	GP32	GP32	GP33	GP33	GP34
						Sample Name:	GP12-S-15.0	GP23-S-5.0	GP23-S-15.0	GP32-S-2.1	GP32-S-9.8	GP33-S-5.0	GP33-S-14.5	GP34-S-4.0
						Collection Date:	4/20/2015	4/21/2015	4/21/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015
						Collection Depth (ft bgs):	15	5	15	2.1	9.8	5	14.5	4
			Ecological Indicator Concentrations[a]											
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife									
Total Benzofluoranthenes	NV	1.37	NV	NV	NV	--	--	--	--	--	--	--	--	--
Total Naphthalenes	5	1600	NV	NV	NV	0.0088 U	--	--	0.0087 U	0.012 U	0.0092 U	0.0098 U	**0.094**
cPAH TEQ	0.1	--	NV	NV	NV	ND	--	--	**0.0015**	ND	ND	ND	**0.038**
TPH Identification (Presence/Absence)														
Gasoline	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--	--
Diesel	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--	--
Lube Oil	NV	NV	NV	NV	NV	--	--	--	--	--	--	--	--	--
TPH (mg/kg)														
Gasoline	100[c]	NV	NV	100	5000	8 U	--	--	--	--	--	--	--	--
Diesel	2000	NV	NV	200	6000	--	--	--	--	33 U	45 U	34 U	37 U	55 U
Lube Oil	2000	NV	NV	NV	NV	--	--	--	--	66 U	**140**	69 U	73 U	**450**
Heavy Oils (Diesel + Lube Oil)	2000	--	NV	200	6000	--	--	--	--	66 U	**162.5**	69 U	73 U	**477.5**

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP34	GP39	HA1	HA10	HA11
					Sample Name:	GP34-S-12.0	GP39-S-3.5	HA1-S-0.5	HA10-S-0.5	HA11-S-0.5
					Collection Date:	4/22/2015	4/23/2015	4/23/2015	4/23/2015	4/23/2015
					Collection Depth (ft bgs):	12	3.5	0.5	0.5	0.5
			Ecological Indicator Concentrations[a]							
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife					
PCBs (mg/kg)										
Aroclor 1016	NV	--	NV	NV	NV	--	--	0.074 U	0.073 U	0.068 U
Aroclor 1221	NV	--	NV	NV	NV	--	--	0.074 U	0.073 U	0.068 U
Aroclor 1232	NV	--	NV	NV	NV	--	--	0.074 U	0.073 U	0.068 U
Aroclor 1242	NV	--	NV	NV	NV	--	--	0.074 U	0.073 U	0.068 U
Aroclor 1248	NV	--	NV	NV	NV	--	--	0.074 U	0.073 U	0.068 U
Aroclor 1254	NV	--	NV	NV	NV	--	--	0.074 U	0.073 U	0.068 U
Aroclor 1260	NV	--	NV	NV	NV	--	--	0.074 U	0.073 U	0.068 U
Total PCB Aroclors	1	0.5	40	NV	0.65	--	--	0.074 U	0.073 U	0.068 U
VOCs (mg/kg)										
1,1,1,2-Tetrachloroethane	NV	38.5	NV	NV	NV	--	0.0016 U	--	--	--
1,1,1-Trichloroethane	2	160000	NV	NV	NV	--	0.0016 U	--	--	--
1,1,2,2-Tetrachloroethane	NV	5	NV	NV	NV	--	0.0016 U	--	--	--
1,1,2-Trichloroethane	NV	17.5	NV	NV	NV	--	0.0016 U	--	--	--
1,1-Dichloroethane	NV	17.5	NV	NV	NV	--	0.0016 U	--	--	--
1,1-Dichloroethene	NV	4000	NV	NV	NV	--	0.0016 U	--	--	--
1,1-Dichloropropene	NV	NV	NV	NV	NV	--	0.0016 U	--	--	--
1,2,3-Trichlorobenzene	NV	NV	NV	20	NV	--	0.0016 U	--	--	--
1,2,3-Trichloropropane	NV	NV	NV	NV	NV	--	0.0016 U	--	--	--
1,2,4-Trichlorobenzene	NV	34.5	NV	20	NV	--	0.0016 U	--	--	--
1,2,4-Trimethylbenzene	NV	NV	NV	NV	NV	--	0.0016 U	--	--	--
1,2-Dibromo-3-chloropropane	NV	1.25	NV	NV	NV	--	0.0082 U	--	--	--
1,2-Dibromoethane	0.005	0.5	NV	NV	NV	--	0.0016 U	--	--	--
1,2-Dichlorobenzene	NV	7200	NV	NV	NV	--	0.0016 U	--	--	--
1,2-Dichloroethane	NV	11	NV	NV	NV	--	0.0016 U	--	--	--
1,2-Dichloropropane	NV	27.8	NV	700	NV	--	0.0016 U	--	--	--
1,3,5-Trimethylbenzene	NV	800	NV	NV	NV	--	0.0016 U	--	--	--
1,3-Dichlorobenzene	NV	NV	NV	NV	NV	--	0.0016 U	--	--	--
1,3-Dichloropropane	NV	NV	NV	NV	NV	--	0.0016 U	--	--	--
1,4-Dichlorobenzene	NV	185	NV	20	NV	--	0.0016 U	--	--	--
2,2-Dichloropropane	NV	NV	NV	NV	NV	--	0.0016 U	--	--	--
2-Butanone	NV	48000	NV	NV	NV	--	0.0082 U	--	--	--
2-Chloroethylvinyl ether	NV	NV	NV	NV	NV	--	0.0082 U	--	--	--

					Location:	GP34	GP39	HA1	HA10	HA11
					Sample Name:	GP34-S-12.0	GP39-S-3.5	HA1-S-0.5	HA10-S-0.5	HA11-S-0.5
					Collection Date:	4/22/2015	4/23/2015	4/23/2015	4/23/2015	4/23/2015
					Collection Depth (ft bgs):	12	3.5	0.5	0.5	0.5
			Ecological Indicator Concentrations[a]							
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife					
2-Chlorotoluene	NV	1600	NV	NV	NV	--	0.0016 U	--	--	--
2-Hexanone	NV	NV	NV	NV	NV	--	0.0082 U	--	--	--
4-Chlorotoluene	NV	1600	NV	NV	NV	--	0.0016 U	--	--	--
4-Isopropyltoluene	NV	8000	NV	NV	NV	--	0.0016 U	--	--	--
4-Methyl-2-pentanone	NV	NV	NV	NV	NV	--	0.0082 U	--	--	--
Acetone	NV	72000	NV	NV	NV	--	0.0082 U	--	--	--
Acrolein	NV	40	NV	NV	NV	--	--	--	--	--
Acrylonitrile	NV	NV	NV	NV	NV	--	--	--	--	--
Benzene	0.03	18.2	NV	NV	NV	--	0.0016 U	--	--	--
Bromobenzene	NV	NV	NV	NV	NV	--	0.0016 U	--	--	--
Bromodichloromethane	NV	16.1	NV	NV	NV	--	0.0016 U	--	--	--
Bromoethane	NV	NV	NV	NV	NV	--	--	--	--	--
Bromoform	NV	127	NV	NV	NV	--	0.0016 U	--	--	--
Bromomethane	NV	112	NV	NV	NV	--	0.0016 U	--	--	--
Carbon disulfide	NV	8000	NV	NV	NV	--	0.0016 U	--	--	--
Carbon tetrachloride	NV	14.3	NV	NV	NV	--	0.0016 U	--	--	--
Chlorobenzene	NV	1600	NV	40	NV	--	0.0016 U	--	--	--
Chlorobromomethane	NV	NV	NV	NV	NV	--	0.0016 U	--	--	--
Chloroethane	NV	NV	NV	NV	NV	--	0.0082 U	--	--	--
Chloroform	NV	32.3	NV	NV	NV	--	0.0016 U	--	--	--
Chloromethane	NV	NV	NV	NV	NV	--	0.0082 U	--	--	--
cis-1,2-Dichloroethene	NV	160	NV	NV	NV	--	0.0016 U	--	--	--
cis-1,3-Dichloropropene	NV	10	NV	NV	NV	--	0.0016 U	--	--	--
Dibromochloromethane	NV	11.9	NV	NV	NV	--	0.0016 U	--	--	--
Dibromomethane	NV	NV	NV	NV	NV	--	0.0016 U	--	--	--
Dichlorodifluoromethane	NV	16000	NV	NV	NV	--	0.0016 U	--	--	--
Ethylbenzene	6	8000	NV	NV	NV	--	0.0016 U	--	--	--
Freon 113	NV	2400000	NV	NV	NV	--	--	--	--	--
Hexachlorobutadiene	NV	12.8	NV	NV	NV	--	0.0082 U	--	--	--
Isopropylbenzene	NV	800	NV	NV	NV	--	0.0016 U	--	--	--
m,p-Xylene	9[b]	16000[b]	NV	NV	NV	--	0.0033 U	--	--	--
Methyl iodide	NV	NV	NV	NV	NV	--	0.0082 U	--	--	--
Methyl tert-butyl ether	NV	556	NV	NV	NV	--	0.0016 U	--	--	--

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP34	GP39	HA1	HA10	HA11
					Sample Name:	GP34-S-12.0	GP39-S-3.5	HA1-S-0.5	HA10-S-0.5	HA11-S-0.5
					Collection Date:	4/22/2015	4/23/2015	4/23/2015	4/23/2015	4/23/2015
					Collection Depth (ft bgs):	12	3.5	0.5	0.5	0.5
			Ecological Indicator Concentrations[a]							
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife					
Methylene chloride	0.02	500	NV	NV	NV	--	0.0082 U	--	--	--
Naphthalene	5	1600	NV	NV	NV	--	0.0016 U	--	--	--
n-Butylbenzene	NV	NV	NV	NV	NV	--	0.0016 U	--	--	--
n-Propylbenzene	NV	800	NV	NV	NV	--	0.0016 U	--	--	--
o-Xylene	9[b]	16000[b]	NV	NV	NV	--	0.0016 U	--	--	--
sec-Butylbenzene	NV	NV	NV	NV	NV	--	0.0016 U	--	--	--
Styrene	NV	16000	300	NV	NV	--	0.0016 U	--	--	--
tert-Butylbenzene	NV	NV	NV	NV	NV	--	0.0016 U	--	--	--
Tetrachloroethene	0.05	476	NV	NV	NV	--	0.0016 U	--	--	--
Toluene	7	6400	200	NV	NV	--	0.0016 U	--	--	--
trans-1,2-dichloroethene	NV	1600	NV	NV	NV	--	0.0082 U	--	--	--
trans-1,3-Dichloropropene	NV	10	NV	NV	NV	--	0.0016 U	--	--	--
trans-1,4-Dichloro-2-butene	NV	NV	NV	NV	NV	--	0.0016 U	--	--	--
Trichloroethene	0.03	12	NV	NV	NV	--	--	--	--	--
Trichlorofluoromethane	NV	24000	NV	NV	NV	--	0.0016 U	--	--	--
Vinyl Acetate	NV	80000	NV	NV	NV	--	0.0016 U	--	--	--
Vinyl chloride	NV	240	NV	NV	NV	--	0.0082 U	--	--	--
Xylenes, Total	9	16000	NV	NV	NV	--	0.0016 U	--	--	--
SVOCs (mg/kg)							0.0033 U	--	--	--
1,2,4-Trichlorobenzene	NV	34.5	NV	20	NV	--	--	--	--	--
1,2-Dichlorobenzene	NV	7200	NV	NV	NV	--	--	--	--	--
1,2-Dinitrobenzene	NV	8	NV	NV	NV	--	--	--	--	--
1,3-Dichlorobenzene	NV	NV	NV	NV	NV	--	--	--	--	--
1,4-Dichlorobenzene	NV	185	NV	NV	NV	--	--	--	--	--
1,4-Dinitrobenzene	NV	8	NV	NV	NV	--	--	--	--	--
2,3,4,6-Tetrachlorophenol	NV	2400	NV	NV	NV	--	--	--	--	--
2,3,5,6-Tetrachlorophenol	NV	NV	20	20	NV	--	--	--	--	--
2,3-Dichloroaniline	NV	NV	NV	NV	NV	--	--	--	--	--
2,4,5-Trichlorophenol	NV	8000	4	9	NV	--	--	--	--	--
2,4,6-Trichlorophenol	NV	80	NV	10	NV	--	--	--	--	--
2,4-Dichlorophenol	NV	240	NV	NV	NV	--	--	--	--	--
2,4-Dimethylphenol	NV	1600	NV	NV	NV	--	--	--	--	--
2,4-Dinitrophenol	NV	160	20	NV	NV	--	--	--	--	--

					Location:	GP34	GP39	HA1	HA10	HA11
					Sample Name:	GP34-S-12.0	GP39-S-3.5	HA1-S-0.5	HA10-S-0.5	HA11-S-0.5
					Collection Date:	4/22/2015	4/23/2015	4/23/2015	4/23/2015	4/23/2015
					Collection Depth (ft bgs):	12	3.5	0.5	0.5	0.5
			Ecological Indicator Concentrations[a]							
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife					
2,4-Dinitrotoluene	NV	3.23	NV	NV	NV	--	--	--	--	--
2,6-Dinitrotoluene	NV	0.667	NV	NV	NV	--	--	--	--	--
2-Chloronaphthalene	NV	NV	NV	NV	NV	--	--	--	--	--
2-Chlorophenol	NV	400	NV	NV	NV	--	--	--	--	--
2-Methylphenol	NV	NV	NV	NV	NV	--	--	--	--	--
2-Nitroaniline	NV	800	NV	NV	NV	--	--	--	--	--
2-Nitrophenol	NV	NV	NV	NV	NV	--	--	--	--	--
3- & 4-Methylphenol	NV	NV	NV	NV	NV	--	--	--	--	--
3,3-Dichlorobenzidine	NV	2.22	NV	NV	NV	--	--	--	--	--
3-Nitroaniline	NV	NV	NV	NV	NV	--	--	--	--	--
4,6-Dinitro-2-methylphenol	NV	NV	NV	NV	NV	--	--	--	--	--
4-Bromophenylphenyl ether	NV	NV	NV	NV	NV	--	--	--	--	--
4-Chloro-3-methylphenol	NV	NV	NV	NV	NV	--	--	--	--	--
4-Chloroaniline	NV	5	NV	NV	NV	--	--	--	--	--
4-Chlorophenylphenyl ether	NV	NV	NV	NV	NV	--	--	--	--	--
4-Nitroaniline	NV	NV	NV	NV	NV	--	--	--	--	--
4-Nitrophenol	NV	NV	NV	7	NV	--	--	--	--	--
Aniline	NV	175	NV	NV	NV	--	--	--	--	--
Benzidine	NV	0.00435	NV	NV	NV	--	--	--	--	--
Benzyl alcohol	NV	8000	NV	NV	NV	--	--	--	--	--
Bis(2-chloroethoxy)methane	NV	NV	NV	NV	NV	--	--	--	--	--
Bis(2-chloroethyl)ether	NV	0.909	NV	NV	NV	--	--	--	--	--
Bis(2-chloroisopropyl)ether	NV	NV	NV	NV	NV	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	NV	71.4	NV	NV	NV	--	--	--	--	--
Butylbenzylphthalate	NV	526	NV	NV	NV	--	--	--	--	--
Carbazole	NV	NV	NV	NV	NV	--	--	--	--	--
Di(2-ethylhexyl)adipate	NV	833	NV	NV	NV	--	--	--	--	--
Dibenzofuran	NV	80	NV	NV	NV	--	--	--	--	--
Diethyl phthalate	NV	64000	100	NV	NV	--	--	--	--	--
Dimethyl phthalate	NV	NV	NV	200	NV	--	--	--	--	--
Di-n-butyl phthalate	NV	NV	200	NV	NV	--	--	--	--	--
Di-n-octyl phthalate	NV	800	NV	NV	NV	--	--	--	--	--
Hexachlorobenzene	NV	0.625	NV	NV	NV	--	--	--	--	--

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP34	GP39	HA1	HA10	HA11
					Sample Name:	GP34-S-12.0	GP39-S-3.5	HA1-S-0.5	HA10-S-0.5	HA11-S-0.5
					Collection Date:	4/22/2015	4/23/2015	4/23/2015	4/23/2015	4/23/2015
					Collection Depth (ft bgs):	12	3.5	0.5	0.5	0.5
			Ecological Indicator Concentrations[a]							
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife					
Hexachlorobutadiene	NV	12.8	NV	NV	NV	--	--	--	--	--
Hexachlorocyclopentadiene	NV	480	NV	NV	NV	--	--	--	--	--
Hexachloroethane	NV	25	NV	NV	NV	--	--	--	--	--
Hydrazine, 1,2-diphenyl	NV	0.33	NV	NV	NV	--	--	--	--	--
Isophorone	NV	1050	NV	NV	NV	--	--	--	--	--
m-Dinitrobenzene	NV	8	NV	NV	NV	--	--	--	--	--
Nitrobenzene	NV	160	NV	40	NV	--	--	--	--	--
N-Nitrosodimethylamine	NV	0.00667	NV	NV	NV	--	--	--	--	--
N-Nitrosodiphenylamine	NV	204	NV	20	NV	--	--	--	--	--
N-Nitrosodipropylamine	NV	0.143	NV	NV	NV	--	--	--	--	--
Pentachlorophenol	NV	2.5	NV	NV	NV	--	--	--	--	--
Phenol	NV	24000	70	30	NV	--	--	--	--	--
Pyridine	NV	80	NV	NV	NV	--	--	--	--	--
PAHs (mg/kg)										
1-Methylnaphthalene	NV	34.5	NV	NV	NV	0.011 U	--	--	--	--
2-Methylnaphthalene	NV	320	NV	NV	NV	0.011 U	--	--	--	--
Acenaphthene	NV	4800	20	NV	NV	0.011 U	--	--	--	--
Acenaphthylene	NV	NV	NV	NV	NV	0.011 U	--	--	--	--
Anthracene	NV	24000	NV	NV	NV	0.011 U	--	--	--	--
Benzo(a)anthracene	NV	1.37	NV	NV	NV	0.011 U	--	--	--	--
Benzo(a)pyrene	0.1	0.137	NV	NV	12	0.011 U	--	--	--	--
Benzo(b)fluoranthene	NV	1.37	NV	NV	NV	0.011 U	--	--	--	--
Benzo(ghi)perylene	NV	NV	NV	NV	NV	0.011 U	--	--	--	--
Benzo(j+k)fluoranthene	NV	13.7	NV	NV	NV	0.011 U	--	--	--	--
Chrysene	NV	137	NV	NV	NV	0.011 U	--	--	--	--
Dibenzo(a,h)anthracene	NV	0.137	NV	NV	NV	0.011 U	--	--	--	--
Dibenzofuran	NV	80	NV	NV	NV	--	--	--	--	--
Fluoranthene	NV	3200	NV	NV	NV	0.011 U	--	--	--	--
Fluorene	NV	3200	NV	30	NV	0.011 U	--	--	--	--
Indeno(1,2,3-cd)pyrene	NV	1.37	NV	NV	NV	0.011 U	--	--	--	--
Naphthalene	5	1600	NV	NV	NV	0.011 U	--	--	--	--
Phenanthrene	NV	NV	NV	NV	NV	0.011 U	--	--	--	--
Pyrene	NV	2400	NV	NV	NV	0.011 U	--	--	--	--

Table 4A
Soil Analytical Results - Other
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP34	GP39	HA1	HA10	HA11
					Sample Name:	GP34-S-12.0	GP39-S-3.5	HA1-S-0.5	HA10-S-0.5	HA11-S-0.5
					Collection Date:	4/22/2015	4/23/2015	4/23/2015	4/23/2015	4/23/2015
					Collection Depth (ft bgs):	12	3.5	0.5	0.5	0.5
			Ecological Indicator Concentrations[a]							
	MTCA A, Unrestricted Land Use	MTCA B	Plants	Soil Biota	Wildlife					
Total Benzofluoranthenes	NV	1.37	NV	NV	NV	--	--	--	--	--
Total Naphthalenes	5	1600	NV	NV	NV	0.011 U	--	--	--	--
cPAH TEQ	0.1	--	NV	NV	NV	ND	--	--	--	--
TPH Identification (Presence/Absence)										
Gasoline	NV	NV	NV	NV	NV	--	--	--	--	--
Diesel	NV	NV	NV	NV	NV	--	--	--	--	--
Lube Oil	NV	NV	NV	NV	NV	--	--	--	--	--
TPH (mg/kg)										
Gasoline	100[c]	NV	NV	100	5000	--	--	--	--	--
Diesel	2000	NV	NV	200	6000	40 U	--	--	--	--
Lube Oil	2000	NV	NV	NV	NV	**130**	--	--	--	--
Heavy Oils (Diesel + Lube Oil)	2000	--	NV	200	6000	**150**	--	--	--	--

NOTES:

Detected results are indicated by bold font.

Results that exceed MTCA A cleanup level, or a MTCA B cleanup level if no MTCA A value is available, are shaded. Non-detect results are not evaluated against cleanup criteria.

Results that exceed an ecological indicator concentration are shaded. Non-detect results are not evaluated against cleanup criteria.

Results that exceed both a MTCA A cleanup level and an ecological indicator concentration are shaded. Non-detect results are not evaluated against cleanup criteria.

MTCA B cleanup levels are provided. Lower of the Method B Cancer and Non Cancer is shown. Non-detect data not compared to a cleanup level.

Calculated sums use the highest non-detect value when all consituents are non-detect. When detect and non-detect values are summed, zero is used for non-detect values.

-- = not analyzed.

cPAH TEQ = carcinogenic PAH toxic equivalency quotient.

ft bgs = feet below ground surface.

J = the result is an estimated value.

mg/kg = milligrams per kilogram.

MTCA = Model Toxics Control Act.

NV = no value.

PCB = polychlorinated biphenyl.

PAH = polycyclic aromatic hydrocarbon.

SVOC = semivolatile organic compound.

Total PCB Aroclors = sum of all PCB aroclors.

Total Naphthalenes = sum of 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene.

TPH = total petroleum hydrocarbon.

U = the result is non-detect.

UJ = the result is non-detect and an estimated value.

VOC = volatile organic compound.

[a]Ecological indicator concentrations were obtained from Model Toxics Control Act Table 749-3.

[b]m-xylene and o-xylene MTCA A cleanup level is for xylenes.

[c]MTCA cleanup level is for gasoline-range organics with no detectable benzene present.

Table 4B
Soil Analytical Results - Metals
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

								Location:	GP1	GP2	GP3	GP4	GP5	GP9	GP14
								Sample Name:	GP1-S-1.4	GP2-S-3.0	GP3-S-7.0	GP4-S-5.4	GP5-S-14.5	GP9-S-0.5	GP14-S-0.5
								Collection Date:	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	4/20/2015
								Collection Depths (ft bgs):	1.4	3	7	5.4	14.5	0.5	0.5
	MTCA A, Unrestricted Land Use	MTCA B	Ecological Indicator Concentrations[a]			Natural Background Metals[b]	90/90 UTL								
			Plants	Soil Biota	Wildlife										
Metals (mg/kg)															
Arsenic[c]	**20**	0.0667	**10**	**60**	**7**	7	17.2		**7.4**	**13**	**4**	**6.2**	**6.1**	**9.1**	**14**
Barium	NV	16000	500	NV	**102**	NV	206		**162**	**180**	**388**	**141**	**58.4**	**178**	**100**
Cadmium	2	80	4	20	14	1	--		**0.1**	**0.2**	0.1 U	**0.2**	**0.2**	**0.2**	0.67 U
Chromium[d]	2000[d]	120000[d]	**42**	**42**	**67**	42	220		**106**	**107**	**38.4**	**108**	**170**	**62**	**100**
Copper	NV	3200	100	50	217	36	76.1		**42.7**	**55.1**	**52.2**	**28.4**	**53.6**	**59.4**	**27**
Lead	**250**	NV	**50**	**500**	**118**	17	--		**13.1**	**19.9**	**15.3**	**28.3**	**10**	**43.9**	**11**
Mercury[e]	2[e]	NV	0.3	0.1	5.5	0.07	--		**0.07**	**0.09**	**0.06**	**0.08**	**0.09**	**0.05**	0.33 U
Selenium	NV	400	1	70	0.3	NV	0.7		0.7 U	0.7 U	0.7 U	0.7 U	**0.7**	0.6 U	**0.63**
Silver	NV	400	2	NV	NV	NV	--		0.3 U	0.3 U	0.3 U	**0.4**	0.3 U	0.2 U	1.3 U
Zinc	NV	24000	86	200	360	86	260		**107**	**122**	**66**	**143**	**96**	**121**	**90**

Table 4B
Soil Analytical Results - Metals
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

								Location:	GP14	GP14	GP16	GP16	GP16	GP19	GP19
								Sample Name:	GP14-S-4.0	GP14-S-9.0	GP16-S-0.5	GP16-S-6.0	GP16-S-9.0	GP19-S-0.5	GP19-S-3.0
								Collection Date:	4/20/2015	4/20/2015	4/20/2015	4/20/2015	4/20/2015	4/21/2015	4/21/2015
								Collection Depths (ft bgs):	4	9	0.5	6	9	0.5	3
	MTCA A, Unrestricted Land Use	MTCA B	Ecological Indicator Concentrations[a]			Natural Background Metals[b]	90/90 UTL								
			Plants	Soil Biota	Wildlife										
Metals (mg/kg)															
Arsenic[c]	**20**	0.0667	**10**	**60**	**7**	7	17.2		**8.2**	**12**	**11**	**12**	**22**	**11**	**7.9**
Barium	NV	16000	500	NV	**102**	NV	206		**110**	**130**	**220**	**130**	**190**	**150**	**47**
Cadmium	2	80	4	20	14	1	--		0.65 U	0.74 U	0.65 U	0.65 U	0.75 U	0.71 U	0.64 U
Chromium[d]	2000[d]	120000[d]	**42**	**42**	**67**	42	220		**92**	**120**	**130**	**120**	**110**	**98**	**220**
Copper	NV	3200	100	50	217	36	76.1		**60**	**69**	**43**	**68**	**86**	**47**	**38**
Lead	**250**	NV	**50**	**500**	**118**	17	--		**8**	**11**	**900**	**10**	**11**	**13**	**11**
Mercury[e]	2[e]	NV	0.3	0.1	5.5	0.07	--		0.32 U	0.37 U	0.33 U	0.33 U	0.37 U	0.35 U	0.32 U
Selenium	NV	400	1	70	0.3	NV	0.7		**0.29**	0.3 U	**0.6**	0.26 U	**0.29**	**0.43**	**0.62**
Silver	NV	400	2	NV	NV	NV	--		1.3 U	1.5 U	1.3 U	1.3 U	1.5 U	1.4 U	1.3 U
Zinc	NV	24000	86	200	360	86	260		**100**	**130**	**180**	**110**	**150**	**160**	**120**

Table 4B
Soil Analytical Results - Metals
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

								Location:	GP19	GP35	GP35	GP35	GP36	GP36	GP36
								Sample Name:	GP19-S-7.0	GP35-S-0.5	GP35-S-3.0	GP35-S-7.5	GP36-S-0.5	GP36-S-3.5	GP36-S-8.0
								Collection Date:	4/21/2015	4/23/2015	4/23/2015	4/23/2015	4/23/2015	4/23/2015	4/23/2015
								Collection Depths (ft bgs):	7	0.5	3	7.5	0.5	3.5	8
	MTCA A, Unrestricted Land Use	MTCA B	Ecological Indicator Concentrations[a]			Natural Background Metals[b]	90/90 UTL								
			Plants	Soil Biota	Wildlife										
Metals (mg/kg)															
Arsenic[c]	**20**	0.0667	**10**	**60**	**7**	7	17.2		**8.9**	**5.5**	6.5 U	6.5 U	**71**	**10**	**6.7**
Barium	NV	16000	500	NV	**102**	NV	206		**75**	**140**	**120**	**110**	**200**	**180**	**48**
Cadmium	2	80	4	20	14	1	--		0.74 U	0.79 U	0.65 U	0.65 U	0.74 U	0.67 U	0.63 U
Chromium[d]	2000[d]	120000[d]	**42**	**42**	**67**	42	220		**230**	**82**	**72**	**140**	**90**	**93**	**36**
Copper	NV	3200	100	50	217	36	76.1		**61**	**33**	**38**	**53**	**37**	**53**	**28**
Lead	**250**	NV	**50**	**500**	**118**	17	--		**15**	7.9 U	6.5 U	**6.8**	**15**	**6.9**	6.3 U
Mercury[e]	2[e]	NV	0.3	0.1	5.5	0.07	--		0.37 U	0.39 U	0.33 U	0.32 U	0.37 U	0.34 U	0.32 U
Selenium	NV	400	1	70	0.3	NV	0.7		**0.5**	**0.83**	**0.23**	**0.18**	**0.62**	**0.18**	**0.19**
Silver	NV	400	2	NV	NV	NV	--		1.5 U	1.6 U	1.3 U	1.3 U	1.5 U	1.3 U	1.3 U
Zinc	NV	24000	86	200	360	86	260		**120**	**150**	**70**	**99**	**140**	**89**	**50**

Table 4B
Soil Analytical Results - Metals
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

								Location:	HA9	HA12	HA12	HA13	HA13	HA14	HA14
								Sample Name:	HA9-S-0.5	HA12-S-0.5	HA12-S-1.0	HA13-S-0.5	HA13-S-1.0	HA14-S-0.5	HA14-S-1.0
								Collection Date:	4/23/2015	6/10/2015	6/10/2015	6/10/2015	6/10/2015	6/10/2015	6/10/2015
								Collection Depths (ft bgs):	0.5	0.0 - 0.5	0.5-1.0	0.0 - 0.5	0.5 - 1.0	0.0 - 0.5	0.5 - 1.0
	MTCA A, Unrestricted Land Use	MTCA B	Ecological Indicator Concentrations[a]			Natural Background Metals[b]	90/90 UTL							
			Plants	Soil Biota	Wildlife									
Metals (mg/kg)														
Arsenic[c]	**20**	0.0667	**10**	**60**	**7**	7	17.2	--	**38**	**21**	**61**	**51**	**43**	**18**
Barium	NV	16000	500	NV	**102**	NV	206	--	--	--	--	--	--	--
Cadmium	2	80	4	20	14	1	--	--	--	--	--	--	--	--
Chromium[d]	2000[d]	120000[d]	**42**	**42**	**67**	42	220	--	--	--	--	--	--	--
Copper	NV	3200	100	50	217	36	76.1	--	--	--	--	--	--	--
Lead	**250**	NV	**50**	**500**	**118**	17	--	**76**	--	--	--	--	--	--
Mercury[e]	2[e]	NV	0.3	0.1	5.5	0.07	--	--	--	--	--	--	--	--
Selenium	NV	400	1	70	0.3	NV	0.7	--	--	--	--	--	--	--
Silver	NV	400	2	NV	NV	NV	--	--	--	--	--	--	--	--
Zinc	NV	24000	86	200	360	86	260	--	--	--	--	--	--	--

Table 4B
Soil Analytical Results - Metals
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

NOTES:

Detected results are indicated by **bold font**.

Exceedances are highlighted as follows:

Results that exceed MTCA Method A cleanup levels for unrestricted land use and at least one ecological indicator concentration.

Results that exceed at least one ecological indicator concentration.

MTCA B cleanup levels are provided. Lower of the Method B Cancer and Non Cancer is shown. Non-detect data not compared to a cleanup level.

90/90 UTL = 90 percent upper tolerance limit (90 percent coverage)

ft bgs = feet below ground surface.

J = the result is an estimated value.

mg/kg = milligrams per kilogram.

MTCA = model toxics control act.

NV = no value.

U = the result is non-detect.

[a]Ecological indicator concentrations were obtained from Model Toxics Control Act Table 749-3.

[b]Natural background metals concentrations in soil are the Washington State, statewide 90th percentile concentrations obtained from Ecology, 1994.

[c]Plants and soil biota screening levels are for arsenic V and the wildlife screening level is for arsenic III. Reported results are for total arsenic.

[d]Trivalent chromium (chromium III) screening level.

[e]Inorganic mercury screening level.

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP2	GP8	GP11	GP12	GP13	GP15	GP17	GP18	GP20
					Sample Name:	GP2-W-10.0	GP8-W-12.5	GP11-W-18.0	GP12-W-15.0	GP13-W-13.0	GP15-W-18.0	GP17-W-13.5	GP18-W-13.0	GP20-W-13.0
					Collection Date:	8/19/2014	8/19/2014	4/20/2015	4/20/2015	4/20/2015	4/20/2015	4/20/2015	4/21/2015	4/21/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)										
Total metals (ug/l)														
Arsenic	5	0.0583	5[a]	--		--	--	--	--	--	**140**	**64**	**40**	**18**
Barium	NV	3200	1000	--		--	--	--	--	--	**920**	**240**	**170**	**160**
Cadmium	5	8	0.25	--		--	--	--	--	--	4.4 U	4.4 U	4.4 U	4.4 U
Chromium	50	NV	57.2	--		--	--	--	--	--	**640**	**320**	**190**	**170**
Lead	15	NV	0.54	--		--	--	--	--	--	**57**	**43**	**19**	**30**
Mercury	2	NV	0.012	--		--	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U
Selenium	NV	80	5	--		--	--	--	--	--	**6.8**	5.6 U	5.6 U	5.6 U
Silver	NV	80	1.9	--		--	--	--	--	--	11 U	11 U	11 U	11 U
Dissolved[e] Metals (ug/l)														
Arsenic	5	0.0583	5[a]	--		**2.9**	--	--	--	--	**11**	**17**	**15**	3 U
Barium	NV	3200	1000	--		**20.5**	--	--	--	--	**48**	**60**	**35**	**47**
Cadmium	5	8	0.25	--		0.1 U	--	--	--	--	4 U	4 U	4 U	4 U
Chromium	50	NV	57.2	--		0.5 U	--	--	--	--	10 U	10 U	10 U	10 U
Copper	NV	320	3.47	--		**1.0**	--	--	--	--	--	--	--	--
Lead	15	NV	0.54	--		0.1 U	--	--	--	--	1 U	1 U	1 U	1 U
Mercury	2	NV	0.012	--		0.1 U	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U
Selenium	NV	80	5	--		0.5 U	--	--	--	--	5 U	5 U	5 U	5 U
Silver	NV	80	1.9	--		0.2 U	--				10 U	10 U	10 U	10 U
Zinc	NV	4800	32.3	--		4.0 U	--	--	--	--	--	--	--	--
VOCs (ug/l)														
1,1,1,2-Tetrachloroethane	NV	1.68	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,1,1-Trichloroethane	200	16000	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,1,2,2-Tetrachloroethane	NV	0.219	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,1,2-Trichloroethane	NV	0.768	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,1-Dichloroethane	NV	7.68	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,1-Dichloroethene	NV	400	--	--		--	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	--	--	--	--
1,2,3-Trichlorobenzene	NV	NV	--	--		--	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,2,3-Trichloropropane	NV	0.0015	--	--		--	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,2,4-Trichlorobenzene	NV	1.51	--	--		--	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,2,4-Trimethylbenzene	NV	NV	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,2-Dibromo-3-chloropropane	NV	0.05	--	--		--	0.5 U	1 U	1 U	1 U	--	--	--	--

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP2	GP8	GP11	GP12	GP13	GP15	GP17	GP18	GP20
					Sample Name:	GP2-W-10.0	GP8-W-12.5	GP11-W-18.0	GP12-W-15.0	GP13-W-13.0	GP15-W-18.0	GP17-W-13.5	GP18-W-13.0	GP20-W-13.0
					Collection Date:	8/19/2014	8/19/2014	4/20/2015	4/20/2015	4/20/2015	4/20/2015	4/20/2015	4/21/2015	4/21/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)										
1,2-Dibromoethane	0.01	0.02	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,2-Dichlorobenzene	NV	720	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,2-Dichloroethane	5	0.48	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,2-Dichloropropane	NV	NV	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,3,5-Trimethylbenzene	NV	80	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,3-Dichlorobenzene	NV	NV	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,3-Dichloropropane	NV	NV	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
1,4-Dichlorobenzene	NV	NV	--	--	--	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	--	--	--	--
2-Butanone	NV	4800	--	--	--	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	--	--	--	--
2-Chlorotoluene	NV	160	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
2-Hexanone	NV	NV	--	--	--	5 U	2 U	2 U	2 U	2 U	--	--	--	--
4-Chlorotoluene	NV	NV	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
4-Isopropyltoluene	NV	NV	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
4-Methyl-2-pentanone	NV	640	--	--	--	5 U	2 U	2 U	2 U	2 U	--	--	--	--
Acetone	NV	7200	--	--	--	5 U	5 U	5 U	5 U	5 U	--	--	--	--
Acrolein	NV	4	--	--	--	5 U	--	--	--	--	--	--	--	--
Acrylonitrile	NV	0.08	--	--	--	1 U	--	--	--	--	--	--	--	--
Benzene	5	0.80	--	--	1 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	--	--	--	--
Bromodichloromethane	NV	0.71	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Bromoethane	NV	NV	--	--	--	0.2 U	--	--	--	--	--	--	--	--
Bromoform	NV	5.54	--	--	--	0.2 U	1 U	1 U	1 U	1 U	--	--	--	--
Bromomethane	NV	11.2	--	--	--	1 U	0.26 U	0.26 U	0.26 U	0.26 U	--	--	--	--
Carbon disulfide	NV	800	NV	400	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Carbon tetrachloride	NV	0.63	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Chlorobenzene	NV	160	--	--	--	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	--	--	--	--
Chloroethane	NV	NV	--	--	--	0.2 U	1 U	1 U	1 U	1 U	--	--	--	--
Chloroform	NV	80	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Chloromethane	NV	NV	--	--	--	0.5 U	1 U	1 U	1 U	1 U	--	--	--	--
cis-1,2-Dichloroethene	NV	16	NV	160	--	**0.6**	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP2	GP8	GP11	GP12	GP13	GP15	GP17	GP18	GP20
					Sample Name:	GP2-W-10.0	GP8-W-12.5	GP11-W-18.0	GP12-W-15.0	GP13-W-13.0	GP15-W-18.0	GP17-W-13.5	GP18-W-13.0	GP20-W-13.0
					Collection Date:	8/19/2014	8/19/2014	4/20/2015	4/20/2015	4/20/2015	4/20/2015	4/20/2015	4/21/2015	4/21/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)										
cis-1,3-Dichloropropene	NV	0.44	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Dibromochloromethane	NV	0.52	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Dibromomethane	NV	80	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Dichlorodifluoromethane	NV	1600	--	--		--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Ethylbenzene	700	800	--	--		1 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Freon 113	NV	240000	--	--		--	0.2 U	--	--	--	--	--	--	--
Hexachlorobutadiene	NV	0.56	--	--		--	0.5 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Isopropylbenzene	NV	800	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
m,p-Xylene	1000[c]	1600[c]	--	--		2 U	0.4 U	0.4 U	0.4 U	0.4 U	--	--	--	--
Methyl iodide	NV	NV	--	--		--	1 U	1.5 U	1.5 U	1.5 U	--	--	--	--
Methyl tert-butyl ether	20	24.3	--	--		--	--	0.2 U	0.2 U	0.2 U	--	--	--	--
Methylene chloride	5	5.83	--	--		--	1 U	1 U	1 U	1 U	--	--	--	--
Naphthalene	160	160	--	--		--	0.5 U	1 U	1 U	1 U	--	--	--	--
n-Butylbenzene	NV	NV	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
n-Propylbenzene	NV	800	NV	NV		--	0.2 U	0.2 U	**0.32**	0.2 U	--	--	--	--
o-Xylene	1000[c]	1600[c]	--	--		1 U	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
sec-Butylbenzene	NV	800	NV	NV		--	0.2 U	0.2 U	**0.29**	0.2 U	--	--	--	--
Styrene	NV	1600	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
tert-Butylbenzene	NV	NV	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Tetrachloroethene	5	21	0.69	22.9		--	**11**	0.2 U	0.2 U	0.2 U	--	--	--	--
Toluene	1000	640	--	--		1 U	0.2 U	1 U	1 U	1 U	--	--	--	--
trans-1,2-dichloroethene	NV	160	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
trans-1,3-Dichloropropene	NV	240	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
trans-1,4-Dichloro-2-butene	NV	NV	--	--		--	1 U	--	--	--	--	--	--	--
Trichloroethene	5	0.54	2.5	1.55		--	**0.79**	0.2 U	0.2 U	0.2 U	--	--	--	--
Trichlorofluoromethane	NV	2400	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Vinyl Acetate	NV	8000	--	--		--	0.2 U	1 U	1 U	1 U	--	--	--	--
Vinyl chloride	0.2	24	--	--		--	0.2 U	0.2 U	0.2 U	0.2 U	--	--	--	--
Xylenes, Total	1000[c]	1600[c]	--	--		2 U	0.4 U	0.4 U	0.4 U	0.4 U	--	--	--	--
SVOCs (ug/l)														
1,2,4-Trichlorobenzene	NV	1.51	--	--		--	--	1 U	0.99 U	--	--	--	--	--
1,2-Dichlorobenzene	NV	720	--	--		--	--	1 U	0.99 U	--	--	--	--	--
1,2-Dinitrobenzene	NV	1.6	--	--		--	--	1 U	0.99 U	--	--	--	--	--

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

				Location:	GP2	GP8	GP11	GP12	GP13	GP15	GP17	GP18	GP20
				Sample Name:	GP2-W-10.0	GP8-W-12.5	GP11-W-18.0	GP12-W-15.0	GP13-W-13.0	GP15-W-18.0	GP17-W-13.5	GP18-W-13.0	GP20-W-13.0
				Collection Date:	8/19/2014	8/19/2014	4/20/2015	4/20/2015	4/20/2015	4/20/2015	4/20/2015	4/21/2015	4/21/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)									
1,3-Dichlorobenzene	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
1,4-Dichlorobenzene	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
1,4-Dinitrobenzene	NV	1.6	--	--	--	--	1 U	0.99 U	--	--	--	--	--
2,3,4,6-Tetrachlorophenol	NV	480	--	--	--	--	1 U	0.99 U	--	--	--	--	--
2,3,5,6-Tetrachlorophenol	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
2,3-Dichloroaniline	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
2,4,5-Trichlorophenol	NV	800	--	--	--	--	1 U	0.99 U	--	--	--	--	--
2,4,6-Trichlorophenol	NV	3.98	--	--	--	--	1 U	0.99 U	--	--	--	--	--
2,4-Dichlorophenol	NV	24	--	--	--	--	1 U	0.99 U	--	--	--	--	--
2,4-Dimethylphenol	NV	160	--	--	--	--	1 U	0.99 U	--	--	--	--	--
2,4-Dinitrophenol	NV	32	--	--	--	--	5.2 U	5 U	--	--	--	--	--
2,4-Dinitrotoluene	NV	32	--	--	--	--	1 U	0.99 U	--	--	--	--	--
2,6-Dinitrotoluene	NV	16	--	--	--	--	1 U	0.99 U	--	--	--	--	--
2-Chloronaphthalene	NV	640	--	--	--	--	1 U	0.99 U	--	--	--	--	--
2-Chlorophenol	NV	40	--	--	--	--	1 U	0.99 U	--	--	--	--	--
2-Methylphenol	NV	400	--	--	--	--	1 U	0.99 U	--	--	--	--	--
2-Nitroaniline	NV	160	--	--	--	--	1 U	0.99 U	--	--	--	--	--
2-Nitrophenol	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
3- & 4-Methylphenol	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
3,3-Dichlorobenzidine	NV	0.19	--	--	--	--	1 U	0.99 U	--	--	--	--	--
3-Nitroaniline	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
4,6-Dinitro-2-methylphenol	NV	NV	--	--	--	--	5.2 U	5 U	--	--	--	--	--
4-Bromophenylphenyl ether	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
4-Chloro-3-methylphenol	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
4-Chloroaniline	NV	0.22	--	--	--	--	1 U	0.99 U	--	--	--	--	--
4-Chlorophenylphenyl ether	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
4-Nitroaniline	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
4-Nitrophenol	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Aniline	NV	7.68	--	--	--	--	5.2 U	5 U	--	--	--	--	--
Benzidine	NV	0.00038	--	--	--	--	5.2 U	5 U	--	--	--	--	--
Benzyl alcohol	NV	800	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Bis(2-chloroethoxy)methane	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Bis(2-chloroethyl)ether	NV	0.04	--	--	--	--	1 U	0.99 U	--	--	--	--	--

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

				Location:	GP2	GP8	GP11	GP12	GP13	GP15	GP17	GP18	GP20
				Sample Name:	GP2-W-10.0	GP8-W-12.5	GP11-W-18.0	GP12-W-15.0	GP13-W-13.0	GP15-W-18.0	GP17-W-13.5	GP18-W-13.0	GP20-W-13.0
				Collection Date:	8/19/2014	8/19/2014	4/20/2015	4/20/2015	4/20/2015	4/20/2015	4/20/2015	4/21/2015	4/21/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)									
Bis(2-chloroisopropyl)ether	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	NV	6.25	--	--	--	--	5.2 U	5 U	--	--	--	--	--
Butylbenzylphthalate	NV	46.10	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Carbazole	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Di(2-ethylhexyl)adipate	NV	72.92	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Dibenzofuran	NV	16	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Diethyl phthalate	NV	12800	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Dimethyl phthalate	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Di-n-butyl phthalate	NV	1600	NV	NV	--	--	**1**	**1.6**	--	--	--	--	--
Di-n-octyl phthalate	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Hexachlorobenzene	NV	0.05	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Hexachlorobutadiene	NV	0.56	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Hexachlorocyclopentadiene	NV	48	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Hexachloroethane	NV	3.13	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Hydrazine, 1,2-diphenyl	NV	0.11	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Isophorone	NV	46.05	--	--	--	--	1 U	0.99 U	--	--	--	--	--
m-Dinitrobenzene	NV	1.6	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Nitrobenzene	NV	16	--	--	--	--	1 U	0.99 U	--	--	--	--	--
N-Nitrosodimethylamine	NV	0.064	--	--	--	--	1 U	0.99 U	--	--	--	--	--
N-Nitrosodiphenylamine	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
N-Nitrosodipropylamine	NV	NV	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Pentachlorophenol	NV	0.22	--	--	--	--	5.2 U	5 U	--	--	--	--	--
Phenol	NV	2400	--	--	--	--	1 U	0.99 U	--	--	--	--	--
Pyridine	NV	8	--	--	--	--	1 U	0.99 U	--	--	--	--	--
PAHs (ug/l)													
1-Methylnaphthalene	NV	1.51	--	--	0.1 U	--	0.1 U	0.099 U	--	--	--	--	--
2-Methylnaphthalene	NV	32	NV	--	0.1 U	--	0.1 U	**0.26**	--	--	--	--	--
Acenaphthene	NV	960	--	--	0.1 U	--	0.1 U	0.099 U	--	--	--	--	--
Acenaphthylene	NV	NV	--	--	0.1 U	--	0.1 U	0.099 U	--	--	--	--	--
Anthracene	NV	4800	--	--	0.1 U	--	0.1 U	0.099 U	--	--	--	--	--
Benzo(a)anthracene	NV	0.12	0.0028	--	0.1 U	--	0.01 U	**0.013**	--	--	--	--	--
Benzo(a)pyrene	0.1	0.01	0.0028	--	0.1 U	--	0.01 U	0.0099 U	--	--	--	--	--
Benzo(b)fluoranthene	NV	0.12	0.0028	--	--	--	0.01 U	0.0099 U	--	--	--	--	--

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP2	GP8	GP11	GP12	GP13	GP15	GP17	GP18	GP20
					Sample Name:	GP2-W-10.0	GP8-W-12.5	GP11-W-18.0	GP12-W-15.0	GP13-W-13.0	GP15-W-18.0	GP17-W-13.5	GP18-W-13.0	GP20-W-13.0
					Collection Date:	8/19/2014	8/19/2014	4/20/2015	4/20/2015	4/20/2015	4/20/2015	4/20/2015	4/21/2015	4/21/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)										
Benzo(ghi)perylene	NV	NV	--	--		0.1 U	--	0.01 U	0.0099 U	--	--	--	--	--
Benzo(j+k)fluoranthene	NV	1.2	--	--		--	--	0.01 U	0.0099 U	--	--	--	--	--
Chrysene	NV	12	0.0028	--		0.1 U	--	0.01 U	0.0099 U	--	--	--	--	--
Dibenzo(a,h)anthracene	NV	0.01	--	--		0.1 U	--	0.01 U	0.0099 U	--	--	--	--	--
Dibenzofuran	NV	16	--	--		0.1 U	--	--	--	--	--	--	--	--
Fluoranthene	NV	640	--	--		0.1 U	--	0.1 U	0.099 U	--	--	--	--	--
Fluorene	NV	640	--	--		0.1 U	--	0.1 U	0.099 U	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	NV	0.12	--	--		0.1 U	--	0.01 U	0.0099 U	--	--	--	--	--
Naphthalene	160	160	4713	--		**0.14**	--	0.1 U	**0.18**	--	--	--	--	--
Phenanthrene	NV	NV	--	--		0.1 U	--	0.1 U	0.099 U	--	--	--	--	--
Pyrene	NV	480	830	--		0.1 U	--	0.1 U	**0.15**	--	--	--	--	--
Total Benzofluoranthenes	NV	--	--	--		0.1 U	--	--	--	--	--	--	--	--
Total Naphthalenes	160	--	4713	--		**0.24**	--	0.1 U	**0.49**	--	--	--	--	--
cPAH TEQ	0.1	--	0.0028	--		ND	--	ND	**0.0013**	--	--	--	--	--
TPH Identification (Presence/Absence)														
Gasoline	NV	NV	NV	NV		ND	ND	--	--	--	--	--	--	--
Diesel	NV	NV	NV	NV		**DETECT**	ND	--	--	--	--	--	--	--
Lube Oil	NV	NV	NV	NV		**DETECT**	ND	--	--	--	--	--	--	--
TPH (ug/l)														
Gasoline	1000[d]	NV	NV	NV		--	--	100 U	100 U	100 U	--	--	--	--
Diesel	500	NV	NV	NV		**540**	--	--	--	--	260 U	260 U	260 U	260 U
Lube Oil	500	NV	NV	NV		**1200**	--	--	--	--	420 U	410 U	410 U	420 U
Heavy Oils (Diesel + Lube Oil)	500	NV	NV	NV		**1740**	--	--	--	--	420 U	410 U	410 U	420 U

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP21	GP24	GP25	GP26	GP27	GP28	GP29	GP30	GP32
					Sample Name:	GP21-W-19.0	GP24-W-18.0	GP25-W-15.0	GP26-W-12.5	GP27-W-10.0	GP28-W-13.0	GP29-W-15.0	GP30-W-20.0	GP32-W-15.0
					Collection Date:	4/21/2015	4/21/2015	4/21/2015	4/21/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)										
Total metals (ug/l)														
Arsenic	5	0.0583	5[a]	--		3.3 U	--	--	--	--	--	**3.4**	**420**	--
Barium	NV	3200	1000	--		**160**	--	--	--	--	--	**150**	**3000**	--
Cadmium	5	8	0.25	--		4.4 U	--	--	--	--	--	4.4 U	**8.9**	--
Chromium	50	NV	57.2	--		11 U	--	--	--	--	--	**22**	**2300**	--
Lead	15	NV	0.54	--		**48**	--	--	--	--	--	**14**	**250**	--
Mercury	2	NV	0.012	--		0.5 U	--	--	--	--	--	0.5 U	**1.4**	--
Selenium	NV	80	5	--		5.6 U	--	--	--	--	--	5.6 U	**18**	--
Silver	NV	80	1.9	--		11 U	--	--	--	--	--	11 U	11 U	--
Dissolved[e] Metals (ug/l)														
Arsenic	5	0.0583	5[a]	--		3 U	--	--	--	--	--	3 U	**58**	--
Barium	NV	3200	1000	--		**100**	--	--	--	--	--	**36**	25 U	--
Cadmium	5	8	0.25	--		4 U	--	--	--	--	--	4 U	4 U	--
Chromium	50	NV	57.2	--		10 U	--	--	--	--	--	10 U	10 U	--
Copper	NV	320	3.47	--		--	--	--	--	--	--	--	--	--
Lead	15	NV	0.54	--		1 U	--	--	--	--	--	1 U	1 U	--
Mercury	2	NV	0.012	--		0.5 U	--	--	--	--	--	0.5 U	0.5 U	--
Selenium	NV	80	5	--		5 U	--	--	--	--	--	5 U	5 U	--
Silver	NV	80	1.9	--		10 U	--	--	--	--	--	10 U	10 U	--
Zinc	NV	4800	32.3	--		--	--	--	--	--	--	--	--	--
VOCs (ug/l)														
1,1,1,2-Tetrachloroethane	NV	1.68	--	--		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	200	16000	--	--		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	NV	0.219	--	--		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	NV	0.768	--	--		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	NV	7.68	--	--		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	NV	400	--	--		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	--	--		0.2 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-Trichloropropane	NV	0.0015	--	--		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
1,2,4-Trichlorobenzene	NV	1.51	--	--		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
1,2,4-Trimethylbenzene	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-Dibromo-3-chloropropane	NV	0.05	--	--		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP21	GP24	GP25	GP26	GP27	GP28	GP29	GP30	GP32
					Sample Name:	GP21-W-19.0	GP24-W-18.0	GP25-W-15.0	GP26-W-12.5	GP27-W-10.0	GP28-W-13.0	GP29-W-15.0	GP30-W-20.0	GP32-W-15.0
					Collection Date:	4/21/2015	4/21/2015	4/21/2015	4/21/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)										
1,2-Dibromoethane	0.01	0.02	--	--		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	NV	720	--	--		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-Dichloroethane	5	0.48	--	--		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-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	--
1,3,5-Trimethylbenzene	NV	80	--	--		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
1,3-Dichlorobenzene	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	--
1,3-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	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	--
2,2-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	NV	4800	--	--		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	NV	160	--	--		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-Hexanone	NV	NV	--	--		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 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	--	--		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-Methyl-2-pentanone	NV	640	--	--		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--
Acetone	NV	7200	--	--		6.8 U	6.8 U	6.8 U	6.8 U	7.1 U	7.1 U	7.1 U	7.1 U	--
Acrolein	NV	4	--	--		--	--	--	--	--	--	--	--	--
Acrylonitrile	NV	0.08	--	--		--	--	--	--	--	--	--	--	--
Benzene	5	0.80	--	--		0.2 U	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	NV	0.71	--	--		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	--	--		--	--	--	--	--	--	--	--	--
Bromoform	NV	5.54	--	--		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Bromomethane	NV	11.2	--	--		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
Carbon disulfide	NV	800	NV	400		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.23**	--
Carbon tetrachloride	NV	0.63	--	--		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	NV	160	--	--		0.2 U	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	--	--		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Chloroform	NV	80	--	--		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	--	--		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
cis-1,2-Dichloroethene	NV	16	NV	160		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

				Location:	GP21	GP24	GP25	GP26	GP27	GP28	GP29	GP30	GP32
				Sample Name:	GP21-W-19.0	GP24-W-18.0	GP25-W-15.0	GP26-W-12.5	GP27-W-10.0	GP28-W-13.0	GP29-W-15.0	GP30-W-20.0	GP32-W-15.0
				Collection Date:	4/21/2015	4/21/2015	4/21/2015	4/21/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)									
cis-1,3-Dichloropropene	NV	0.44	--	--	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	NV	0.52	--	--	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	NV	80	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
Dichlorodifluoromethane	NV	1600	--	--	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	700	800	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
Freon 113	NV	240000	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	NV	0.56	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
Isopropylbenzene	NV	800	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
m,p-Xylene	1000[c]	1600[c]	--	--	0.4 U	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	--
Methyl tert-butyl ether	20	24.3	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
Methylene chloride	5	5.83	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Naphthalene	160	160	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
n-Butylbenzene	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	--
n-Propylbenzene	NV	800	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	--
o-Xylene	1000[c]	1600[c]	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
sec-Butylbenzene	NV	800	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	--
Styrene	NV	1600	--	--	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	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	--
Tetrachloroethene	5	21	0.69	22.9	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	--
Toluene	1000	640	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
trans-1,2-dichloroethene	NV	160	--	--	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	240	--	--	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	--	--	--	--	--	--	--	--	--	--	--
Trichloroethene	5	0.54	2.5	1.55	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	NV	2400	--	--	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	NV	8000	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--
Vinyl chloride	0.2	24	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--
Xylenes, Total	1000[c]	1600[c]	--	--	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	--
SVOCs (ug/l)													
1,2,4-Trichlorobenzene	NV	1.51	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
1,2-Dichlorobenzene	NV	720	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
1,2-Dinitrobenzene	NV	1.6	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

				Location:	GP21	GP24	GP25	GP26	GP27	GP28	GP29	GP30	GP32
				Sample Name:	GP21-W-19.0	GP24-W-18.0	GP25-W-15.0	GP26-W-12.5	GP27-W-10.0	GP28-W-13.0	GP29-W-15.0	GP30-W-20.0	GP32-W-15.0
				Collection Date:	4/21/2015	4/21/2015	4/21/2015	4/21/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)									
1,3-Dichlorobenzene	NV	NV	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
1,4-Dichlorobenzene	NV	NV	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
1,4-Dinitrobenzene	NV	1.6	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
2,3,4,6-Tetrachlorophenol	NV	480	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
2,3,5,6-Tetrachlorophenol	NV	NV	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
2,3-Dichloroaniline	NV	NV	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
2,4,5-Trichlorophenol	NV	800	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
2,4,6-Trichlorophenol	NV	3.98	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
2,4-Dichlorophenol	NV	24	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
2,4-Dimethylphenol	NV	160	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
2,4-Dinitrophenol	NV	32	--	--	4.7 U	--	--	--	--	--	4.8 U	4.8 U	--
2,4-Dinitrotoluene	NV	32	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
2,6-Dinitrotoluene	NV	16	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
2-Chloronaphthalene	NV	640	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
2-Chlorophenol	NV	40	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
2-Methylphenol	NV	400	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
2-Nitroaniline	NV	160	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
2-Nitrophenol	NV	NV	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
3- & 4-Methylphenol	NV	NV	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
3,3-Dichlorobenzidine	NV	0.19	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
3-Nitroaniline	NV	NV	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
4,6-Dinitro-2-methylphenol	NV	NV	--	--	4.7 U	--	--	--	--	--	4.8 U	4.8 U	--
4-Bromophenylphenyl ether	NV	NV	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
4-Chloro-3-methylphenol	NV	NV	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
4-Chloroaniline	NV	0.22	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
4-Chlorophenylphenyl ether	NV	NV	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
4-Nitroaniline	NV	NV	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
4-Nitrophenol	NV	NV	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Aniline	NV	7.68	--	--	4.7 U	--	--	--	--	--	4.8 U	4.8 U	--
Benzidine	NV	0.00038	--	--	4.7 U	--	--	--	--	--	4.8 U	4.8 U	--
Benzyl alcohol	NV	800	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Bis(2-chloroethoxy)methane	NV	NV	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Bis(2-chloroethyl)ether	NV	0.04	--	--	0.94 U	--	--	--	--	--	0.95 U	0.96 U	--

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

					Location:	GP21	GP24	GP25	GP26	GP27	GP28	GP29	GP30	GP32
					Sample Name:	GP21-W-19.0	GP24-W-18.0	GP25-W-15.0	GP26-W-12.5	GP27-W-10.0	GP28-W-13.0	GP29-W-15.0	GP30-W-20.0	GP32-W-15.0
					Collection Date:	4/21/2015	4/21/2015	4/21/2015	4/21/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)										
Bis(2-chloroisopropyl)ether	NV	NV	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Bis(2-ethylhexyl)phthalate	NV	6.25	--	--		4.7 U	--	--	--	--	--	4.8 U	4.8 U	--
Butylbenzylphthalate	NV	46.10	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Carbazole	NV	NV	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Di(2-ethylhexyl)adipate	NV	72.92	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Dibenzofuran	NV	16	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Diethyl phthalate	NV	12800	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Dimethyl phthalate	NV	NV	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Di-n-butyl phthalate	NV	1600	NV	NV		**1.5**	--	--	--	--	--	0.95 U	0.96 U	--
Di-n-octyl phthalate	NV	NV	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Hexachlorobenzene	NV	0.05	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Hexachlorobutadiene	NV	0.56	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Hexachlorocyclopentadiene	NV	48	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Hexachloroethane	NV	3.13	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Hydrazine, 1,2-diphenyl	NV	0.11	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Isophorone	NV	46.05	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
m-Dinitrobenzene	NV	1.6	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Nitrobenzene	NV	16	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
N-Nitrosodimethylamine	NV	0.064	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
N-Nitrosodiphenylamine	NV	NV	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
N-Nitrosodipropylamine	NV	NV	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Pentachlorophenol	NV	0.22	--	--		4.7 U	--	--	--	--	--	4.8 U	4.8 U	--
Phenol	NV	2400	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
Pyridine	NV	8	--	--		0.94 U	--	--	--	--	--	0.95 U	0.96 U	--
PAHs (ug/l)														
1-Methylnaphthalene	NV	1.51	--	--		0.094 U	--	--	--	--	--	0.095 U	0.096 U	--
2-Methylnaphthalene	NV	32	NV	--		0.094 U	--	--	--	--	--	0.095 U	0.096 U	--
Acenaphthene	NV	960	--	--		0.094 U	--	--	--	--	--	0.095 U	0.096 U	--
Acenaphthylene	NV	NV	--	--		0.094 U	--	--	--	--	--	0.095 U	0.096 U	--
Anthracene	NV	4800	--	--		0.094 U	--	--	--	--	--	0.095 U	0.096 U	--
Benzo(a)anthracene	NV	0.12	0.0028	--		**0.018**	--	--	--	--	--	**0.015**	0.0096 U	--
Benzo(a)pyrene	0.1	0.01	0.0028	--		**0.014**	--	--	--	--	--	**0.012** J	0.0096 U	--
Benzo(b)fluoranthene	NV	0.12	0.0028	--		**0.013**	--	--	--	--	--	**0.012** J	0.0096 U	--

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

				Location:	GP21	GP24	GP25	GP26	GP27	GP28	GP29	GP30	GP32
				Sample Name:	GP21-W-19.0	GP24-W-18.0	GP25-W-15.0	GP26-W-12.5	GP27-W-10.0	GP28-W-13.0	GP29-W-15.0	GP30-W-20.0	GP32-W-15.0
				Collection Date:	4/21/2015	4/21/2015	4/21/2015	4/21/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015	4/22/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)									
Benzo(ghi)perylene	NV	NV	--	--	0.0094 U	--	--	--	--	--	0.0095 UJ	0.0096 U	--
Benzo(j+k)fluoranthene	NV	1.2	--	--	0.0094 U	--	--	--	--	--	0.0095 UJ	0.0096 U	--
Chrysene	NV	12	0.0028	--	**0.011**	--	--	--	--	--	**0.014**	0.0096 U	--
Dibenzo(a,h)anthracene	NV	0.01	--	--	0.0094 U	--	--	--	--	--	0.0095 UJ	0.0096 U	--
Dibenzofuran	NV	16	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	NV	640	--	--	0.094 U	--	--	--	--	--	0.095 U	0.096 U	--
Fluorene	NV	640	--	--	0.094 U	--	--	--	--	--	0.095 U	0.096 U	--
Indeno(1,2,3-cd)pyrene	NV	0.12	--	--	0.0094 U	--	--	--	--	--	0.0095 UJ	0.0096 U	--
Naphthalene	160	160	4713	--	**0.26**	--	--	--	--	--	0.095 U	0.096 U	--
Phenanthrene	NV	NV	--	--	0.094 U	--	--	--	--	--	0.095 U	0.096 U	--
Pyrene	NV	480	830	--	0.094 U	--	--	--	--	--	0.095 U	0.096 U	--
Total Benzofluoranthenes	NV	--	--	--	--	--	--	--	--	--	--	--	--
Total Naphthalenes	160	--	4713	--	**0.35**	--	--	--	--	--	0.095 U	0.096 U	--
cPAH TEQ	0.1	--	0.0028	--	**0.017**	--	--	--	--	--	**0.015**	ND	--
TPH Identification (Presence/Absence)													
Gasoline	NV	NV	NV	NV	--	--	--	--	--	--	--	ND	--
Diesel	NV	NV	NV	NV	--	--	--	--	--	--	--	ND	--
Lube Oil	NV	NV	NV	NV	--	--	--	--	--	--	--	ND	--
TPH (ug/l)													
Gasoline	1000[d]	NV	NV	NV	100 U	--	--	--	--	--	100 U	--	
Diesel	500	NV	NV	NV	--	--	--	--	--	--	--	--	260 U
Lube Oil	500	NV	NV	NV	--	--	--	--	--	--	--	--	420 U
Heavy Oils (Diesel + Lube Oil)	500	NV	NV	NV	--	--	--	--	--	--	--	--	420 U

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

				Location:	GP33	GP33	MW01	MW02	MW03	MW04
				Sample Name:	GP DUP-W-12.0	GP33-W-12.0	MW01-GW-061015	MW02-GW-061015	MW03-GW-061015	MW04-GW-061015
				Collection Date:	4/22/2015	4/22/2015	6/10/2015	6/10/2015	6/10/2015	6/10/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)						
Total metals (ug/l)										
Arsenic	5	0.0583	5[a]	--	--	--	**38**	**1.3**	**21**	**5**
Barium	NV	3200	1000	--	--	--	28 U	**110**	**28**	**66**
Cadmium	5	8	0.25	--	--	--	0.24 U	0.24 U	0.24 U	0.24 U
Chromium	50	NV	57.2	--	--	--	11 U	11 U	11 U	11 U
Lead	15	NV	0.54	--	--	--	**0.94**	**2.1**	0.5 U	0.5 U
Mercury	2	NV	0.012	--	--	--	0.025 U	0.025 U	0.025 U	0.025 U
Selenium	NV	80	5	--	--	--	5 U	5 U	5 U	5 U
Silver	NV	80	1.9	--	--	--	1.1 U	1.1 U	1.1 U	1.1 U
Dissolved[e] Metals (ug/l)										
Arsenic	5	0.0583	5[a]	--	--	--	**37**	**1.2**	**21**	**5.6**
Barium	NV	3200	1000	--	--	--	25 U	**110**	**26**	**64**
Cadmium	5	8	0.25	--	--	--	0.25 U	0.25 U	0.25 U	0.25 U
Chromium	50	NV	57.2	--	--	--	10 U	10 U	10 U	10 U
Copper	NV	320	3.47	--	--	--	--	--	--	--
Lead	15	NV	0.54	--	--	--	0.5 U	**1**	0.5 U	0.5 U
Mercury	2	NV	0.012	--	--	--	0.025 U	0.025 U	0.025 U	0.025 U
Selenium	NV	80	5	--	--	--	5 U	5 U	5 U	5 U
Silver	NV	80	1.9	--	--	--	1 U	1 U	1 U	1 U
Zinc	NV	4800	32.3	--	--	--	--	--		--
VOCs (ug/l)										
1,1,1,2-Tetrachloroethane	NV	1.68	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	200	16000	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	NV	0.219	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	NV	0.768	--	--	--	--	--	--	--	--
1,1-Dichloroethane	NV	7.68	--	--	--	--	--	--	--	--
1,1-Dichloroethene	NV	400	--	--	--	--	--	--	--	--
1,1-Dichloropropene	NV	NV	--	--	--	--	--	--	--	--
1,2,3-Trichlorobenzene	NV	NV	--	--	--	--	--	--	--	--
1,2,3-Trichloropropane	NV	0.0015	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	NV	1.51	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	NV	NV	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	NV	0.05	--	--	--	--	--	--	--	--

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

				Location:	GP33	GP33	MW01	MW02	MW03	MW04
				Sample Name:	GP DUP-W-12.0	GP33-W-12.0	MW01-GW-061015	MW02-GW-061015	MW03-GW-061015	MW04-GW-061015
				Collection Date:	4/22/2015	4/22/2015	6/10/2015	6/10/2015	6/10/2015	6/10/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)						
1,2-Dibromoethane	0.01	0.02	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	NV	720	--	--	--	--	--	--	--	--
1,2-Dichloroethane	5	0.48	--	--	--	--	--	--	--	--
1,2-Dichloropropane	NV	NV	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	NV	80	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--
1,3-Dichloropropane	NV	NV	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--
2,2-Dichloropropane	NV	NV	--	--	--	--	--	--	--	--
2-Butanone	NV	4800	--	--	--	--	--	--	--	--
2-Chloroethylvinyl ether	NV	NV	--	--	--	--	--	--	--	--
2-Chlorotoluene	NV	160	--	--	--	--	--	--	--	--
2-Hexanone	NV	NV	--	--	--	--	--	--	--	--
4-Chlorotoluene	NV	NV	--	--	--	--	--	--	--	--
4-Isopropyltoluene	NV	NV	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone	NV	640	--	--	--	--	--	--	--	--
Acetone	NV	7200	--	--	--	--	--	--	--	--
Acrolein	NV	4	--	--	--	--	--	--	--	--
Acrylonitrile	NV	0.08	--	--	--	--	--	--	--	--
Benzene	5	0.80	--	--	--	--	--	--	--	--
Bromobenzene	NV	NV	--	--	--	--	--	--	--	--
Bromodichloromethane	NV	0.71	--	--	--	--	--	--	--	--
Bromoethane	NV	NV	--	--	--	--	--	--	--	--
Bromoform	NV	5.54	--	--	--	--	--	--	--	--
Bromomethane	NV	11.2	--	--	--	--	--	--	--	--
Carbon disulfide	NV	800	NV	400	--	--	--	--	--	--
Carbon tetrachloride	NV	0.63	--	--	--	--	--	--	--	--
Chlorobenzene	NV	160	--	--	--	--	--	--	--	--
Chlorobromomethane	NV	NV	--	--	--	--	--	--	--	--
Chloroethane	NV	NV	--	--	--	--	--	--	--	--
Chloroform	NV	80	--	--	--	--	--	--	--	--
Chloromethane	NV	NV	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	NV	16	NV	160	--	--	--	--	--	--

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

				Location:	GP33	GP33	MW01	MW02	MW03	MW04
				Sample Name:	GP DUP-W-12.0	GP33-W-12.0	MW01-GW-061015	MW02-GW-061015	MW03-GW-061015	MW04-GW-061015
				Collection Date:	4/22/2015	4/22/2015	6/10/2015	6/10/2015	6/10/2015	6/10/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)						
cis-1,3-Dichloropropene	NV	0.44	--	--	--	--	--	--	--	--
Dibromochloromethane	NV	0.52	--	--	--	--	--	--	--	--
Dibromomethane	NV	80	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	NV	1600	--	--	--	--	--	--	--	--
Ethylbenzene	700	800	--	--	--	--	--	--	--	--
Freon 113	NV	240000	--	--	--	--	--	--	--	--
Hexachlorobutadiene	NV	0.56	--	--	--	--	--	--	--	--
Isopropylbenzene	NV	800	--	--	--	--	--	--	--	--
m,p-Xylene	1000[c]	1600[c]	--	--	--	--	--	--	--	--
Methyl iodide	NV	NV	--	--	--	--	--	--	--	--
Methyl tert-butyl ether	20	24.3	--	--	--	--	--	--	--	--
Methylene chloride	5	5.83	--	--	--	--	--	--	--	--
Naphthalene	160	160	--	--	--	--	--	--	--	--
n-Butylbenzene	NV	NV	--	--	--	--	--	--	--	--
n-Propylbenzene	NV	800	NV	NV	--	--	--	--	--	--
o-Xylene	1000[c]	1600[c]	--	--	--	--	--	--	--	--
sec-Butylbenzene	NV	800	NV	NV	--	--	--	--	--	--
Styrene	NV	1600	--	--	--	--	--	--	--	--
tert-Butylbenzene	NV	NV	--	--	--	--	--	--	--	--
Tetrachloroethene	5	21	0.69	22.9	--	--	0.2 U	0.2 U	--	--
Toluene	1000	640	--	--	--	--	--	--	--	--
trans-1,2-dichloroethene	NV	160	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	NV	240	--	--	--	--	--	--	--	--
trans-1,4-Dichloro-2-butene	NV	NV	--	--	--	--	--	--	--	--
Trichloroethene	5	0.54	2.5	1.55	--	--	--	--	--	--
Trichlorofluoromethane	NV	2400	--	--	--	--	--	--	--	--
Vinyl Acetate	NV	8000	--	--	--	--	--	--	--	--
Vinyl chloride	0.2	24	--	--	--	--	--	--	--	--
Xylenes, Total	1000[c]	1600[c]	--	--	--	--	--	--	--	--
SVOCs (ug/l)										
1,2,4-Trichlorobenzene	NV	1.51	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	NV	720	--	--	--	--	--	--	--	--
1,2-Dinitrobenzene	NV	1.6	--	--	--	--	--	--	--	--

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

				Location:	GP33	GP33	MW01	MW02	MW03	MW04
				Sample Name:	GP DUP-W-12.0	GP33-W-12.0	MW01-GW-061015	MW02-GW-061015	MW03-GW-061015	MW04-GW-061015
				Collection Date:	4/22/2015	4/22/2015	6/10/2015	6/10/2015	6/10/2015	6/10/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)						
1,3-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--
1,4-Dinitrobenzene	NV	1.6	--	--	--	--	--	--	--	--
2,3,4,6-Tetrachlorophenol	NV	480	--	--	--	--	--	--	--	--
2,3,5,6-Tetrachlorophenol	NV	NV	--	--	--	--	--	--	--	--
2,3-Dichloroaniline	NV	NV	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	NV	800	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	NV	3.98	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	NV	24	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	NV	160	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	NV	32	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	NV	32	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	NV	16	--	--	--	--	--	--	--	--
2-Chloronaphthalene	NV	640	--	--	--	--	--	--	--	--
2-Chlorophenol	NV	40	--	--	--	--	--	--	--	--
2-Methylphenol	NV	400	--	--	--	--	--	--	--	--
2-Nitroaniline	NV	160	--	--	--	--	--	--	--	--
2-Nitrophenol	NV	NV	--	--	--	--	--	--	--	--
3- & 4-Methylphenol	NV	NV	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	NV	0.19	--	--	--	--	--	--	--	--
3-Nitroaniline	NV	NV	--	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	NV	NV	--	--	--	--	--	--	--	--
4-Bromophenylphenyl ether	NV	NV	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	NV	NV	--	--	--	--	--	--	--	--
4-Chloroaniline	NV	0.22	--	--	--	--	--	--	--	--
4-Chlorophenylphenyl ether	NV	NV	--	--	--	--	--	--	--	--
4-Nitroaniline	NV	NV	--	--	--	--	--	--	--	--
4-Nitrophenol	NV	NV	--	--	--	--	--	--	--	--
Aniline	NV	7.68	--	--	--	--	--	--	--	--
Benzidine	NV	0.00038	--	--	--	--	--	--	--	--
Benzyl alcohol	NV	800	--	--	--	--	--	--	--	--
Bis(2-chloroethoxy)methane	NV	NV	--	--	--	--	--	--	--	--
Bis(2-chloroethyl)ether	NV	0.04	--	--	--	--	--	--	--	--

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

				Location:	GP33	GP33	MW01	MW02	MW03	MW04
				Sample Name:	GP DUP-W-12.0	GP33-W-12.0	MW01-GW-061015	MW02-GW-061015	MW03-GW-061015	MW04-GW-061015
				Collection Date:	4/22/2015	4/22/2015	6/10/2015	6/10/2015	6/10/2015	6/10/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)						
Bis(2-chloroisopropyl)ether	NV	NV	--	--	--	--	--	--	--	--
Bis(2-ethylhexyl)phthalate	NV	6.25	--	--	--	--	--	--	--	--
Butylbenzylphthalate	NV	46.10	--	--	--	--	--	--	--	--
Carbazole	NV	NV	--	--	--	--	--	--	--	--
Di(2-ethylhexyl)adipate	NV	72.92	--	--	--	--	--	--	--	--
Dibenzofuran	NV	16	--	--	--	--	--	--	--	--
Diethyl phthalate	NV	12800	--	--	--	--	--	--	--	--
Dimethyl phthalate	NV	NV	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	NV	1600	NV	NV	--	--	--	--	--	--
Di-n-octyl phthalate	NV	NV	--	--	--	--	--	--	--	--
Hexachlorobenzene	NV	0.05	--	--	--	--	--	--	--	--
Hexachlorobutadiene	NV	0.56	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	NV	48	--	--	--	--	--	--	--	--
Hexachloroethane	NV	3.13	--	--	--	--	--	--	--	--
Hydrazine, 1,2-diphenyl	NV	0.11	--	--	--	--	--	--	--	--
Isophorone	NV	46.05	--	--	--	--	--	--	--	--
m-Dinitrobenzene	NV	1.6	--	--	--	--	--	--	--	--
Nitrobenzene	NV	16	--	--	--	--	--	--	--	--
N-Nitrosodimethylamine	NV	0.064	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	NV	NV	--	--	--	--	--	--	--	--
N-Nitrosodipropylamine	NV	NV	--	--	--	--	--	--	--	--
Pentachlorophenol	NV	0.22	--	--	--	--	--	--	--	--
Phenol	NV	2400	--	--	--	--	--	--	--	--
Pyridine	NV	8	--	--	--	--	--	--	--	--
PAHs (ug/l)										
1-Methylnaphthalene	NV	1.51	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	32	NV	--	--	--	--	--	--	--
Acenaphthene	NV	960	--	--	--	--	--	--	--	--
Acenaphthylene	NV	NV	--	--	--	--	--	--	--	--
Anthracene	NV	4800	--	--	--	--	--	--	--	--
Benzo(a)anthracene	NV	0.12	0.0028	--	--	--	**0.0099**	0.0096 U	--	--
Benzo(a)pyrene	0.1	0.01	0.0028	--	--	--	0.0095 U	0.0096 U	--	--
Benzo(b)fluoranthene	NV	0.12	0.0028	--	--	--	0.0095 U	0.0096 U	--	--

Table 5
Groundwater Analytical Results
Northern State Hospital
Port of Skagit
Sedro-Woolley, Washington

				Location:	GP33	GP33	MW01	MW02	MW03	MW04
				Sample Name:	GP DUP-W-12.0	GP33-W-12.0	MW01-GW-061015	MW02-GW-061015	MW03-GW-061015	MW04-GW-061015
				Collection Date:	4/22/2015	4/22/2015	6/10/2015	6/10/2015	6/10/2015	6/10/2015
	MTCA A CUL	MTCA B CUL	Surface Water ARAR	Screening Level for Protection of Indoor Air (MTCA B)						
Benzo(ghi)perylene	NV	NV	--	--	--	--	--	--	--	--
Benzo(j+k)fluoranthene	NV	1.2	--	--	--	--	0.0095 U	0.0096 U	--	--
Chrysene	NV	12	0.0028	--	--	--	0.0095 U	0.0096 U	--	--
Dibenzo(a,h)anthracene	NV	0.01	--	--	--	--	0.0095 U	0.0096 U	--	--
Dibenzofuran	NV	16	--	--	--	--	--	--	--	--
Fluoranthene	NV	640	--	--	--	--	--	--	--	--
Fluorene	NV	640	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	NV	0.12	--	--	--	--	0.0095 U	0.0096 U	--	--
Naphthalene	160	160	4713	--	--	--	--	--	--	--
Phenanthrene	NV	NV	--	--	--	--	--	--	--	--
Pyrene	NV	480	830	--	--	--	--	--	--	--
Total Benzofluoranthenes	NV	--	--	--	--	--	--	--	--	--
Total Naphthalenes	160	--	4713	--	--	--	--	--	--	--
cPAH TEQ	0.1	--	0.0028	--	--	--	**0.00099**	ND	--	--
TPH Identification (Presence/Absence)										
Gasoline	NV	NV	NV	NV	--	--	--	--	--	--
Diesel	NV	NV	NV	NV	--	--	--	--	--	--
Lube Oil	NV	NV	NV	NV	--	--	--	--	--	--
TPH (ug/l)										
Gasoline	1000[d]	NV	NV	NV			--	--	--	--
Diesel	500	NV	NV	NV	260 U	270 U	--	--	--	--
Lube Oil	500	NV	NV	NV	420 U	430 U	--	--	--	--
Heavy Oils (Diesel + Lube Oil)	500	NV	NV	NV	420 U	430 U	--	--	--	--

NOTES:

Detected results are indicated by bold font.

Data are compared to MTCA A CULs. When a MTCA A value was not available, data were compared to the MTCA B CUL. Non-detect data are not compared to a CUL.

MTCA B cleanup levels are provided. Lower of the Method B Cancer and Non Cancer is shown.

The minimum applicable surface water ARAR is provided for each detected constituent.

Screening levels for protection of indoor air to MTCA Method B cleanup levels are provided for all detected volatile organic compounds.

Results that exceed all cleanup levels are shaded. Non-detect results are not evaluated against cleanup criteria.

Results that exceed just surface water criteria are highlighted.

Calculated sums use the highest non-detect value when all consituents are non-detect. When detect and non-detect values are summed, zero is used for non-detect values.

-- = not analyzed.

ARAR = applicable or relevant and appropriate requirements.

cPAH TEQ = carcinogenic PAH toxic equivalency quotient.

CUL = cleanup level.

ft bgs = feet below ground surface.

J = the result is an estimated value.

mg/kg = milligrams per kilogram.

MTCA = Model Toxics Control Act.

ND = non-detect value.

NV = no value.

PCB = polychlorinated biphenyl.

PAH = polycyclic aromatic hydrocarbon.

SVOC = semivolatile organic compound.

Total PCB Aroclors = sum of all PCB aroclors.

Total Naphthalenes = sum of 1-methylnaphthalene, 2-methylnaphthalene, and naphhtalene.

TPH = total petroleum hydrocarbon.

U = the result is non-detect.

[a] MTCA Method A CUL used for surface water ARAR based on Washington State background conditions Table 720-1 of WAC 173-340-900.

[b] Value is for chromium III.

[c] m-xylene and o-xylene MTCA cleanup level is for xylenes.

[d] MTCA cleanup level is for gasoline range organics with no detectable benzene present.

[e] Dissolved metal results are screened against total metal cleanup levels.

Table 6
Groundwater Natural Attenuation Parameters
Northern State Hospital Property
Port of Skagit
Sedro-Woolley, WA

Location:	GP24	GP26	GP27
Sample Name:	GP24-W-18.0	GP26-W-12.5	GP27-W-10.0
Collection Date:	4/21/2015	4/21/2015	4/22/2015
Anions (ug/l)			
Calcium	**21000**	--	--
Chloride	--	--	**7200**
Ferrous Iron	**1000**	--	--
Magnesium	**29000**	--	--
Manganese	**230**	--	--
Nitrate	**900**	50 U	**560**
Total Organic Carbon	1 UJ	--	--
Groundwater Parameters			
pH	7.1	7.13	7.17
Temperature (°C)	13.8	12.5	12.4
Conductivity	309	500	301
Turbidity	NA	753	NA

NOTES:

-- = analyses not performed.

°C = degrees Celsius.

NA = not available.

U = the result is nondetect.

ug/l = micrograms per liter.

Table 7
Sub-Slab Soil Gas Analytical Results
Northern State Hospital Property
Port of Skagit
Sedro-Woolley, Washington

	Location:	GP31
	Sample Name:	GP31-BV-0.5
	Collection Date:	4/22/2015
	Method B Soil Gas Screening Level*	
Chlorinated VOCs (ug/m^3)		
1,1-Dichloroethene	3,050	0.62 U
cis-1,2-Dichloroethene	NV	0.62 U
Tetrachloroethene	321	**100**
trans-1,2-dichloroethene	NV	0.62 U
Trichloroethene	12.3	0.84 U
Vinyl chloride	9.33	0.4 U

NOTES:

Detections are in **bold** font.

Results that exceed screening levels are shaded. Non-detect results are not evaluated against screening levels.

The lower of available carcinogen or non-carcinogen screening level is used.

NV = no value.

U = the result is non-detect.

ug/m^3 = micrograms per cubic meter.

VOC = volatile organic compound.

*Soil gas screening levels are for sub-slab soil vapor for protection of indoor air to Model Toxics Control Act Method B cleanup levels.

Table 8
Conceptual-Level Cost Estimate
Laundry Building Area of Concern
Northern State Hospital Property
Sedro-Woolley, Washington

MONITORED NATURAL ATTENUATION OPTION

Remedy components involves containment of contaminated soil, monitored natural attenuation, and institutional co

1) The existing AOC near the former laundry building is currently covered in asphalt.
2) 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 (ten 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
Contingency	30%			$ 6,765
Total Design, Permitting, Construction				**$ 31,232**
Annual Operation & Maintenance				
Compliance Monitoring	4	EA	$ 5,000	$ 20,000
Quarterly groundwater sampling, analysis, and reporting				
Site Inspections and Maintenance	1	LS	$ 2,500	$ 2,500
Total Operation & Maintenance per year				**$ 22,500**
Periodic Costs				
Contingency	15%			$ 3,375
5-year Reviews and Reporting	1	EA	$ 5,000	$ 5,000

PRESENT VALUE ANALYSIS, MONITORED NATURAL ATTENUATION

Discount Rate	0.9%
Total Years	10

COST TYPE	YEAR	TOTAL COST	TOTAL COST PER YEAR	DISCOUNT FACTOR	NET PRESENT VALUE
Capital	0	$ 31,232	$ 31,232	1.000	$ 31,232
Annual O&M	1 - 10	$ 225,000	$ 22,500	9.522	$ 214,252
Periodic	5	$ 5,000	$ 5,000	0.956	$ 4,781
Periodic	10	$ 8,375	$ 8,375	0.914	$ 7,657
		$ 269,607			$ 257,922

TOTAL NET PRESENT VALUE OF MNA OPTION **$ 258,000**

NOTES:

Present value analysis uses a 10-year discount rate of 0.9% (http://www.whitehouse.gov/omb/circulars_a094/a94_appx-c).

EA = each.

LS = lump sum.

Table 8
Conceptual-Level Cost Estimate
Laundry Building Area of Concern
Northern State Hospital Property
Sedro-Woolley, Washington

IN SITU BIOREMEDIATION OPTION

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

Assumptions

1) This option assumes one injection event is required and that semiannual monitoring will be implemented.

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

Item	Quantity	Unit	Unit Cost	Cost
Site Preparation				
Mobilization/Demobilization	1	LS	$ 10,000	$ 10,000
Temp. Erosion & Sedimentation Control Measures	1	LS	$ 3,000	$ 3,000
In Situ Bioremediation				
Treatment Area	2,400	CY	$ 15	$ 36,000
Total treatment costs (includes subcontractor, amendment, and injections)				
Professional / Technical Services				
Project Management	10%	--	--	$ 3,900
Remedial Design	20%	--	--	$ 7,800
Construction Management	15%	--	--	$ 5,850
Permitting	1	LS	$ 15,000	$ 15,000
Pre-application meeting, City permits, UIC permit				
Planning Documents	1	LS	$ 10,000	$ 10,000
Drainage / erosion control plans, monitoring plan				
Subtotal				$ 91,550
Tax	8.5%	--	--	$ 7,782
Contingency	30%	--	--	$ 27,465
Total Design, Permitting, Construction				**$ 126,797**
Annual Operation & Maintenance				
Compliance Monitoring	2	EA	$ 5,000	$ 10,000
Semiannual groundwater sampling, analysis, and reporting				
Site Inspections and Maintenance	1	LS	$ 2,500	$ 2,500
Total Annual Operation & Maintenance				**$ 12,500**
Periodic Costs				
Contingency	15%	--	--	$ 1,875
5-year Reviews and Reporting	1	EA	$ 5,000	$ 5,000

PRESENT VALUE TOTAL, IN SITU BIOREMEDIATION OPTION

Discount Rate 0.9%

Total Years 5

COST TYPE	YEAR	TOTAL COST	TOTAL COST PER YEAR	DISCOUNT FACTOR	NET PRESENT VALUE
Capital	0	$ 126,797	$ 126,797	1.000	$ 126,797
Annual O&M	1 - 5	$ 62,500	$ 12,500	9.522	$ 119,029
Periodic	5	$ 5,000	$ 5,000	0.956	$ 4,781
		$ 194,297			$ 250,607

TOTAL NET PRESENT VALUE OF IN SITU BIOREMEDIATION OPTION **$ 251,000**

NOTES:

Present value analysis uses a 5-year discount rate of 0.4% (http://www.whitehouse.gov/omb/circulars_a094/a94_appx-c).

CY = cubic yards.

EA = each.

LS = lump sum.

UIC = underground injection control program.

Table 9
Conceptual-Level Cost Estimate
Power House Building Area of Concern
Northern State Hospital Property
Sedro-Woolley, Washington

MONITORED NATURAL ATTENUATION OPTION

Remedy components involves containment of contaminated soil, monitored natural attenuation, and institutional controls.
1) The existing AOC near the power house building is currently covered in asphalt.
2) 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 (ten 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
Contingency	30%			$ 6,765
Total Design, Permitting, Construction				**$ 31,232**
Annual Operation & Maintenance				
Compliance Monitoring	4	EA	$ 5,000	$ 20,000
Quarterly groundwater sampling, analysis, and reporting				
Site Inspections and Maintenance	1	LS	$ 2,500	$ 2,500
Total Annual Operation & Maintenance				**$ 22,500**
Periodic Costs				
Contingency	15%			$ 3,375
5-year Reviews and Reporting	1	EA	$ 5,000	$ 5,000

PRESENT VALUE ANALYSIS, MONITORED NATURAL ATTENUATION

Discount Rate	0.9%
Total Years	10

COST TYPE	YEAR	TOTAL COST	TOTAL COST PER YEAR	DISCOUNT FACTOR	NET PRESENT VALUE
Capital	0	$ 31,232	$ 31,232	1.000	$ 31,232
Annual O&M	1 - 10	$ 225,000	$ 22,500	9.522	$ 214,252
Periodic	5	$ 5,000	$ 5,000	0.956	$ 4,781
Periodic	10	$ 8,375	$ 8,375	0.914	$ 7,657
		$ 269,607			$ 257,922

TOTAL NET PRESENT VALUE OF MNA OPTION **$ 258,000**

NOTES:
Present value analysis uses a 10-year discount rate of 0.9% (http://www.whitehouse.gov/omb/circulars_a094/a94_appx-c).
EA = each.
LS = lump sum.

Table 9
Conceptual-Level Cost Estimate
Power House Building Area of Concern
Northern State Hospital Property
Sedro-Woolley, Washington

CAPPING OPTION				
Remedy components include containment of contaminated soil via an engineered cap, monitored natural attenuation, and i				
1) Little excavation is required under this option (some soil may be removed to accommodate cap installation).				
2) After placing a demarcation layer, the AOC will be capped and monitored.				
Assumptions				
1) This option assumes that an environmental covenant will be implemented				
2) The cap is approximately 2,000 SF and will be monitored for the length of the remedy (ten years).				
Item	Quantity	Unit	Unit Cost	Cost
Site Preparation				
Mobilization/Demobilization	1	LS	$ 10,000	$ 10,000
Temp. Erosion & Sedimentation Control Measures	1	LS	$ 3,000	$ 3,000
Clearing and Grading	222	SY	$ 5	$ 1,111
Capping and Restoration				
Demarcation Layer	222	SY	$ 2	$ 444
Asphalt Cap	222	SY	$ 50	$ 11,111
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%	--	--	$ 4,616.67
Remedial Design	20%	--	--	$ 9,233.33
Construction Management	15%	--	--	$ 6,925
Subtotal				$ 65,831
Tax	8.5%	--	--	$ 5,596
Contingency	30%	--	--	$ 19,749
Total Design, Permitting, Construction				**$ 91,175**
Annual Operation & Maintenance				
Compliance Monitoring	4	EA	$ 5,000	$ 20,000
Quarterly groundwater sampling, analysis, and reporting				
Site Inspections and Maintenance	1	LS	$ 5,000	$ 5,000
Includes cap inspection and repair				
Total Annual Operation & Maintenance				**$ 25,000**
Periodic Costs				
Site Maintenance				
Cap Replacement/Repair	1	EA	$ 11,111	$ 11,111
Contingency	15%	--	--	$ 1,667
Project Management	10%	--	--	$ 1,278
Professional/Technical Services				
5-year Reviews and Reporting	1	EA	$ 5,000	$ 5,000

Table 9
Conceptual-Level Cost Estimate
Power House Building Area of Concern
Northern State Hospital Property
Sedro-Woolley, Washington

PRESENT VALUE ANALYSIS, CAPPING					
Discount Rate	0.9%				
Total Years	10				
COST TYPE	**YEAR**	**TOTAL COST**	**TOTAL COST PER YEAR**	**DISCOUNT FACTOR**	**NET PRESENT VALUE**
Capital	0	$ 91,175	$ 91,175	1.000	$ 91,175
Annual O&M	1 - 10	$ 250,000	$ 25,000	9.522	$ 238,058
Periodic	5	$ 5,000	$ 5,000	0.956	$ 4,781
Periodic	10	$ 19,056	$ 19,056	0.914	$ 17,422
		$ 365,231			$ 351,437
TOTAL NET PRESENT VALUE OF CAPPING OPTION					**$ 352,000**

NOTES:

Present value analysis uses a 10-year discount rate of 0.9% (http://www.whitehouse.gov/omb/circulars_a094/a94_appx-c).

SY = square yards.

CY = cubic yards.

EA = each.

LS = lump sum.

UIC = underground injection control program.

Table 9
Conceptual-Level Cost Estimate
Power House Building Area of Concern
Northern State Hospital Property
Sedro-Woolley, Washington

EXCAVATION AND BACKFILL WITH BIOREMEDIATION MATERIAL OPTION

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), mixing backfill material with bioremediation amendment

Assumptions

1) Soil density of 1.5 tons per cubic yard

2) AOC area is approximately 2,000 SF.

3) Length of the remedy is assumed to be 5 years. Groundwater monitoring will occur quarterly each year.

Item	Quantity	Unit	Unit Cost	Cost
Site Preparation				
Mobilization/Demobilization	1	LS	$ 15,000	$ 15,000
Temp. Erosion & Sedimentation Control Measures	1	LS	$ 5,000	$ 5,000
Clearing and Grading	222	SY	$ 5	$ 1,111
Excavation and Disposal				
Excavation and Loading	222	CY	$ 35	$ 7,778
Assumes 2,000 SF area with excavation depth of 3 ft bgs				
Off-site Waste Transportation and Disposal	333	TON	$ 50	$ 16,667
Performance Sampling and Analysis	1	LS	$ 10,000	$ 10,000
In Situ Bioremediation				
ORC Amendment	222	CY	$ 300	$ 66,667
6 lb ORC / CY at approximately $50 / lb				
Backfilling Amended Soil	222	CY	$ 51	$ 11,333
Includes compaction in 12" layers				
Asphalt Paving	222	SY	$ 10	$ 2,222
Binder course, 2" thick				
Professional / Technical Services				
Project Management	8%	--	--	$ 7,200.00
Remedial Design	15%	--	--	$ 11,500.00
Construction Management	10%	--	--	$ 7,667
Subtotal				$ 162,144
Tax	8.5%			$ 13,782
Contingency	30%			$ 48,643
Total Design, Permitting, Construction				**$ 224,570**
Annual Operation & Maintenance				
Site Inspections and Maintenance	1	LS	$ 2,500	$ 2,500
Compliance Monitoring				
Grounwater monitoring event	4	EA	$ 5,000	$ 20,000
Total Annual Operation & Maintenance				**$ 22,500**
Periodic Costs				
Professional/Technical Services				
5-year Reviews and Reporting	1	EA	$ 5,000	$ 5,000

Table 9
Conceptual-Level Cost Estimate
Power House Building Area of Concern
Northern State Hospital Property
Sedro-Woolley, Washington

PRESENT VALUE ANALYSIS, EXCAVATION AND BIOREMEDIATION

Discount Rate	0.4%
Total Years	5

COST TYPE	YEAR	TOTAL COST	TOTAL COST PER YEAR	DISCOUNT FACTOR	NET PRESENT VALUE
Capital	0	$ 224,570	$ 224,570	1.000	$ 224,570
Annual O&M	1 - 5	$ 112,500	$ 22,500	9.522	$ 214,252
Periodic	5	$ 5,000	$ 5,000	0.980	$ 4,901
		$ 342,070			$ 443,723

TOTAL NET PRESENT VALUE OF EXCAVATION AND BIOREMEDIATION OPTION **$ 444,000**

NOTES:

Present value analysis uses a 5-year discount rate of 0.4% (http://www.whitehouse.gov/omb/circulars_a094/a94_appx-c).

SY = square yards.

CY = cubic yards.

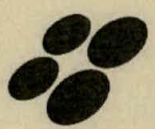
EA = each.

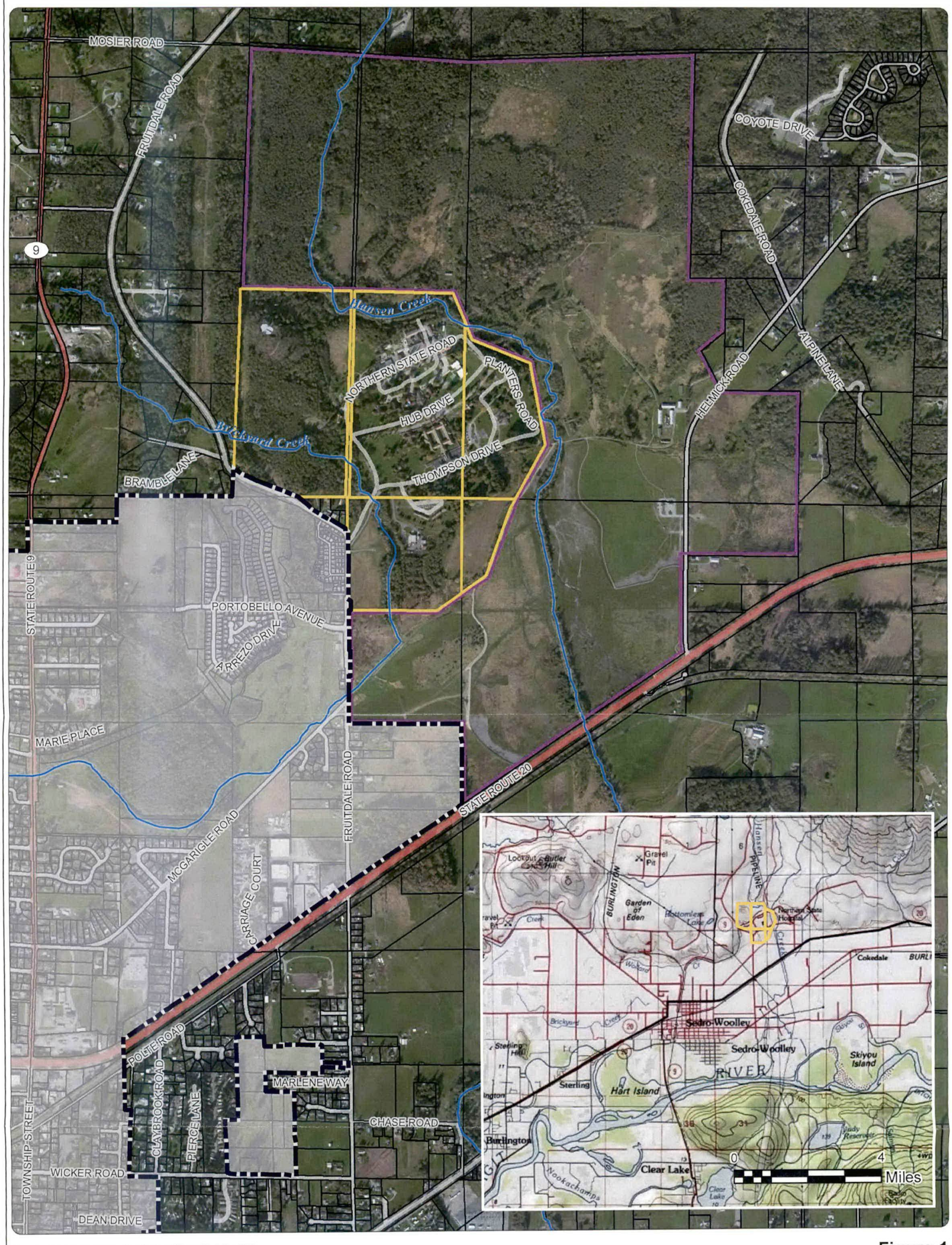
ft bgs = feet below ground surface.

LS = lump sum.

ORC = oxygen release compound

FIGURES





Source: Aerial photograph obtained from Esri ArcGIS Online; parcels and roads and streams datasets obtained from Skagit County; city limits dataset obtained from City of Sedro-Woolley.

Property address:
24909 Hub Drive
Sedro-Woolley, Washington

Legend

- Property Parcel
- Parcel Boundary
- Northern State Recreational Area
- Sedro-Woolley City Limits
- Stream

0 500 1,000
Feet

Figure 1
Property Location

Northern State Hospital Property
Port of Skagit
Sedro-Woolley, Washington

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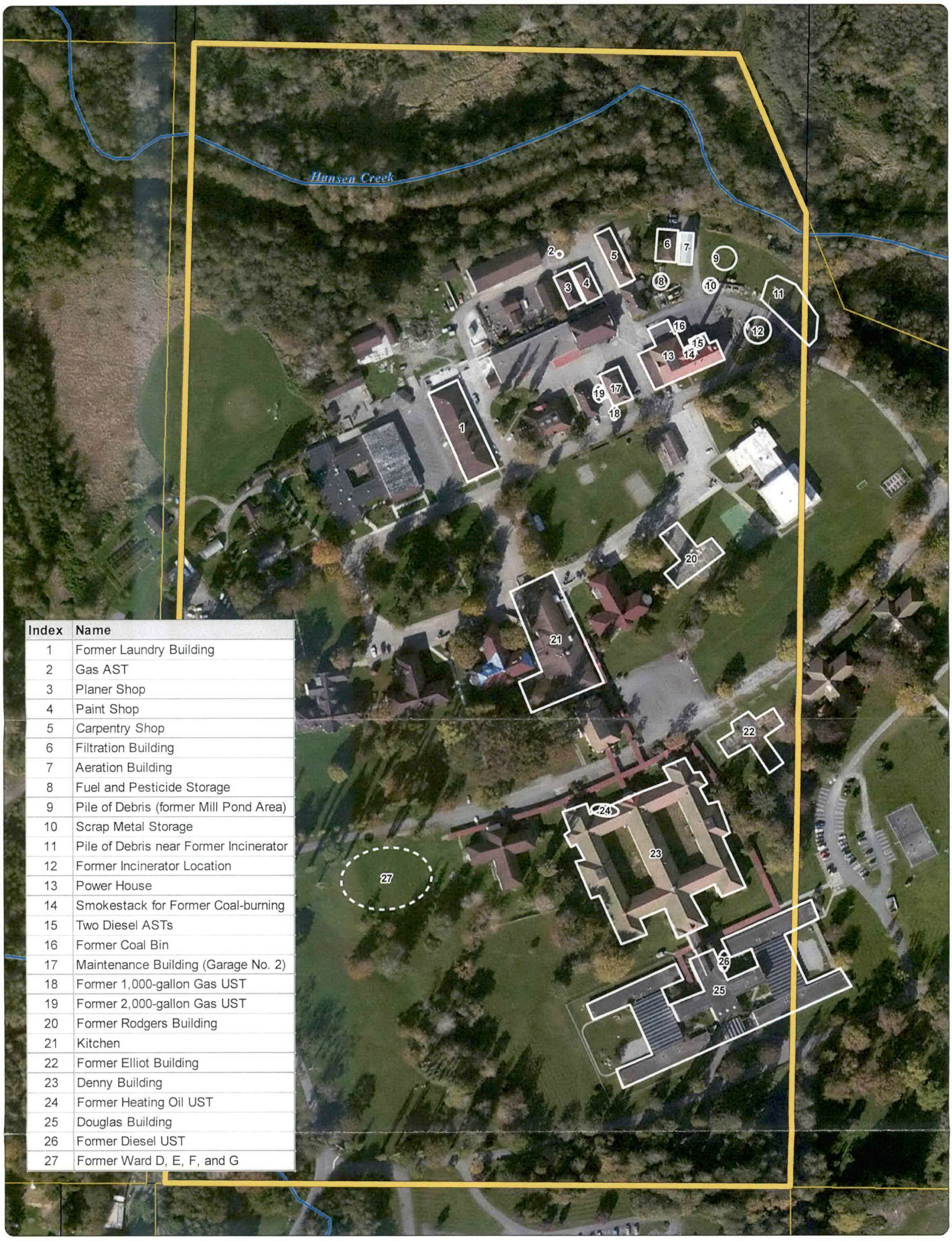
Project: 0624.04.01-01 Produced By: jmiller Approved By: mstringer Print Date: 4/14/2015



Index	Name
1	Former Laundry Building
2	Gas AST
3	Planer Shop
4	Paint Shop
5	Carpentry Shop
6	Filtration Building
7	Aeration Building
8	Fuel and Pesticide Storage
9	Pile of Debris (former Mill Pond Area)
10	Scrap Metal Storage
11	Pile of Debris near Former Incinerator
12	Former Incinerator Location
13	Power House
14	Smokestack for Former Coal-burning
15	Two Diesel ASTs
16	Former Coal Bin
17	Maintenance Building (Garage No. 2)
18	Former 1,000-gallon Gas UST
19	Former 2,000-gallon Gas UST
20	Former Rodgers Building
21	Kitchen
22	Former Elliot Building
23	Denny Building
24	Former Heating Oil UST
25	Douglas Building
26	Former Diesel UST
27	Former Ward D, E, F, and G

Source: Aerial photograph obtained from Esri ArcGIS Online; parcels and streams datasets obtained from Skagit County.

Notes: All property features are approximate.
AST = aboveground storage tank.
UST = underground storage tank.

Legend

- Parcel No. P38607 (1)
- Property Parcel
- Parcel Boundary
- Stream

0 100 200
Feet

Figure 2a
Property Features
Parcel No. P38607 (1)

Northern State Hospital Property
Port of Skagit
Sedro-Woolley, Washington

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Path: X:\0624.04 Port of Skagit\02_Adaptive Reuse Study\Projects\Fig2a_Property Features_Parcel No P38607_1.mxd
Print Date: 1/15/2015
Approved By: mstringer
Produced By: rcallihan
Project: 0624.04.01-01

Source: Aerial photograph obtained from Esri ArcGIS Online; parcels and streams datasets obtained from Skagit County; city limits obtained from City of Sedro-Woolley.

Note: All property features are approximate.

Legend

- Parcel No. P38607 (2)
- Property Parcel
- Parcel Boundary
- City Limits
- Stream

Figure 2b
Property Features
Parcel No. P38607 (2)

Northern State Hospital Property
Port of Skagit
Sedro-Woolley, Washington

0 100 200
Feet

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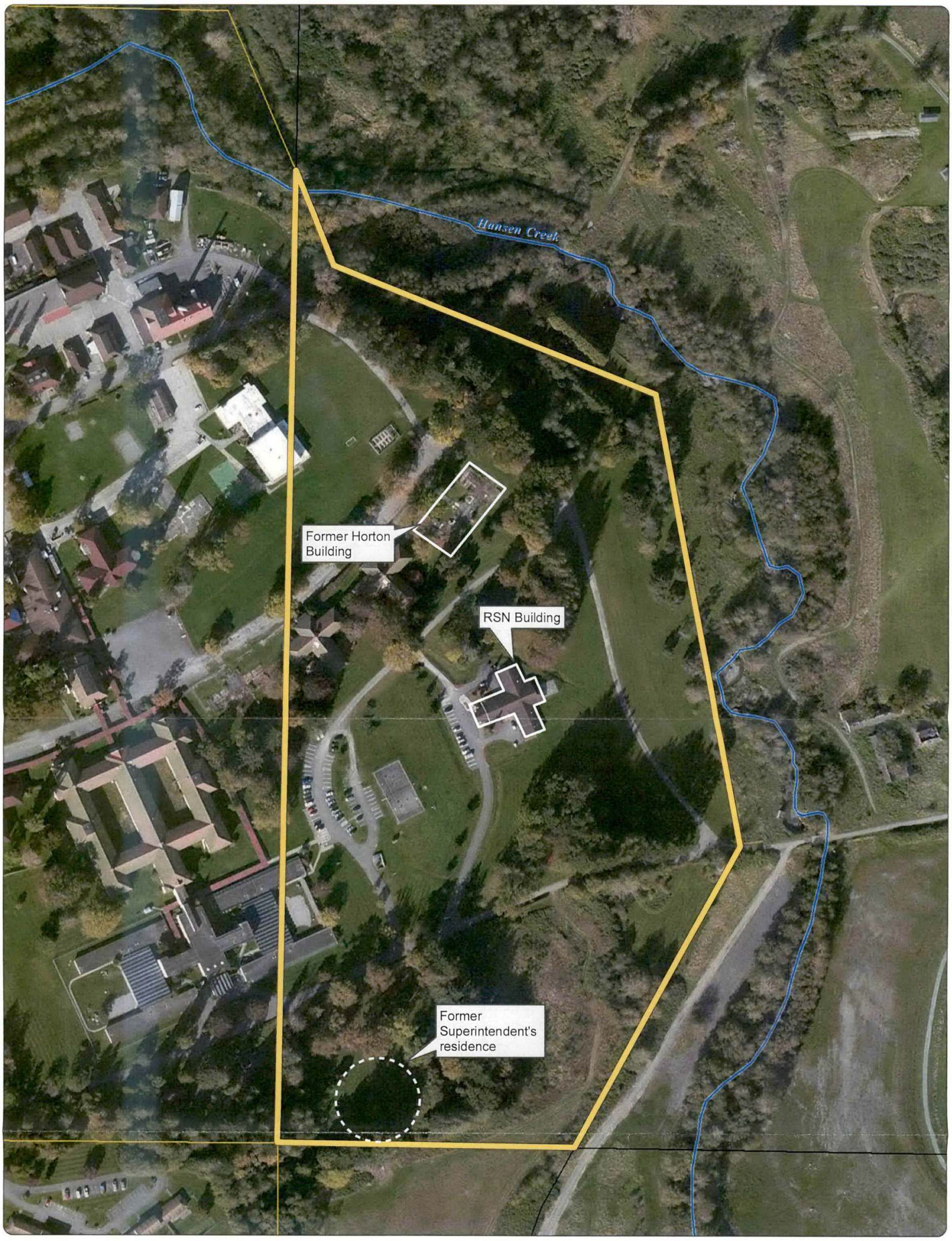
Project: 0624.04.01-01 Produced By: rcallihan Approved By: mstringer Print Date: 11/3/2014



Source: Aerial photograph obtained from Esri ArcGIS Online; parcels and streams datasets obtained from Skagit County.

Note: All property features are approximate.

Legend

- Parcel No. P100632
- Property Parcel
- Parcel Boundary
- Stream

Figure 2c
Property Features
Parcel No. P100632

Northern State Hospital Property
Port of Skagit
Sedro-Woolley, Washington

0 100 200
Feet

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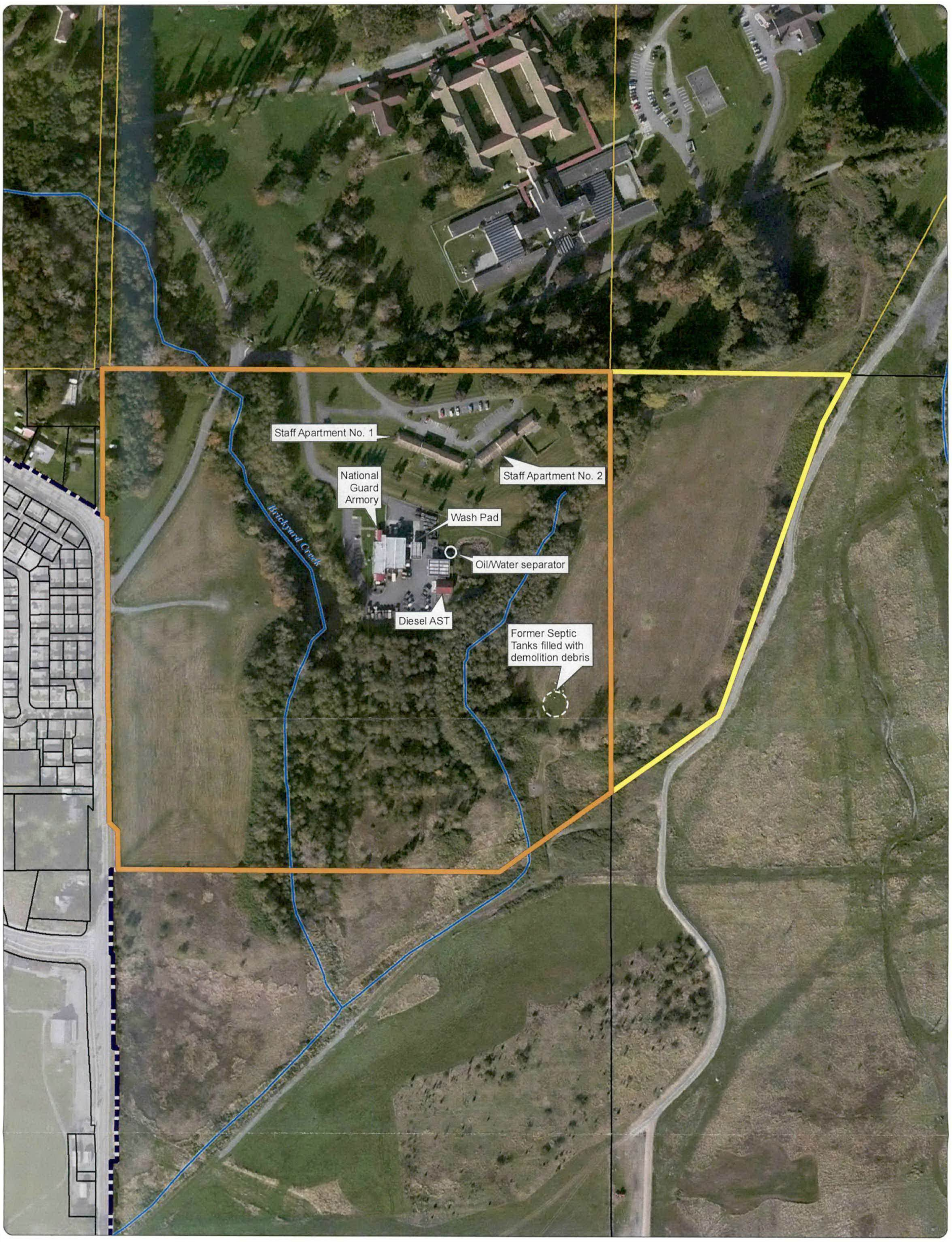
Project: 0624.04.01-01 Produced By: rcallihan Approved By: mstringer Print Date: 1/15/2015

Path: X:\0624.04 Port of Skagit\02_Adaptive Reuse Study\Projects\Fig2d_Site Features Parcel No P39356.mxd



Source: Aerial photograph obtained from Esri ArcGIS Online; parcels and streams datasets obtained from Skagit County; city limits obtained from City of Sedro-Woolley.

Notes: All property features are approximate.
AST = aboveground storage tank.

Legend

- Parcel No. P39356
- Parcel No. P100646
- Property Parcel
- Parcel Boundary
- City Limits
- Stream

Figure 2d
Property Features
Parcels No. P39356 & P100646

Northern State Hospital Property
Port of Skagit
Sedro-Woolley, Washington

0 125 250
Feet

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Project: 0624.04.01-01 Produced By: jmiller Approved By: mstringer Print Date: 4/14/2015

Index	Feature Name
1	Former Laundry Building
2	Gas AST
3	Planer Shop
4	Paint Shop
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6	Filtration Building
7	Aeration Building
8	Fuel and Pesticide Storage
9	Pile of Debris (former Milll Pond Area)
10	Scrap Metal Storage
11	Pile of Debris
12	Former Incinerator Location
13	Power House
14	Smokestack
15	Two Diesel ASTs
16	Former Coal Bin
17	Maintenance Building (Garage No. 2)
18	Former 1000 gallon gas UST
19	Former 2000 gallon gas UST

Figure 3a
Northern Sample Locations

Northern State Hospital Property
Port of Skagit
Sedro-Woolley, Washington

Legend

- Boring Location (Soil)
- Boring Location (Groundwater)
- Boring Location (Soil and Groundwater)
- Monitoring Well Location
- Sub-Slab Vapor Probe (Approximate)
- Hand Auger Location (Approximate)
- Stream
- Transformer Vault

Notes:
*A groundwater sample was proposed at this location, but was unable to be collected due to absence of groundwater in boring.

0 50 100
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; streams dataset obtained from Skagit County.

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Print Date: 6/26/2015
Approved By: H. Hirsch
Produced By: rcallinan
Project: 0624.01

Figure 3b
Southern Sample Locations

Northern State Hospital Property
Port of Skagit
Sedro-Woolley, Washington

Index	Name
20	Former Rodgers Building
21	Kitchen
22	Former Elliot Building
24	Former Heating Oil UST
23	Denny Building
26	Former Diesel UST
25	Douglas Building
27	Former Ward D, E, F, and G
28	Former Superintendents Residence

Legend

- Boring Location (Soil)
- Boring Location (Groundwater)
- Boring Location (Soil and Groundwater)
- Hand Auger Location (Approximate)
- Transformer Vault
- Stream

Notes:
*A groundwater sample was proposed at this location, but was unable to be collected due to absence of groundwater in boring.

0 50 100
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; streams dataset obtained from Skagit County.

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Print Date: 6/26/2015
Approved By: H. Hirsch
Produced By: rcallihan
Project: 0624.01

Figure 4
Background Metals Sample Locations

Northern State Hospital Property
Port of Skagit
Sedro-Woolley, Washington

Legend

- Boring Location (Soil)
- Stream

Notes:

1) *Arsenic concentrations detected at GP36 were determined to be outliers and were excluded from the 90 percent upper confidence limit calculation.
2) AST= aboveground storage tank.
3) UST = underground storage tank.

0 100 200
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; streams dataset obtained from Skagit County.

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Print Date: 7/2/2015
Approved By: H. Hirsch
Produced By: rcallihan
Project: 0624.01

Figure 5
Groundwater Elevation Contours

Northern State Hospital Property
Port of Skagit
Sedro-Woolley, Washington

Legend

- Monitoring Well
- MW01 119.47 ft — Well ID and GW Elevation in NAD27
- Groundwater Elevation Contour (in NAD 1927)
- Groundwater Flow Direction
- Parcel No. P38607

Notes:
1) Monitoring well locations were surveyed by Skagit Surveyors and Engineers on June 23rd, 2015.
2) Water levels measured on June 10, 2015.
3) A spline interpolation was used to create groundwater surface.

0 30 60
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; streams dataset obtained from Skagit County.

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Path: X:\0624.04 Port of Skagit\07_Remedial Investigation and Feasibility Study\Project\Fig5_Groundwater Elevation Contours_2.mxd
Project: 0624.01 Produced By: rcallihan Approved By: H. Hirsch Print Date: 6/30/2015

Figure 6
Preliminary Conceptual Site Model
Northern State Hospital Property
Sedro-Woolley, Washington

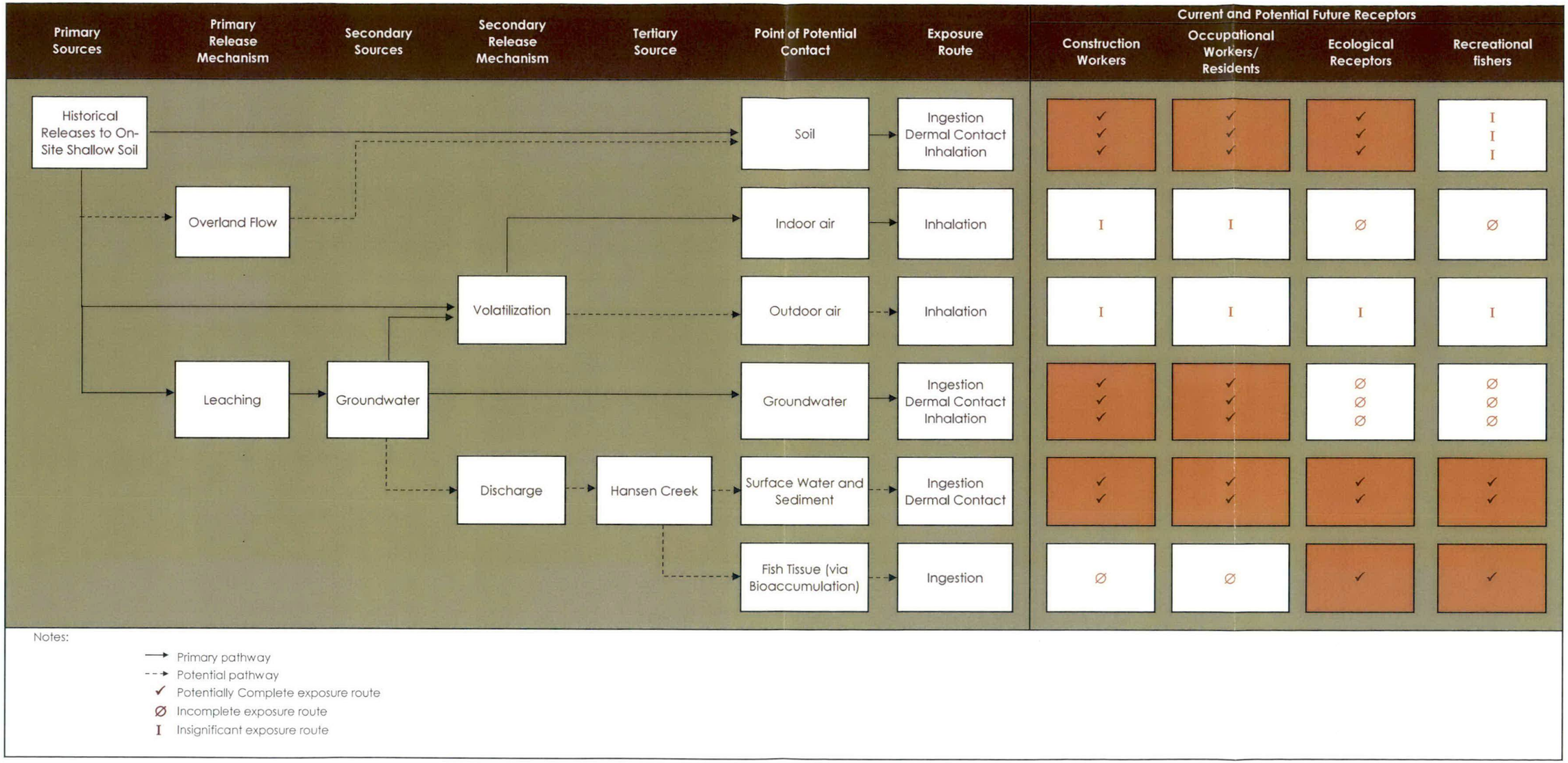
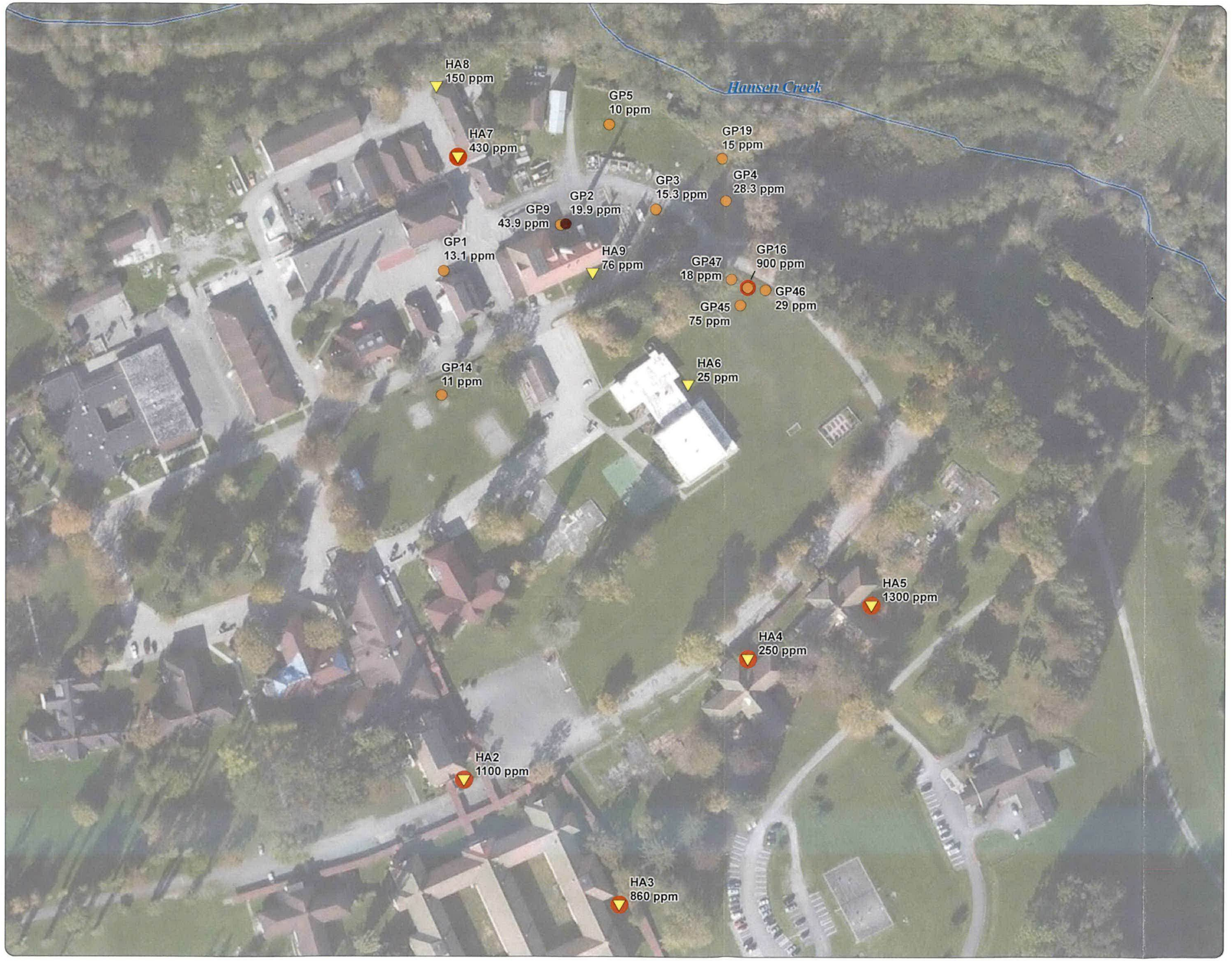


Figure 7
Lead Detections in Soil

Northern State Hospital Property
Port of Skagit
Sedro-Woolley, Washington



Legend

- Boring Location (Soil)
- Boring Location (Soil and Groundwater)
- Hand Auger Location (Approximate)
- Lead Exceedance
- Stream

Notes:
1) Samples were collected on 4/20/15 and 4/23/15.
2) The MTCA Method A CUL for lead is 250 ppm.
3) Hand auger locations are approximate. HA1, HA10, and HA11 were analyzed for PCBs. No detections of PCBs were identified.
4) Borings with undetectable lead levels are not shown.
5) Lead detections shown are the highest detection found at that location, regardless of depth.
6) AST= aboveground storage tank.
7) CUL = cleanup level.
8) MTCA = Model Toxics Control Act.
9) PCB = polychlorinated biphenyl.
10) ppm = parts per million.
11) UST = underground storage tank.

0 100 200
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; streams dataset obtained from Skagit County.

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Project: 0624.01 Produced By: rcallihan Approved By: H. Hirsch Print Date: 6/30/2015

Figure 8
Soil Cleanup Level Exceedances

Northern State Hospital Property
Port of Skagit
Sedro-Woolley, Washington

Index	Feature Name
1	Former Laundry Building
2	Gas AST
3	Planer Shop
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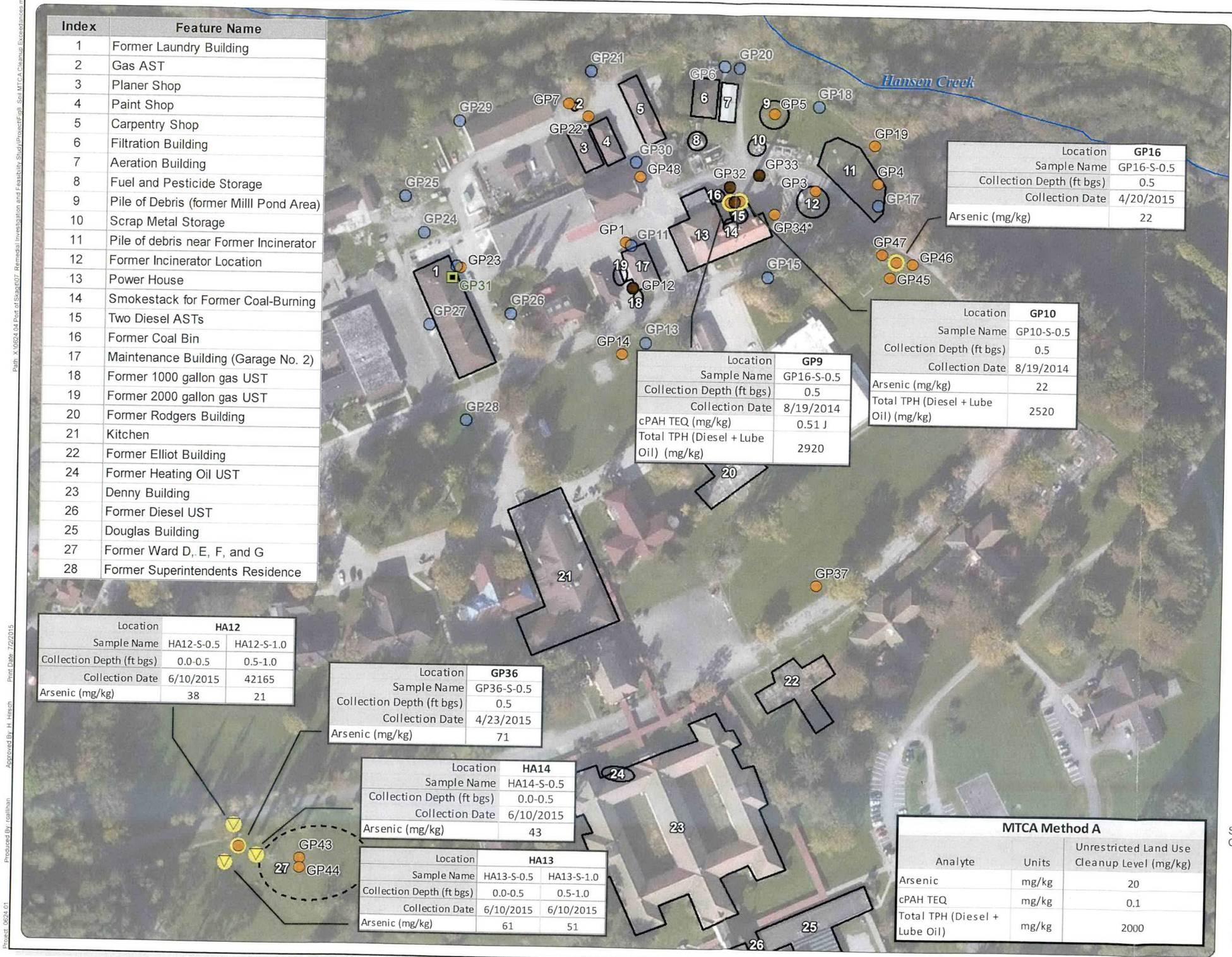
6	Filtration Building
7	Aeration Building
8	Fuel and Pesticide Storage
9	Pile of Debris (former Milll Pond Area)
10	Scrap Metal Storage
11	Pile of debris near Former Incinerator
12	Former Incinerator Location
13	Power House
14	Smokestack for Former Coal-Burning
15	Two Diesel ASTs
16	Former Coal Bin
17	Maintenance Building (Garage No. 2)
18	Former 1000 gallon gas UST
19	Former 2000 gallon gas UST
20	Former Rodgers Building
21	Kitchen
22	Former Elliot Building
24	Former Heating Oil UST
23	Denny Building
26	Former Diesel UST
25	Douglas Building
27	Former Ward D,. E, F, and G
28	Former Superintendents Residence



Location	GP16
Sample Name	GP16-S-0.5
Collection Depth (ft bgs)	0.5
Collection Date	4/20/2015
Arsenic (mg/kg)	22

Location	GP10
Sample Name	GP10-S-0.5
Collection Depth (ft bgs)	0.5
Collection Date	8/19/2014
Arsenic (mg/kg)	22
Total TPH (Diesel + Lube Oil) (mg/kg)	2520

Location	GP9
Sample Name	GP16-S-0.5
Collection Depth (ft bgs)	0.5
Collection Date	8/19/2014
cPAH TEQ (mg/kg)	0.51 J
Total TPH (Diesel + Lube Oil) (mg/kg)	2920

Location	HA12	
Sample Name	HA12-S-0.5	HA12-S-1.0
Collection Depth (ft bgs)	0.0-0.5	0.5-1.0
Collection Date	6/10/2015	42165
Arsenic (mg/kg)	38	21

Location	GP36
Sample Name	GP36-S-0.5
Collection Depth (ft bgs)	0.5
Collection Date	4/23/2015
Arsenic (mg/kg)	71

Location	HA14
Sample Name	HA14-S-0.5
Collection Depth (ft bgs)	0.0-0.5
Collection Date	6/10/2015
Arsenic (mg/kg)	43

Location	HA13	
Sample Name	HA13-S-0.5	HA13-S-1.0
Collection Depth (ft bgs)	0.0-0.5	0.5-1.0
Collection Date	6/10/2015	6/10/2015
Arsenic (mg/kg)	61	51

MTCA Method A

Analyte	Units	Unrestricted Land Use Cleanup Level (mg/kg)
Arsenic	mg/kg	20
cPAH TEQ	mg/kg	0.1
Total TPH (Diesel + Lube Oil)	mg/kg	2000

Legend

- Boring Location (Groundwater)
- Boring Location (Soil and Groundwater)
- Boring Location (Soil)
- Sub-Slab Vapor Probe (Approximate)
- Exceedance
- Feature Index Number

Notes:

1) All property features are approximate.
2) mg/kg = micrograms per kilogram.
3) MTCA = Model Toxics Control Act.
4) CLU = Cleanup Level
5) TPH = total petroleum hydrocarbon
6) cPAH = carcinogenic polycyclic aromatic hydrocarbons
7) TEQ = total equivalence quotient
8) AST= aboveground storage tank.
9) UST = underground storage tank.
10) Maximum detected values that exceed a CUL are shown at each boring.
11) *GP22 and GP34 was proposed to have groundwater collected but encountered refusal and no groundwater.
12) GP1 through GP10 were advanced on August 19, 2014.
13) GP11 through GP 44 were advanced between April 20 and 23, 2015.
14) Lead exceedances are not included on this figure. Please see Figure 7 for lead detections and exceedances.

0 80 160
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; streams dataset obtained from Skagit County.

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Print Date: 7/2/2015
Approved By: H. Hirsch
Produced By: cgallihan
Project: 0624.01

Figure 9
Groundwater Cleanup Level Exceedances

Northern State Hospital Property
Port of Skagit
Sedro-Woolley, Washington

Index	Feature Name
1	Former Laundry Building
2	Gas AST
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9	Pile of Debris (former Milll Pond Area)
10	Scrap Metal Storage
11	Pile of Debris
12	Former Incinerator Location
13	Power House
14	Smokestack
15	Two Diesel ASTs
16	Former Coal Bin
17	Maintenance Building (Garage No. 2)
18	Former 1000 gallon gas UST
19	Former 2000 gallon gas UST

Location	MW02
Sample Name	MW02-GW-061015
Collection Date	6/10/2015
Lead (total) (ug/l)	2.1
Lead (dissolved) (ug/l)	1

Location	GP18
Sample Name	GP18-W-13.0
Collection Date	4/21/2015
Arsenic (dissolved) (ug/l)	15

Location	MW01
Sample Name	MW01-GW-061015
Collection Date	6/10/2015
Arsenic (total) (ug/l)	38
Lead (total) (ug/l)	0.94
Arsenic (dissolved) (ug/l)	37

Location	MW04
Sample Name	MW04-GW-061015
Collection Date	6/10/2015
Arsenic (total) (ug/l)	5
Arsenic (dissolved) (ug/l)	5.6

Location	GP30
Sample Name	GP30-W-20.0
Collection Date	4/22/2015
Arsenic (dissolved) (ug/l)	58

Location	GP2
Sample Name	GP2-W-10.0
Collection Date	8/19/2014
Total Heavy Oils (ug/l)	1740

Location	GP17
Sample Name	GP17-W-13.5
Collection Date	4/20/2015
Arsenic (dissolved) (ug/l)	17

Location	GP8
Sample Name	GP8-W-12.5
Collection Date	8/19/2014
Tetrachloroethene (ug/l)	11

Location	GP15
Sample Name	GP15-W-18.0
Collection Date	4/20/2015
Arsenic (dissolved) (ug/l)	11

Location	MW03
Sample Name	MW03-GW-061015
Collection Date	6/10/2015
Total Arsenic (total) (ug/l)	21
Arsenic (dissolved) (ug/l)	21

Analyte	Units	MTCA Method A CUL	Surface Water ARARs	Indoor Air (MTCA B)
Arsenic	ug/l	5	5	NV
Lead	ug/l	15	0.54	NV
Tetrachloroethene	ug/l	5	0.69	22.9
Total Heavy Oils (Diesel + Lube Oil)	ug/l	500	NV	NV

Legend

- Monitoring Well Location
- Boring Location (Groundwater)
- Boring Location (Soil and Groundwater)
- Boring Location (Soil)
- Sub-Slab Vapor Probe (Approximate)
- Exceedance
- Feature Index Number

Notes:

1) All property features are approximate.
2) ug/L = micrograms per liter.
3) MTCA = Model Toxics Control Act.
4) CUL = Cleanup Level
5) TPH = total petroleum hydrocarbon
6) cPAH = carcinogenic polycyclic aromatic hydrocarbons
7) TEQ = total equivalence quotient
8) NV = no value.
9) "--" = not applicable
10) AST= aboveground storage tank.
11) UST = underground storage tank.
12) Maximum detected values that exceed a CUL are shown at each boring.
13) ARAR = applicable or relevant and appropriate requirement.
14) Total metals and cPAH TEQ exceedances not displayed on figure.
15) GP22 and GP34 was proposed to have groundwater collected but encountered refusal and no groundwater.
16) GP1 through GP10 were advanced on August 19, 2014.
17) GP11 through GP 44 were advanced between April 20 and 23, 2015.
18) * = A groundwater sample was proposed at this location, but was unable to be collected due to absence of groundwater in boring.

0 40 80
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; streams dataset obtained from Skagit County.

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Print Date: 6/30/2015
Approved By: H. Hirsch
Produced By: rcallihan
Project: 0624.01