INTERIM ACTION WORK PLAN

BMT Northwest Site
(also known as Reliable Steel)

1218 West Bay Drive NW

Olympia, Washington

Prepared by
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ACRONYMS AND ABBREVIATIONS

BMPs	best management practices
bgs	below ground surface
BMT-NW	Brown Minneapolis Tank – Northwest
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CAP	Cleanup Action Plan
cPAH	carcinogenic polycyclic aromatic hydrocarbons
CSWGP	Construction Stormwater General Permit (State of Washington)
dCAP	Draft Cleanup Action Plan
Ecology	Washington State Department of Ecology
ESA	Environmental Site Assessment
IA	Interim Action
IAWP	Interim Action Work Plan
ICC	International Code Council
µg/L	micrograms per liter
mg/kg	milligram per kilogram
MTCA	Model Toxics Control Act
NPDES	National Pollutant Discharge Elimination System
PLP	potentially liable person
PAHs	polycyclic aromatic hydrocarbons
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
RI/FS	Remedial Investigation/Feasibility Study
SEPA	State Environmental Policy Act

SWPPP	Stormwater Pollution Prevention Plan
TESC	Temporary Erosion and Sediment Control
TPH-D	total petroleum hydrocarbons – diesel range
TPH-G	total petroleum hydrocarbons – gasoline range
TPH-O	total petroleum hydrocarbons – heavy oil range
UST	underground storage tank
WAC	Washington Administrative Code
XRF	X-ray fluorescence

1.0 Introduction

This document presents the Interim Action Work Plan (IAWP) for a portion of the upland area of the BMT Northwest Site, also known as the Reliable Steel Site (Site). The Site is located at 1218 West Bay Drive NW, on the western shoreline of Budd Inlet, in Olympia, Washington (see below text photos and Figure 1).

This IAWP has been prepared to meet the requirements of the Model Toxics Control Act (MTCA) administered by the Washington State Department of Ecology (Ecology) under Chapter 173-340 of the Washington Administrative Code (WAC). The IAWP would be implemented directly by Ecology under a Public Works Contract. The purpose of the interim action is to perform cleanup actions at two upland areas of the Site that are contributing to groundwater contamination. These actions and locations are listed below:

- Removal of a leaking heating-oil underground storage tank (UST) and associated contaminated soil adjacent to the southwest corner of the Tank Shop Building.

- Removal of metals-contaminated soil beneath the former Maintenance Building.

The location of these areas is shown in Figures 2, 3, and 4.

2.0 Regulatory Basis for the IA

Washington Administrative Code (WAC) 173-340-430(1) states that an interim action is distinguished from a cleanup action in that an interim action only partially addresses the cleanup of a site. This regulation also states that an interim action is:

A. A remedial action that is technically necessary to reduce a threat to human health and the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance at a facility;

B. A remedial action that corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed; or

C. A remedial action needed to provide for completion of a site hazard assessment, remedial investigation/feasibility study, or design of a cleanup action.

The interim action (IA) proposed in this IAWP addresses the cleanup of part of the Site, will substantially reduce the soil-to-groundwater-to-surface water pathway from a leaking heating oil tank and from residual arsenic and copper contamination. The releases from these two areas of the Site also have the potential to become substantially worse if the remedial action is delayed.

WAC 173-340-430(3) also requires that if the cleanup action is known, the interim action shall be consistent with the cleanup action. GeoEngineers (2013a) prepared the draft Cleanup Action Plan (dCAP) for the Site and a public comment period was held from July 26 to August 26, 2013. A responsiveness summary was published by Ecology in October 2013. The dCAP proposed the implementation of remedial Alternative 2, Upland Area Capping and Marine Area Hot Spot Removal. This alternative includes the following cleanup actions:

- Removal of metals-contaminated upland soil and metals debris that are contributing to groundwater exceedances of cleanup levels.
- Removal of gasoline-contaminated soil that may be a source of vapor intrusion.
- Removal of a heating-oil UST and associated diesel contaminated soil.
- Capping the upland area of the Site along with institutional controls.
- Monitoring metals concentrations in groundwater.
- Stormwater collection and conveyance system replacement.
- Hot-spot removal of the most-contaminated sediments in the marine area.
- Monitored natural recovery of contaminated sediments outside the hot spot removal area.
- Implementation of institutional controls.

The actions proposed in this IAWP are consistent with the dCAP in that the IA proposes to implement a portion of the activities proposed in the dCAP. Although the final CAP has not been prepared yet, no changes are expected for the area of the Site affected by this IA. Therefore, the proposed IA should be consistent with the final cleanup action.

3.0 Site History, Previous Investigations, and Regulatory Status

3.1 Site History

Prior to development, the property comprising the Site was a portion of the Budd Inlet shoreline and the majority of the area consisted of intertidal aquatic lands. Site use has consisted of the placement of fill to create additional uplands followed by commercial and industrial activities. The Site was originally developed as a lumber mill. From 1941-2009, the site was used for boat building, steel fabrication, or welding. The Site has been vacant since 2009. Only two buildings are still present at the Site: the Structural Shop and the Paint Shop (Figure 2). In 2010, a fire badly damaged the Tank Shop and so it was demolished in 2011. Due to its structurally unsafe condition, the Maintenance Building was also demolished in 2011.

3.2 Previous Investigations and Regulatory Status

In 1993, an Ecology inspection found arsenic and copper above state standards in sediments near the site. Ecology asked the owners to remove welding slag and debris on the shoreline. Potential environmental concerns were also identified at the Site in an initial environmental compliance audit (Tetra Tech, 1998) and a Phase I Environmental Site Assessment (ESA) conducted by LSI ADaPT (2001). These two investigations were the basis for the subsequent initial environmental investigations that were conducted from 2001 to 2007 by the property owner and prospective purchasers. A detailed summary of these investigations is presented in GeoEngineers (2009).

The Washington State cleanup law, MTCA, requires potentially liable persons (PLPs) to assume responsibility for cleaning up contaminated sites. In 2007, Ecology named BOJO Investments (BOJO, the owner of the Site at the time) and Brown-Minneapolis Tank-NW (BMT-NW, which was a former operator) as PLPs for Site. In 2008, BOJO sold the parcels that comprise the Site to West Bay Reliable – 0508, LLC (West Bay Reliable) and so West Bay Reliable was also named as a PLP. Also in 2008, Ecology and BOJO Investments (BOJO) entered into an Agreed Order (legal agreement) for BOJO to investigate the nature and extent of contamination (remedial investigation), evaluate options for cleanup (feasibility study), and prepare a dCAP. The two other named PLPs (BMT-NW and West Bay Reliable) declined to participate in the Agreed Order.

However, in 2012, BOJO, dissolved as a corporation and ceased to exist without completing the scope of the Agreed Order. As a consequence of the dissolution, Ecology received a payment of $297,518. Therefore, Ecology, with the assistance of its consultant (GeoEngineers), completed

the Agreed Order tasks of preparing the Remedial Investigation/Feasibility Report (RI/FS) and dCAP for the Site (GeoEngineers 2013a, b).

In 2013, Thurston County foreclosed on the Site parcels because West Bay Reliable failed to pay back taxes, interests, and costs. In January 2014, the county sold the parcels at auction to DROGBA LLC (DROGBA). Ecology sent DROGBA a Notice of Potential Liability on March 31, 2014 because they are the current owner of the Site. No response was received from DROGBA during the 30 day response period so Ecology sent DROGBA a PLP determination letter dated May 12, 2014.

In March 2014, Ecology was notified that BMT-NW had filed for bankruptcy. As a result, BOJO, BMT-NW, and West Bay Reliable are no longer viable PLPs to complete the cleanup. Therefore, Ecology plans to negotiate a legal agreement with the new property owner (DROGBA) to clean up the remaining portion of the Site that is not included as part of this IAWP.

4.0 Nature and Extent of Contamination

4.1 General Description of Site Contamination

As discussed in GeoEngineers (2013a), contamination at the Site is present within uplands soil and groundwater, stormwater runoff, and sediments. The remedial investigation locations are shown in Figure 5. The following sections generally describe the type and extent of uplands soil, groundwater, stormwater, and sediments contamination.

4.1.1 Soil Texture and Contamination Extent

As summarized in GeoEngineers (2013a), soil texture beneath the Site generally consists of:

- Gravel fill from the surface to 2 feet below ground surface (bgs). Soil textures range from gravel with sand or silt to silty gravel.
- Silty to sandy fill from 2 feet bgs to depths between 3 feet bgs and 13 feet bgs. This unit is generally gray to olive to brown in color.
- Dredge fill occurs below the silty to sandy fill at depths ranging from 4 to 15 feet bgs. This fill material is gray colored and consists of sand or silty sand with shells.
- Native deposits are encountered below the dredge fill. These deposits are generally composed of gray silt. However, native deposits were also observed to sometimes consist of silty sand or sand with gravel.

Cross-sections illustrating these units are provided in Appendix A along with selected boring logs.

Based on the RI/FS Report (GeoEngineers, 2013b), soil in the following areas contain contaminant concentrations greater than the applicable cleanup levels:

- Maintenance Building: The Maintenance Building was demolished in 2011 by the owner (West Bay Reliable). The area within the footprint of this former building contains arsenic, cadmium, and lead at concentrations greater than cleanup levels (*see* Figure 6). The vertical extent is estimated to be from the surface to a depth of approximately 2 feet bgs. Two small areas within and adjacent to the building footprint contain total petroleum hydrocarbons – gasoline range (TPH-G) contamination above soil cleanup levels. (*see* Figure 7) This TPH-G contamination is also assumed to contain benzene, toluene, ethylbenzene, and total xylenes (BTEX) above soil cleanup levels and at concentrations that would result in indoor air vapor intrusion. The vertical extent of TPH-G/BTEX contamination is estimated to be at depths ranging from approximately 6 feet bgs (area within the building footprint) to approximately 13 feet bgs (adjacent to the north side of the building).

- Tank Shop Leaking Heating-Oil UST: In 2010, a fire badly damaged the Tank Shop Building. As a result, the city of Olympia condemned the building and it was demolished in 2011. A leaking 300-gallon heating oil UST is apparently still located near the former office entrance, near the southwest corner of the building. Concentrations of total petroleum hydrocarbons – diesel range (TPH-D) exceed cleanup levels in the vicinity of this tank (*see* Figure 8). The depth of contamination is estimated to be from 4 to 10 feet bgs.

- Crane Shed: The Crane Shed was also demolished in 2011. This shed was formerly located at the southeast corner of the Maintenance Building. Shallow (surface to 2 feet bgs) TPH-D and total petroleum hydrocarbons – heavy oil range (TPH-O) soil contamination is present associated with an area of stained soil. (*see* Figure 8).

- Structural Shop: A relatively small area on the north side of the Structural Shop has TPH-O contamination from the surface to a depth of 4 feet bgs. (*see* Figure 8). A former shear machine in the Structural Shop is the likely source of this contamination.

- Paint Shop: An area to the east of the Paint Shop contains TPH-D contamination beginning at a depth of 1 foot bgs to approximately 9 feet bgs (*see* Figure 8). An area that contains concentrations of mercury and lead is also present on the east side of the Paint Shop (*see* Figure 6).

- Sitewide: Soil throughout most of the Site contains concentrations of carcinogenic polycyclic aromatic hydrocarbons (cPAHs) above cleanup levels (see

Figure 9). The vertical extent is estimated to be from the surface to depths of between 2 to 7 feet bgs.

- Shoreline: Metals debris in soils at the shoreline of the Site have concentrations of arsenic, cadmium, and lead greater than soil cleanup levels (*see* Figure 6). The vertical extent is estimated to be from the surface to a depth of approximately 3 feet bgs.

4.1.2 Groundwater

The Site has a total of nine groundwater monitoring wells, designated MW-1 though -9. Depth to groundwater is generally within 2.5 to 4.5 feet bgs and the flow direction is east or northeast (to Budd Inlet). Based on the RI/FS Report (GeoEngineers, 2013b), groundwater in the following areas of the Site contains contaminant concentrations greater than the applicable cleanup levels:

- Downgradient of the Maintenance Building: Dissolved metals samples from monitoring wells MW-6, -7, and -8 contained arsenic and copper concentrations above cleanup levels. These wells are located in the general area where metals debris are present in the soil and are also located hydraulically downgradient of the Maintenance Building.

- Heating Oil UST: Monitoring well MW-4 is located near the heating oil UST. A sample from this well collected in 2008 showed TPH-D and –O concentrations of 61,000 micrograms per liter (µg/L) and 3,300 µg/L, respectively; this is significantly above the cleanup level of 500 µg/L. A sample collected from this well in 2010 was below cleanup levels. However, residual contaminated soil associated with the UST has the potential to continue to impact groundwater.

4.1.3 Stormwater

As discussed in GeoEngineers (2013a), stormwater drainage features at the Site include catch basins, two drainage ditches, and four stormwater outfalls. GeoEngineers (2013b) concluded that stormwater runoff from the four outfalls (designated SW-1 through -4 on Figure 5) contains lead, mercury, zinc, and/or copper concentrations greater than the screening levels. Stormwater runoff from SW-1 also contains polycyclic aromatic hydrocarbons (PAHs) at concentrations greater than screening levels (GeoEngineers, 2013a). As shown on Figures 2 and 5, one of the outfalls (SW-4) is a 30-inch diameter corrugated steel pipe that begins at the east end of the former Maintenance Building and extends to the shoreline. A 15-inch diameter stormwater pipe also daylights at the west end of the former building (*see* Figure 2).

4.1.4 Sediments

Constituents that exceed sediment concentrations include mercury, TPH-D and –O, PAHs, and phthalates. Since the scope of the IAWP is limited to the uplands, sediments will not be discussed further.

4.2 Discussion of IA Area Soil Contamination

As mentioned in Section 1.0, the purpose of the interim action is to perform cleanup actions at two upland areas (former Maintenance Building and Tank Shop heating oil UST). The following sections describe in more detail the distribution of contamination at these locations.

4.2.1 Maintenance Building

The Maintenance Building was primarily used for servicing facility vehicles and equipment. LSI ADaPT (2001) noted the presence of several 55-gallon drums; their contents included: waste oil, new oil (hydraulic, lubricant, and transmission), and tank coating chemicals. A small pit ("maintenance pit") was used to remove oil from vehicles; the location of this pit is shown on Figure 5. This building also had housed a paint shop in the southwest corner of the building. The floor of the paint shop was partially covered with overspray paint and epoxy tank coating (LSI ADaPT, 2001). Several metal working machines were also present that were observed to have minor to moderate petroleum staining on the floor beneath and adjacent to the machines (LSI ADaPT, 2001). This building previously had a plank floor that through time developed holes and cracks, many of which were large enough that required covering with steel plates. These holes and cracks are thought to be the reason that metals debris became concentrated below the floor into the dirt crawl space below. This also may explain why the metals concentrations in the upper 2 feet of soil within the building footprint vary in concentration. Table 1 shows the metals concentrations for samples collected within or adjacent to the building footprint. As shown on Table 1, six out of the nine samples collected within the upper 2 feet bgs exceeded the applicable cleanup levels for arsenic, cadmium, and/or lead or showed significantly elevated copper concentrations above the Washington State median background value (Ecology, 2008) of 17 milligrams per kilogram (mg/kg). Maximum observed concentrations within the upper 2 feet bgs for these samples are as follows: arsenic (31.6 mg/kg), cadmium (2.87 mg/kg), lead (1,540 mg/kg), and copper (828 mg/kg).

Four soil samples were collected and analyzed for TCLP metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) and one sample (A3) was collected from the area of the former Maintenance Building (GeoEngineers, 2013b). The TCLP metals concentrations detected in all four samples were less than the Toxicity Characteristic criteria specified in the Dangerous Waste Regulations (WAC 173-303-090).

A small area at the east end of the building (samples S-24 and P-1) had elevated concentrations of TPH-G, TPH-D and –O, and lead (*see* Figure 7). Table 2 shows the TPH concentrations for selected samples collected within and near the footprint of the

Maintenance Building. As shown on Tables 1 and 2, observed concentrations for samples S-24 and P-1 are: TPH-G (sample S-24; 490 mg/kg), TPH-D plus –O (sample S-24; 1,700 mg/kg), and lead (sample P1; 518 mg/kg). The maximum depth of TPH-G contamination associated with this location is believed to be 6 feet bgs.

GeoEngineers (2013b) estimated that the total volume of metals-contaminated soil beneath the Maintenance Building is approximately 770 cubic yards. The estimated volume of TPH-G contamination at the S-24 sample location is less than 70 cubic yards.

4.2.2 Tank Shop Heating Oil UST

As shown on Figure 8, the estimated aerial extent of contamination from the 300-gallon heating oil UST is shown as an elliptical shape that is approximately 50 feet wide by 65 feet long. Soil sample results in the vicinity of this UST are shown in Table 3. Maximum observed concentrations for TPH-D in this area is 16,500 mg/kg at a depth of 5 feet bgs. However, the extent of contamination is assumed to extend to a maximum depth of 10 feet bgs. GeoEngineers (2013b) estimated that the total volume of TPH-D contaminated soil beneath associated with the UST is approximately 680 cubic yards.

5.0 Interim Action Description and Implementation

As stated in Section 1.0, the IAWP would be implemented directly by Ecology under a Public Works Contract. The purpose of the interim action is to perform cleanup actions at two upland areas of the Site that are contributing to groundwater contamination. These actions and locations are listed below:

- Removal of a leaking heating-oil UST and associated contaminated soil adjacent to the southwest corner of the Tank Shop Building.

- Removal of metals-contaminated soil beneath the former Maintenance Building that are a source to groundwater contamination. Gasoline-contaminated soil beneath the east end of the building associated with sample S-24 will also be removed.

Implementation of the IAWP will require the completion of the following tasks.

- Permits
- Mobilization and Site Preparation
- Health and Safety/Site Access Control
- Surveying
- Decommission and Repair Groundwater Monitoring Wells
- Protection of Remaining Monitoring Wells and Stormwater Pipes
- Temporary Erosion and Sediment Control/Stormwater Pollution Prevention
- Management of Stormwater Pipe Influent

- Piling and Foundation Removal
- UST Decommissioning
- Soil Excavation and Disposal
- Soil Stockpile Management
- Construction Dewatering
- Sampling and Analysis
- Clean Material Import and Backfill

These tasks will be described in more detail in the following sections:

5.1 Permits

The Cleanup Action will be conducted as an Ecology-led action and thus will meet the permit exemption provisions of MTCA (WAC 173-340-710[9]). This means that although the procedural requirements of most State and local laws are exempted, there remains the requirement that the Cleanup Action comply with the substantive requirements of these laws. Additionally, the exemption is not applicable if Ecology determines that the exemption would result in the loss of approval from a federal agency that may be necessary for the state to administer any federal law. For example, the requirement for a State of Washington Construction Stormwater General Permit (CSWGP) is not exempt (see below).

The State Environmental Policy Act (SEPA) as authorized by the Revised Code of Washington (RCW) 43.21C and WAC 197-11 and other SEPA procedures (WAC 173-802) are intended to ensure that State and local government considers environmental values when making decisions. A SEPA checklist shall be prepared and reviewed by the lead agency (Ecology) as part of the permitting process for the Cleanup Action. Ecology will then issue a determination.

Ecology's Toxics Cleanup Program will also prepare and submit a Notice of Intent for coverage under the CSWGP that governs collection, handling, and discharge of stormwater and construction water during construction activities. Responsibility for the CSWGP will be transferred from Ecology to the Contractor when the public works contract is established. In accordance with the CSWGP, the Contractor will also be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) to be reviewed and approved by Ecology (see also Section 5.7).

A discharge authorization permit shall be requested from the LOTT Alliance if dewatering effluent is to be discharged to the sanitary sewer. LOTT's Budd Inlet Treatment Plant and discharge of treated water to Budd Inlet are regulated under a National Pollutant Discharge Elimination System (NPDES) Permit. LOTT operates under an Ecology-issued NPDES Permit because treated effluent is released into Budd Inlet.

The substantive requirements of all applicable City of Olympia permits (such as Street Use Permit, Traffic Control Plan, Right-of-Way Obstruction, Excavation, and Grading Permits) shall also be met.

Also, a permit will be requested from the Assistant Fire Chief, City of Olympia Fire Department, for the removal of the heating oil underground storage tank.

5.2 Mobilization and Site Preparation

Mobilization and site preparation consists of transporting the necessary construction materials and equipment to the Site and constructing any temporary controls and facilities. These activities may include:

- Site access control (*see* below Section 5.3).
- Installing temporary facilities such as a construction trailer, sanitation, and decontamination facilities.
- Installing erosion control measures (*see* below Section 5.7).
- Establishing equipment staging and laydown areas and clean and contaminated soil stockpile areas (*see* below Section 5.12).
- Pre-excavation surveying (*see* below Section 5.4).

Work will be performed only during hours allowed by the Thurston County municipal code.

5.3 Health and Safety/Site Access Control

The contractor that is hired by Ecology under a Public Works Contract (Contractor) will be responsible for preparing a Project and Work Site-specific Health and Safety Plan (HASP) for the IA. The HASP shall be consistent with the Site HASP that was prepared by GeoEngineers (2009). The Contractor shall submit the plan to Ecology for review and approval a minimum of two weeks prior to commencing excavation work at the Site.

Site excavation work could generate airborne dust. Engineering controls will be used (such as misting/watering exposed soil in traffic areas and covering stockpiles) as necessary to meet Ecology BMPs and to prevent airborne dust emissions.

A photoionization detector (PID) will be used on Site for field screening soil samples. The PID will also be used to occasionally monitor ambient air quality for VOCs as necessary. As stated in the 2009 GeoEngineers HASP, if VOCs are detected at a PID measured concentration of greater than 5 parts per million for 5 minutes in the breathing zone, personnel shall upgrade to a higher level of respiratory protection (respirator with organic vapor filter).

Construction noise will be generated by a variety of construction equipment such as truck engines, generators and other small engines, and earthmoving equipment. Construction noise will be limited to daytime hours and is not expected to create adverse impacts. Construction activities will be carried out in a manner consistent with Thurston County municipal code and State environmental noise standards.

The Contractor will be also responsible for placing temporary perimeter fences around the work area. This fencing will be maintained during work to limit public access to the work area. In addition, traffic and pedestrian control measures will be implemented as necessary for the West Bay Drive public right-of-way during construction. The Site shall be entered and exited from a defined location that includes best management practices (BMPs) to minimize the tracking of soil onto West Bay Drive (such as placement of quarry spalls). BMPs will be implemented consistent with the State Department of Ecology Stormwater Management Manual for Western Washington.

5.4 Surveying

The contractor will survey the excavation area:

1. Prior to excavation to determine the existing topography of the ground surface.

2. After the full extent of excavation at each of the two excavation areas and prior to backfilling for the purpose of developing as-built drawings.

3. Following placement of backfill for the purpose of post-construction reporting.

In 2013, Ecology adopted NAVD88 as the agency's official vertical datum. Therefore, survey work shall use NAVD88 referenced elevations.

5.5 Decommission and Repair Groundwater Monitoring Wells

Groundwater monitoring wells MW-4, MW-6, and MW-7 are within contaminated soil excavation areas for the heating-oil UST and/or Maintenance Building. Therefore, these wells will be decommissioned prior to excavation activities. Decommissioning shall be in accordance with Washington State regulations (WAC 173-160).

Groundwater monitoring wells MW-8 and MW-9 have missing steel well covers. These covers shall be replaced with lids that can be securely fastened. Replacement lids may be new or recycled from one of the three wells that are being decommissioned. However, only new cover gaskets and bolts shall be used. Use of used cover gaskets and bolts is not acceptable.

5.6 Protection of Remaining Monitoring Wells and Stormwater Pipes

The remaining groundwater monitoring wells in the vicinity of the work area (MW-1, MW-2, and MW-8) shall be protected from damage during the IA. Even though these wells are constructed flush with the ground surface, heavy truck or equipment traffic over the top of them could result in damage to the well cover and surrounding concrete seal. Examples of protection measures that may be used include marking the wells with cones or temporary fencing so they are avoided or placement of protective steel plates over the well cover.

The stormwater pipes within and/or below the foundations on the east and west sides of the building are also to remain and shall be protected from damage during piling and foundation removal and soil excavation work.

5.7 Temporary Erosion and Sediment Control/Stormwater Pollution Prevention

The proper control of stormwater runoff and excavation decant water to prevent discharge of contaminants to surface water and groundwater is of critical importance. The Contractor shall be required to plan, install, inspect, maintain, and monitor Temporary Erosion and Sediment Control (TESC) Best Management Practices (BMPs) to prevent pollution of air and water, and control, respond to, and dispose of eroded sediment and turbid water during the duration of the project. Additionally, the Contractor shall implement procedures to minimize stormwater flow damage to the site and equipment.

The Contractor shall designate a TESC Supervisor to be responsible for inspecting the TESC measures and for ensuring that the Contractor's operations are preventing sediment runoff. The minimum qualifications for the TESC-Supervisor include a certification as a Certified Erosion and Sediment Control Lead by a course approved by Ecology.

The Contractor shall prepare and implement an Ecology-approved SWPPP that describes the anticipated construction activities and TESC measures, related pollution prevention measures, inspection/monitoring activities, and record keeping and reporting requirements. The Contractor is responsible for the implementation of the SWPPP and the TESC measures, including monitoring, sampling, testing, and reporting required by the SWPPP and CSWGP.

5.8 Management of Stormwater Pipe Influent

During construction, all stormwater that exits the 15-inch diameter stormwater pipe at the west end of the former Maintenance Building shall be diverted to the 30-inch diameter stormwater pipe at the east end of the former Maintenance Building with temporary pipes that go around the work area. The temporary diversion pipe shall be connected to the 30-inch diameter stormwater pipe to allow the diverted water to exit the 30-inch diameter stormwater pipe to Budd Inlet.

During the higher parts of the tidal cycle, tide water from Budd Inlet enters the 30-inch diameter stormwater pipe and discharges in the area beneath the former Maintenance Building. This water then flows back to the bay as the tide recedes. During construction, the

west end of this pipe shall be plugged to prevent any tide water from entering the construction area. However the east end (adjacent to Budd Inlet) of the pipe shall remain open. This will allow tide water to still enter the pipe and allow the diverted stormwater from the 15-inch stormwater pipe to exit to the bay.

5.9 Piling and Foundation Removal

The former maintenance building was supported by a perimeter foundation and interior wood pilings. These features are shown in Photos 1 through 5. The perimeter foundation is generally concrete on the north and east sides and generally consists of a wooden timber retaining wall on the south and west side. The existing pilings and perimeter foundation for the former Maintenance Building shall be removed prior to and during soil excavation. However, the stormwater pipes within and/or below the foundations on the east and west sides of the building are to remain and shall be protected from damage during piling and foundation removal. The wooden pilings and timber retaining wall may include either treated or non-treated wood. All treated wood that is removed from the Site shall be disposed of at an appropriate disposal facility (such as a permitted municipal solid waste landfill). Untreated wood that has the potential to be contaminated shall also be disposed of at an appropriate disposal facility.

5.10 UST Decommissioning

The work of decommissioning the 300-gallon, heating oil UST includes but is not limited to: excavation of the UST; excavation and disposal of petroleum-contaminated soils; cleaning, removal, and disposal of the tank; backfill of excavations; and site assessment that meets the requirements of WAC 173-360-390. The tank and all contaminated soils shall be taken to an appropriate disposal facility.

A site assessment is an investigation for the presence of a release at that portion of the UST site where the UST system is located. The site assessment must be performed according to Ecology's Guidance for Site Checks and Site Assessments for Underground Storage Tanks (Ecology, 1991). The guidance provides information on required sampling procedures, the number and locations of samples to be obtained, and required laboratory analyses and reporting.

Contractors who perform tank decommissioning are required to have the appropriate certification from the International Code Council (ICC). Site Assessments must be performed by persons certified by the International Code Council (ICC) and registered by Ecology or be a Washington registered professional engineer competent to perform the site assessment.

5.11 Soil Excavation and Disposal

Contaminated soil will be excavated from the beneath the former Maintenance Building and during the removal of the Tank Shop heating-oil UST. The following sub-sections describe in more detail regarding the excavation of these areas. A utility locate shall be performed prior to

excavation.

5.11.1 Former Maintenance Building Soil Excavation and Disposal

As described in Section 4.1, the vertical extent of metals contamination beneath the former Maintenance Building is estimated to be from the surface to a depth of 2 feet bgs. As described in Section 5.8, existing pilings and perimeter foundation will be removed prior to and/or during soil excavation. Following the excavation of soils to a depth of 2 feet bgs, field screening analyses and/or confirmation soil samples for laboratory metals analysis will be collected. Confirmation soil samples will be collected from the sidewalls and base of the excavation. Sample results will be compared to the cleanup levels shown in Table 1. Additional excavation will be performed to remove any soils that exceed cleanup levels until confirmation sample results show that cleanup levels have been achieved.

To the extent possible, the excavation will be cut vertically to minimize the overall size of the excavation. However, if it is determined in the field that additional protective measures are necessary for worker protection then excavation sidewalls will be sloped or benched as appropriate. All sloping and benching shall meet the requirements of WAC 296-155.

As stated in Section 4.2.1, GeoEngineers (2013b) estimated that the total volume of metals contaminated soil beneath the Maintenance Building is approximately 770 cubic yards and that 75% of the total would be designated non-hazardous for waste disposal and the remaining 25% would have a hazardous designation requiring disposal at a Resource Conservation and Recovery Act (RCRA) Subtitle C landfill. Assuming a 20% volume expansion from bank to loose soil, GeoEngineers (2013b) estimated that a total of 1,100 tons of non-hazardous metals-contaminated soil and 370 tons of hazardous metals-contaminated soil would be transported off Site for disposal.

Soil will also be excavated from the S-24/P1 sample location to remove TPH-G contaminated soil down to approximately 6 feet bgs. Confirmation samples will be collected from the sidewalls and base of the excavation and the results will be compared to the cleanup levels shown in Tables 1 and 2. Additional excavation will be performed to remove any soils that exceed cleanup levels until TPH-G, BTEX, and lead confirmation sample results show that cleanup levels have been achieved.

The estimated volume of TPH-G contamination at the S-24 sample location is less than 70 cubic yards. Assuming a 20% volume expansion from bank to loose soil, this would result in an estimate that up to 111 tons of non-hazardous TPH-G contaminated soil would be transported off Site for disposal.

5.11.2 Tank Shop UST Soil Excavation

As described in Section 4.1, the vertical extent of TPH-D contaminated soil that is associated with the heating oil UST is estimated to be from 4 to 10 feet bgs. Field screening (such as odor and staining) will be used to guide the depth of excavation. Following the excavation of soils to a depth of approximately 10 feet bgs and when field screening does not suggest that contamination is present, confirmation soil samples for TPH-D laboratory analysis will be collected. Confirmation soil samples will be collected from the sidewalls and base of the excavation. Sample results will be compared to the TPH-D cleanup level of 2,000 mg/kg. Additional excavation will be performed to remove any soils that exceed the cleanup level until confirmation sample results show that the cleanup level has been achieved.

To the extent possible, the excavation will be cut vertically to minimize the overall size of the excavation. However, if it is determined in the field that additional protective measures are necessary for worker protection, then excavation sidewalls will be sloped or benched as appropriate. All sloping and benching shall meet the requirements of WAC 296-155.

As stated in Section 4.2.2, GeoEngineers (2013b) estimated that the total volume of TPH-D contaminated soil from the tank is approximately 680 cubic yards. Assuming a 20% volume expansion from bank to loose soil, GeoEngineers (2013b) estimated that a total of 1,300 tons of non-hazardous soil and 370 tons would be transported off Site for disposal.

5.12 Soil Stockpile Management

Excavated soil stockpiles will be sampled and analyzed to determine if they need to be transported off Site for disposal or if they can be reused as excavation backfill. Separate storage areas shall be used for contaminated soil and clean import material. All stockpiles shall be stored on plastic sheeting (minimum 20 mil. thickness) and shall be bermed on the sides to contain stormwater. Stockpiled soil shall be covered and secured at all times except during active soil loading and unloading.

Where possible, existing soil analytical data will be used to characterize contaminated soil for disposal. This approach will allow excavated contaminated soil to be transported directly to the disposal facility without further characterization.

Where stockpile characterization sampling is necessary, stockpile sampling will be performed at a frequency consistent with Table 5-3 of Ecology's *Guidance for Site Checks and Site Assessments for Underground Storage Tanks* (Ecology, 1991).

Discrete samples will be collected from various zones and/or depth horizons within the stockpiles as the stockpiles are being constructed to obtain spatially representative samples of the stockpiled material. The stockpile samples will be collected from locations that are generally representative of the soils and where field screening indicates contamination may be

present. To evaluate whether stockpiled overburden soil can be reused on Site as backfill, the stockpile samples will be analyzed for TPH-G, TPH-D, TPH-O, BTEX, cPAHs, and metals. These results of stockpile samples will be compared to the cleanup levels listed in Tables 1, 2, and 3 and the cPAHs MTCA Method A Cleanup Level for Unrestricted Land Uses of 0.1 mg/kg.

5.13 Construction Dewatering

Construction dewatering shall be used as necessary to maintain a dry excavation, to the extent possible, to reduce the water content of excavated soil and to enable verification sampling. Due to the level of hydrocarbon contamination present in the UST excavation area, there is a potential that sheen or free product in groundwater will be encountered during construction. During excavation in wet conditions, water with a sheen or free product will be removed from the excavation using vacuum methods and adsorbent materials (such as adsorbent socks, or pads) will be placed in the excavation to adsorb hydrocarbons released by excavation. Water collected during dewatering will be collected in portable tanks or trucks and transported off Site for disposal at a suitable permitted disposal facility.

The Contractor will also be responsible for collection of water in soil stockpiling areas. In the event that heavy rains occur during project activities, attempts will be made to collect accumulated surface water within the stockpile area. Collected stockpile wastewater will be collected and transported off Site to a suitable permitted disposal facility.

5.14 Sampling and Analysis

Confirmation samples will be collected for laboratory analysis from the base and sidewalls of both excavation areas to verify whether cleanup levels have been achieved and to document concentrations of contaminants remaining at the Site. Excavation backfilling will not be allowed to proceed prior to receiving laboratory and/or field sample results. If equipment is available, field metals analyses will be conducted in the Maintenance Building excavation area using a portable X-ray fluorescence (XRF) detector. The XRF detector will be used to field screen excavation limits for the Maintenance Building prior to collecting samples for laboratory metals analysis. The laboratory soil samples for both excavation areas will be analyzed on a short turnaround basis to assess compliance with Site-specific cleanup levels (Tables 1, 2, and 3) and to minimize contractor standby time. A Sampling and Analysis Plan is provided in Appendix B.

5.15 Clean Material Import and Backfill

Remedial excavations will be backfilled and compacted to surface grade with clean and suitable materials. The grain size of backfill used in the Maintenance Building excavation will be designed to meet Washington State Department of Fish and Wildlife recommendations because this area is open to fish migration.

Stockpiled overburden soil that meets cleanup levels (as shown by stockpile sample results) and that has suitable geotechnical characteristics will be reused as backfill to the extent possible. Imported fill shall be used in the absence of suitable stockpiled overburden. The contractor will provide verification that all imported granular fill materials have been tested and certified to be

free of contaminants at concentrations above the soil cleanup levels listed in Tables 1, 2, and 3. The source for the fill material will be documented in the Contractor's project documents.

6.0 References

GeoEngineers, 2009, *Final Work Plan, Remedial Investigation/Feasibility Study, Reliable Steel Site, 1218 West Bay Drive NW, Olympia Washington*, August 21, 2009, https://fortress.wa.gov/ecy/gsp/CleanupSiteDocuments.aspx?csid=4076.

GeoEngineers, 2013a, *Draft Cleanup Action Plan, Former Reliable Steel Site, 1218 West Bay Drive NW, Olympia Washington*, July 18, 2013, https://fortress.wa.gov/ecy/gsp/CleanupSiteDocuments.aspx?csid=4076.

GeoEngineers, 2013b, *Ecology Draft Final Remedial Investigation/Feasibility Study Report, Former Reliable Steel Site, 1218 West Bay Drive NW, Olympia Washington*, July 18, 2013, https://fortress.wa.gov/ecy/gsp/CleanupSiteDocuments.aspx?csid=4076.

LSI ADaPT, Inc., 2001, Phase I *Environmental Site Assessment, Reliable Steel, Inc., 1218 West Bay Drive, Olympia, Washington*, July 31, 2001.

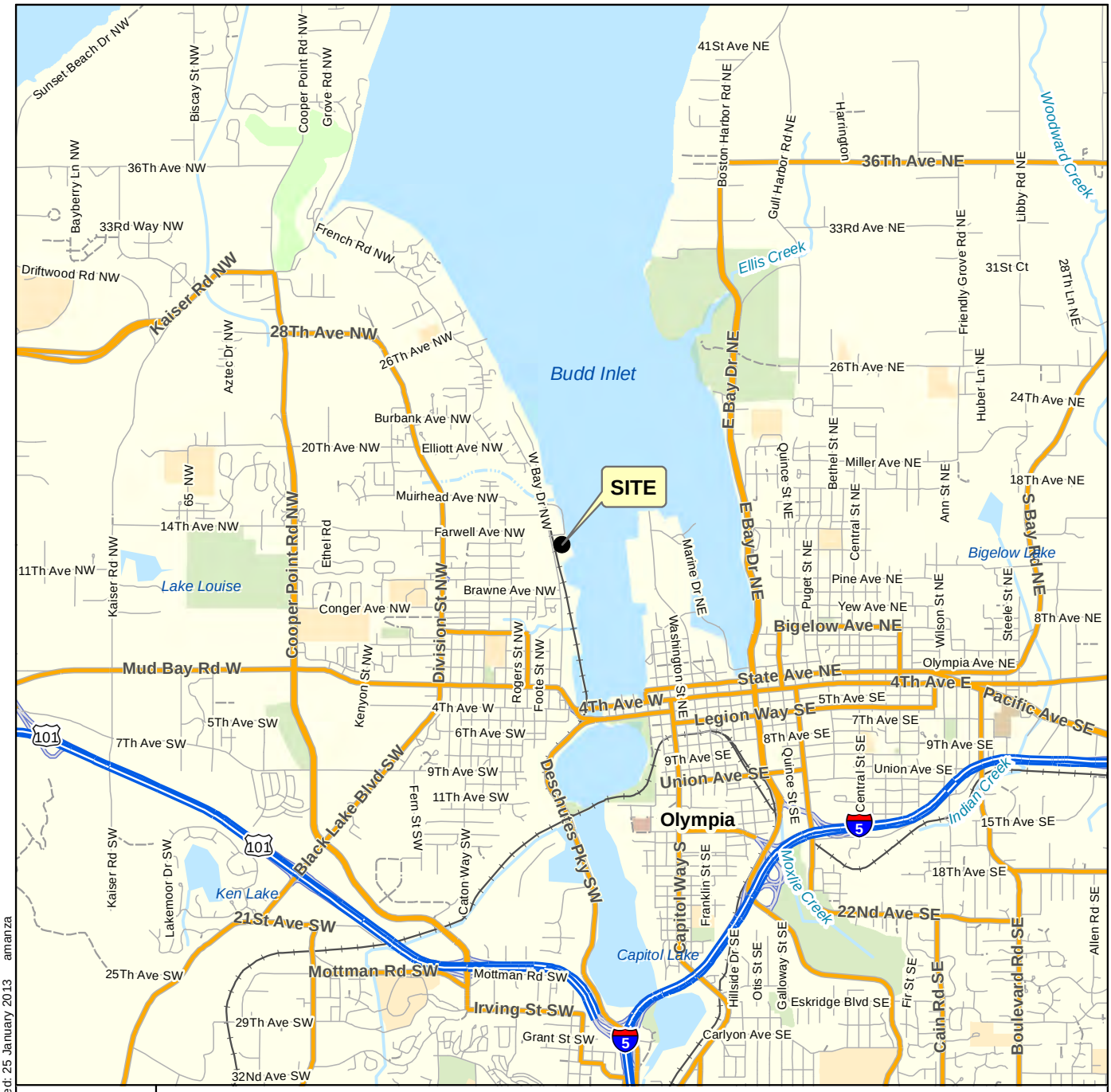
Tetra Tech EM, Inc., 1998, *Final Report Environmental Compliance Audit, Reliable Steel Fabricators, Inc., Olympia, Washington*, May 5, 1998.

Washington State Department of Ecology, 1991, *Guidance for Site Checks and Site Assessments for Underground Storage Tanks*, Toxics Cleanup Program Publication No. 90-52, Revised April 2003. http://www.ecy.wa.gov/biblio/9052.html.

Washington State Department of Ecology, 2008, *Natural Background Soil Metals Concentrations in Washington State*, Toxics Cleanup Program Publication No. 94-115.

Washington State Department of Ecology, 2013, *Responsiveness Summary, Reliable Steel July 26 – August 26, 2013 Public Comment Period, Remedial Investigation/Feasibility Study Report and Draft Cleanup Action Plan*, October 2013, https://fortress.wa.gov/ecy/gsp/CleanupSiteDocuments.aspx?csid=4076.

FIGURES



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Data Sources: ESRI Data & Maps

Projection: NAD 1983 UTM Zone 10N

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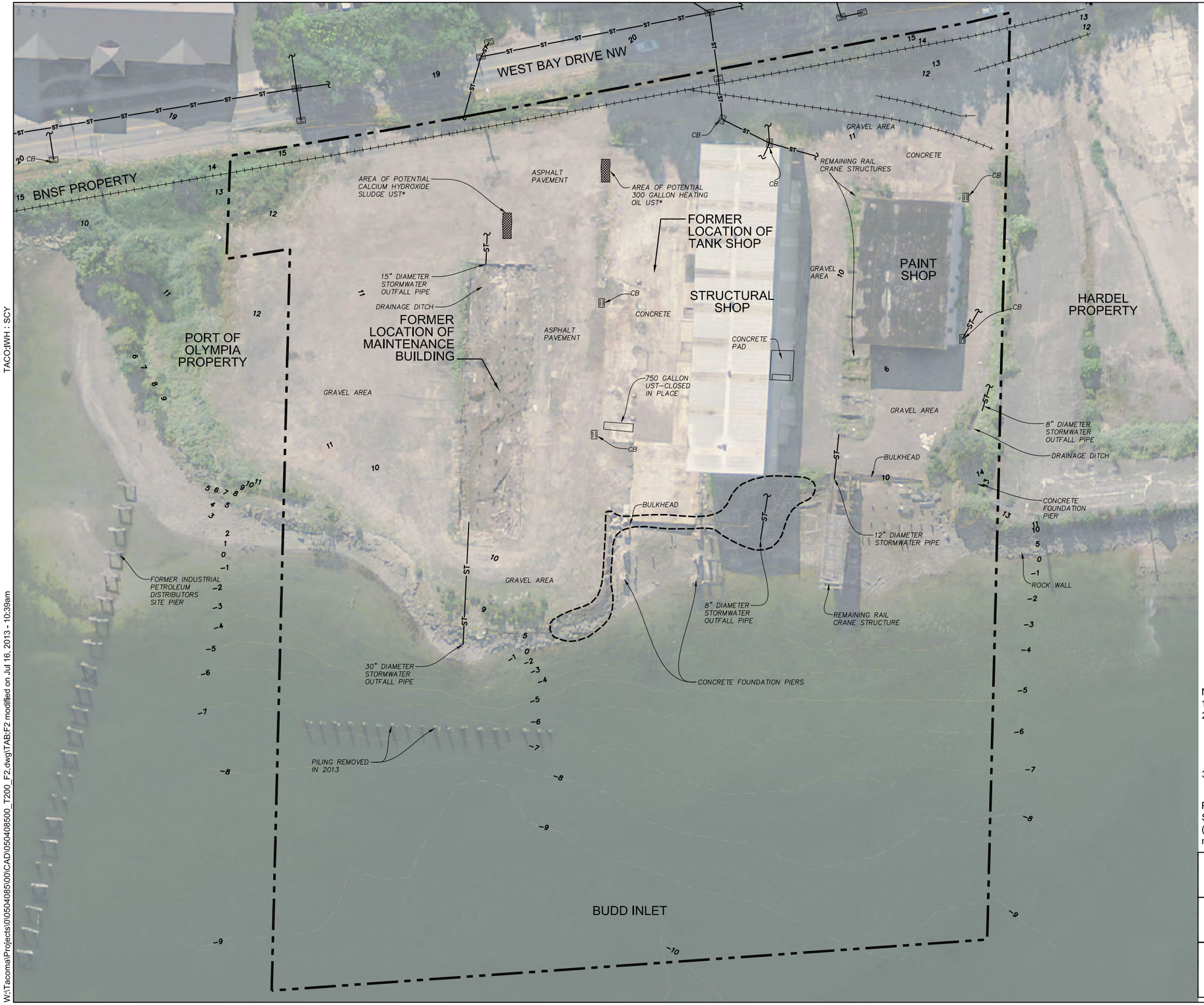
Vicinity Map

Reliable Steel Site
Olympia, Washington

Figure from GeoEngineers (2013a)

Figure 1



Legend

Site Features

- Property Line
- CB — Catch Basin
- ST — Stormwater Pipe
- Railroad Track
- Approximate Area of Metal Debris Visible on Shoreline
- –5 — Topographic / Bathymetric Contour Lline and Elevation (Feet NGVD 29)

70 0 70
Feet

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3. * Areas of potential USTs identified by geophysical survey (GPR and EM) on 3/3/2008.

Reference: Survey drawing provided by Hatton Godat Pantier Engineers and Surveyors, Inc. (11-17-08 survey) and aerial photo provided by Thurston County (2012 aerial). The aerial photo is oblique, and the features shown on the aerial do not exactly match those shown on the survey drawing.

Existing Site Conditions

Reliable Steel Site
Olympia, Washington

Figure from GeoEngineers (2013a) | **Figure 2**

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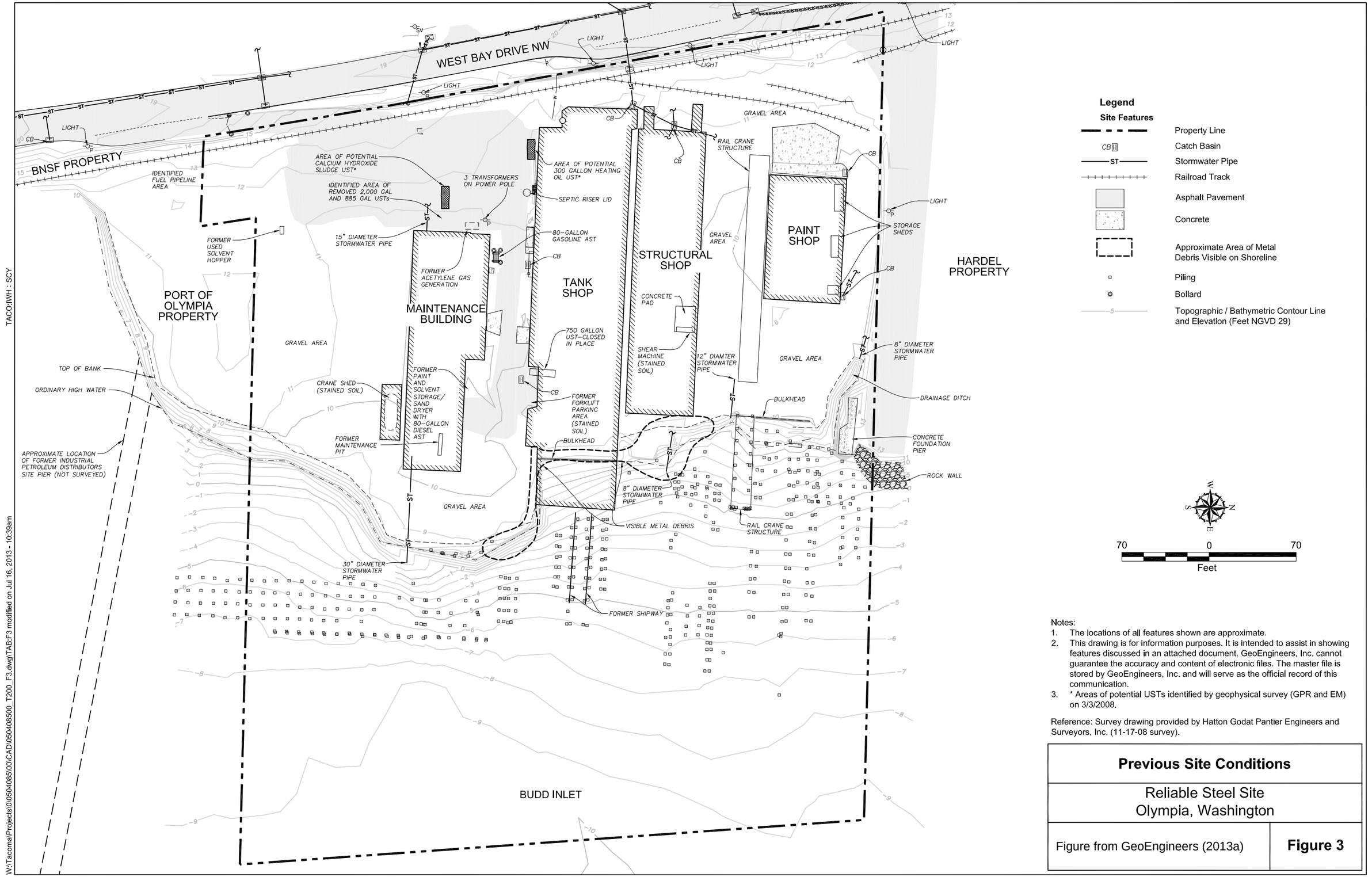

Legend

Site Features

- Property Line
- Catch Basin
- Stormwater Pipe
- Railroad Track
- Asphalt Pavement
- Concrete
- Approximate Area of Metal Debris Visible on Shoreline
- Piling
- Bollard
- Topographic / Bathymetric Contour Line and Elevation (Feet NGVD 29)

70 0 70
Feet

Notes:
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3. * Areas of potential USTs identified by geophysical survey (GPR and EM) on 3/3/2008.

Reference: Survey drawing provided by Hatton Godat Pantier Engineers and Surveyors, Inc. (11-17-08 survey).

Previous Site Conditions

Reliable Steel Site
Olympia, Washington

Figure from GeoEngineers (2013a) | **Figure 3**

TACO:IWH : SCY

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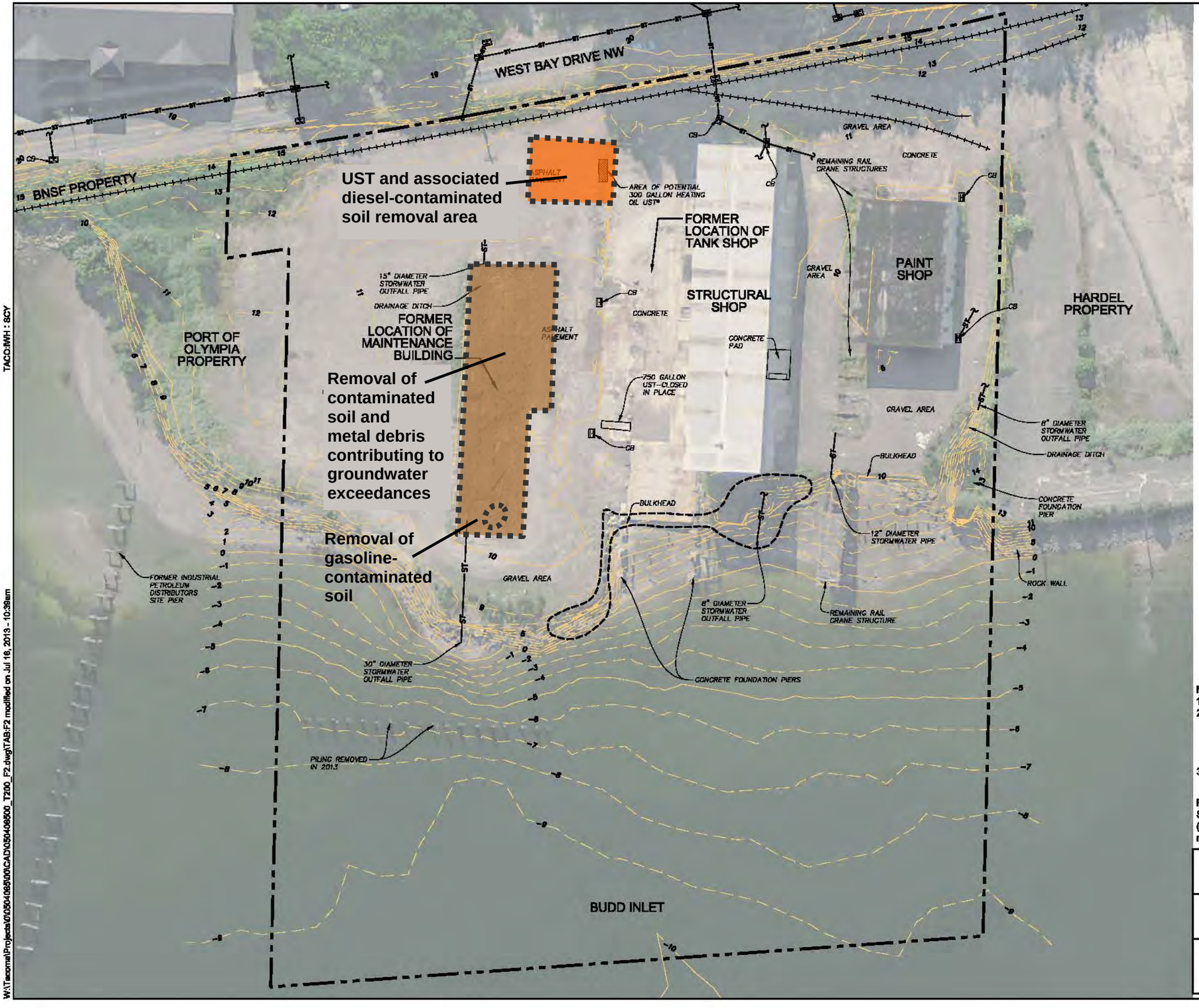

Legend

Site Features

- Property Line
- Catch Basin
- Stormwater Pipe
- Railroad Track
- Approximate Area of Metal Debris Visible on Shoreline
- Topographic / Bathymetric Contour Line and Elevation (Feet NGVD 29)

70 0 70
Feet

Notes:

1. The locations of all features shown are approximate.
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3. * Areas of potential USTs identified by geophysical survey (GPR and EM) on 3/3/2008.

Reference: Survey drawing provided by Hatton Godat Pantier Engineers and Surveyors, Inc. (11-17-08 survey) and aerial photo provided by Thurston County (2012 aerial). The aerial photo is oblique, and the features shown on the aerial do not exactly match those shown on the survey drawing.

Interim Action Excavation Areas

Reliable Steel Site
Olympia, Washington

Figure from GeoEngineers (2013a)

Figure 4

TACO:MH : SCY

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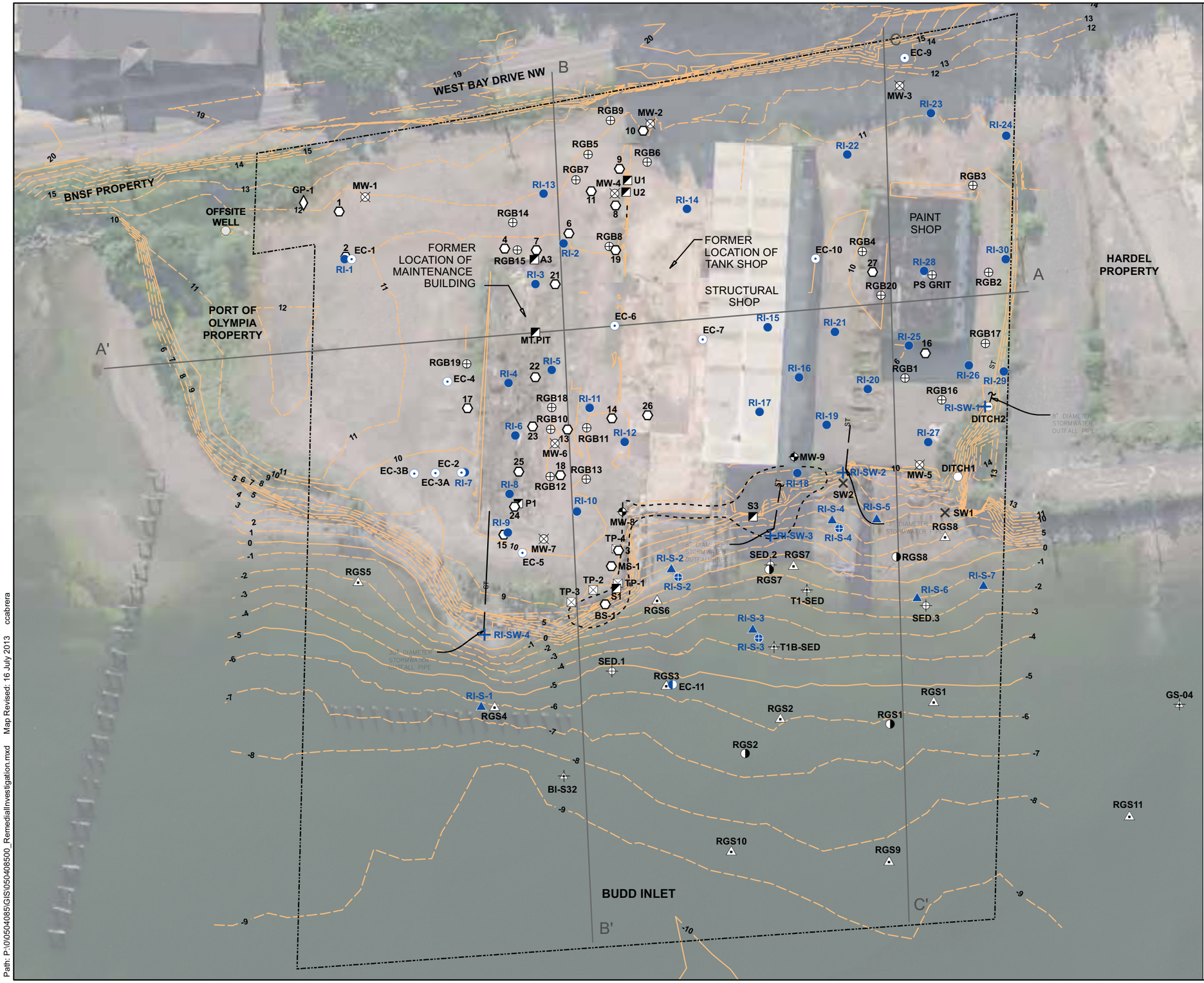

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Legend

Remedial Investigation Locations-LEGEND

- Remedial Investigation Soil Boring Location (Greylock 2010)
- Remedial Investigation Sediment Core Sample Location (Greylock 2010)
- Remedial Investigation Stormwater Sample Location (Greylock 2010)
- Remedial Investigation Surface Sediment Sample Location (Greylock 2010)
- Supplemental Investigation Soil Boring Location (Ecology 2013)
- Supplemental Investigation Sediment Core Location (Ecology 2013)

Previous Investigation Locations-LEGEND

- DOF Soil Sample Location (2007)
- DOF Sediment Sample Location (2007)
- DOF Test Pit Sample Location (2007)
- Ecology Surface Sediment Sample Location(2008)
- Greylock Ditch Sample Location
- Greylock Monitoring Well (2008)
- Greylock Soil Sample Location (2008)
- Greylock Sediment Core Sample Location (2008)
- Greylock Surface Sediment Sample Location (2007, 2008)
- Greylock Stormwater Sample Location (2008)
- Stemen Monitoring Well (2007)
- Stemen Sample Location (2005, 2006)
- ARCADIS Sample Location (2013)
- Unknown

Site Features

- ST Stormwater Pipe
- Property Line
- Approximate Area of Metal Debris Visible on Shoreline
- 5 Topographic/Bathymetric Contour Line and Elevation (feet NGVD29)
- A A' Cross Section Locations

W S N E

70 0 70

Feet

Data Source: Drawing provided by HATTON GODAT PANTIER. Aerial image from Thurston County, 2012.

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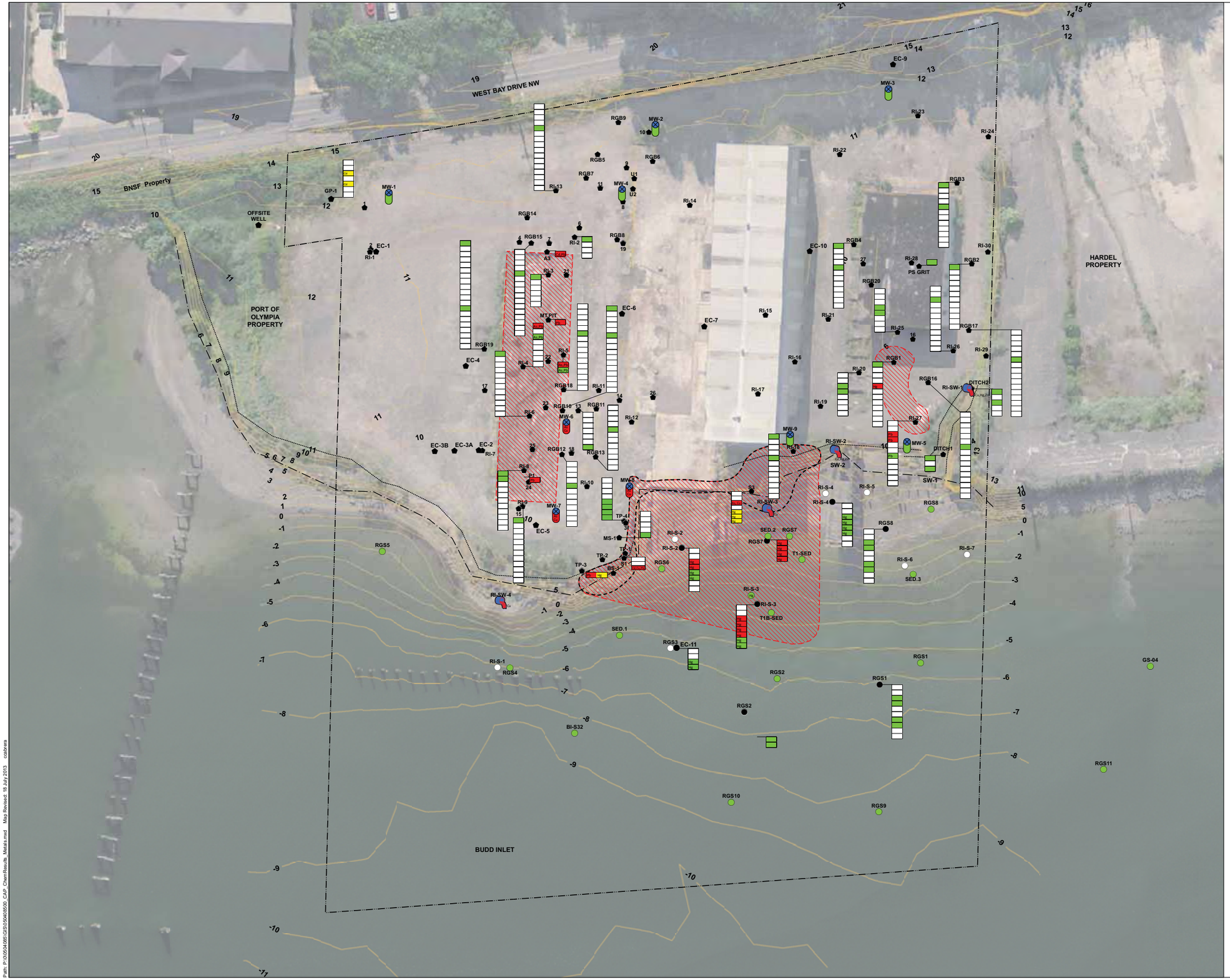
Remedial Investigation Locations

Reliable Steel Site
Olympia, Washington

Figure from GeoEngineers (2013b)

Figure 5



Legend

- Property Line
- Top of Bank
- Ordinary High Water
- Approximate Area of Metal Debris Visible on Shoreline
- 5 — Topographic/Bathymetric Contour Line and Elevation (feet NGVD29)

Sampling Location Type

- Soil Sampling Location [1]
- Groundwater Monitoring Well Location
- Stormwater Sampling Location
- Surface Sediment Sampling Location [2]
- Subsurface Sediment Sampling Location [1]

Sample Depth Interval [1]

Each box represents a 1-foot sample depth interval. The total number of boxes indicates the total depth[3] of subsurface exploration.

Analyte

As	Arsenic
Cd	Cadmium
Cu	Copper
Pb	Lead
Hg	Mercury

Nature and Extent of Contamination

No shading[4] of the sampling location/depth interval indicates a sample was either not obtained or not analyzed for metals.

Red shading[4] of the sampling location/depth interval indicates that the identified analyte was detected at a concentration greater than the proposed cleanup/screening level.

Green shading[4] of the sampling location/depth interval indicates that the identified analyte was detected at a concentration less than the proposed cleanup/screening level. If no analyte is identified within the shading, As, Cd[5], Cu[6], Pb and Hg were either not detected or detected at concentrations less than the proposed cleanup/screening levels.

Yellow shading[4] of sampling location/interval indicates that the metals detection limit for one or more analytes was above the proposed cleanup/screening levels.

Red hatching represents estimated area of soil/sediment exceeding proposed cleanup levels for metals.

Notes:

1 Sample depth intervals are shown for soil sampling locations and subsurface sediment sampling locations for which metals analysis was performed.

2 Surface sediment samples were generally collected from 0 to 10 cm below the mud line.

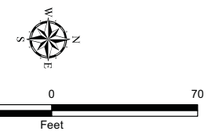
3 At locations for which the total depth of subsurface exploration is not known, the depth of the deepest sample obtained at the location represents the total depth of exploration.

4 Color shading of sampling locations/intervals presented in this figure is based on comparison of chemical analytical results of:
*Soil samples (obtained landward of OHW line) to proposed soil cleanup levels.
*Sediment samples (obtained waterward of OHW line) to proposed sediment cleanup levels.
*Samples obtained along the shoreline of metal debris to proposed soil and sediment cleanup levels.
*Groundwater samples (most recent samples analyzed at the sampling locations) to proposed groundwater cleanup levels.
*Stormwater samples (most recent samples analyzed at the sampling locations) to proposed screening levels.

5 Cadmium analysis was not performed on soil, groundwater, stormwater and sediment samples collected by Greylock Consulting in 2011.

6 Copper analysis was not performed at sampling locations S-13, BS-1, MS-1 and Sand Grit.

7 Proposed cleanup and screening levels are presented in Tables 2 through 5.The chemical analytical results for metals are presented in Tables 6, 13, 14, 19, 23, and 25.



Data Source: Aerial image from Thurston County, 2012.

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1. The locations of all features shown are approximate.
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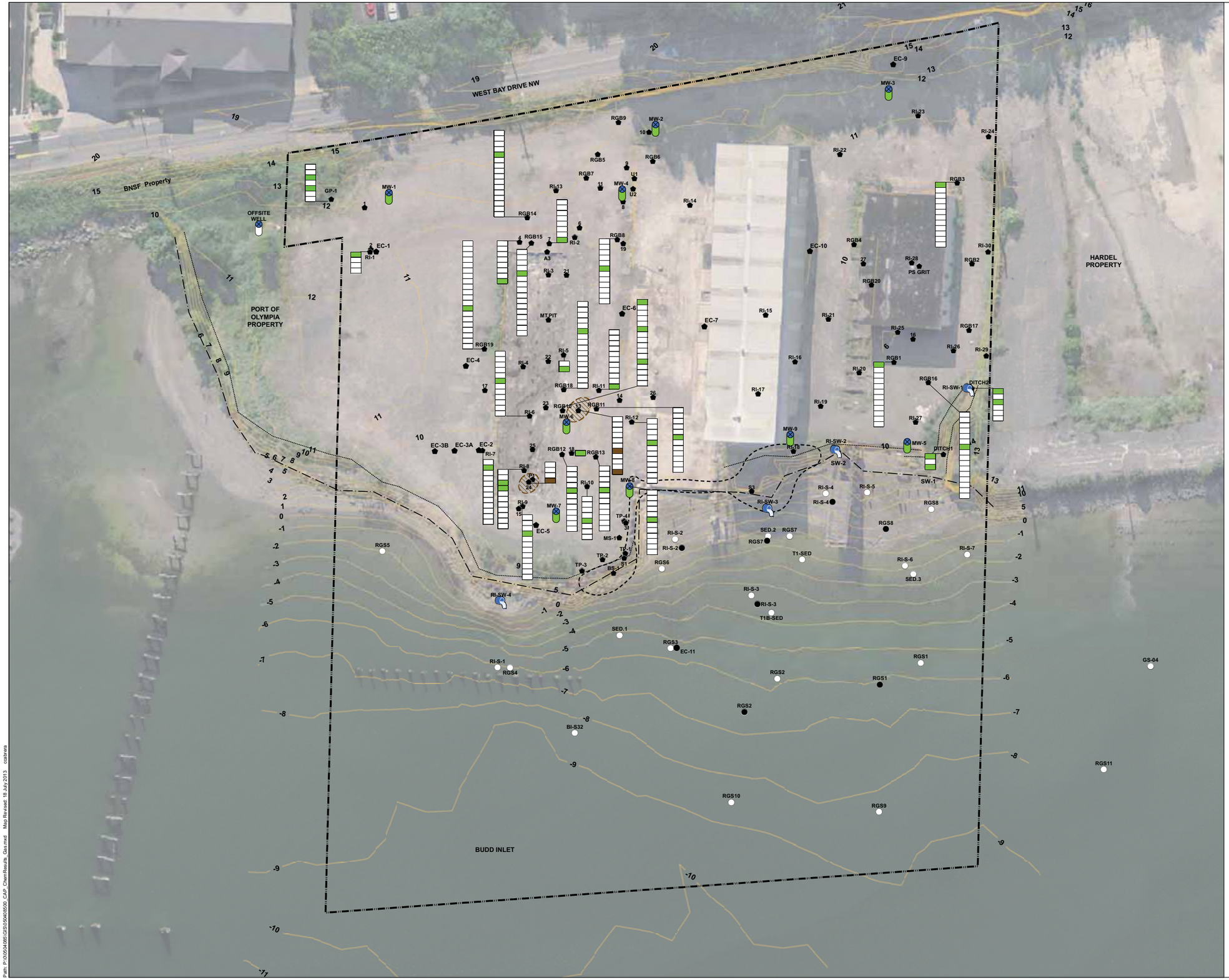
Extent of Metals Contamination

Reliable Steel Site
Olympia, Washington

Figure from GeoEngineers (2013a)

Figure 6

Path: P:\0505\04\GIS\2504078\00_CAP_ChemResults_Metals.mxd Map Revised: 18 July 2013 csabrera



Legend

- Property Line
- Top of Bank
- Ordinary High Water
- Approximate Area of Metal Debris Visible on Shoreline
- 5 — Topographic/Bathymetric Contour Line and Elevation (feet NGVD29)

Sampling Location

- Soil Sampling Location [1]
- Groundwater Monitoring Well Location
- Stormwater Sampling Location
- Surface Sediment Sampling Location [2]
- Subsurface Sediment Sampling Location [1]

Sampling Interval [1]

Each box represents 1-foot sampling interval. Total number of boxes indicates the total depth[3] of subsurface exploration.

Nature and Extent of Contamination

No shading[4] of sampling location/interval indicates sample was either not obtained or not analyzed for gasoline-range petroleum hydrocarbons.

Brown shading[4] of sampling location/interval indicates that the gasoline-range petroleum hydrocarbons were detected at a concentration greater than the proposed cleanup/screening level.

Green shading[4] of sampling location/interval indicates that gasoline-range petroleum hydrocarbons were detected at a concentration less than the proposed cleanup/screening level.

Brown hatching represents estimated area of soil/sediment exceeding proposed cleanup level for gasoline-range petroleum hydrocarbons.

Notes:

1 Sampling intervals are shown for soil sampling locations and subsurface sediment sampling locations for which gasoline-range petroleum hydrocarbons analysis was performed.

2 Surface sediment samples were generally collected from 0 to 10 cm below the mud line.

3 Locations for which total depth of subsurface exploration is unknown, depth of the deepest sample obtained at such location represents total depth.

4 Color shading of sampling locations/intervals presented in this figure is based on comparison of chemical analytical results of:
*Soil samples (obtained landward of OHW line) to proposed soil cleanup levels.
*Sediment samples (obtained waterward of OHW line) to proposed sediment cleanup levels.
*Samples obtained along the shoreline of metal debris to proposed soil and sediment cleanup levels.
*Groundwater samples (most recent samples analyzed at the sampling locations) to proposed groundwater cleanup levels.
*Stormwater samples (most recent samples analyzed at the sampling locations) to proposed screening levels.

5 Proposed cleanup and screening levels are presented in Tables 2 through 5. Chemical analytical results for gasoline-range petroleum hydrocarbons are presented in Tables 8, 15, 20 and 23.

70 35 0 70
Feet

Data Source: Aerial image from Thurston County, 2012.

General Notes:
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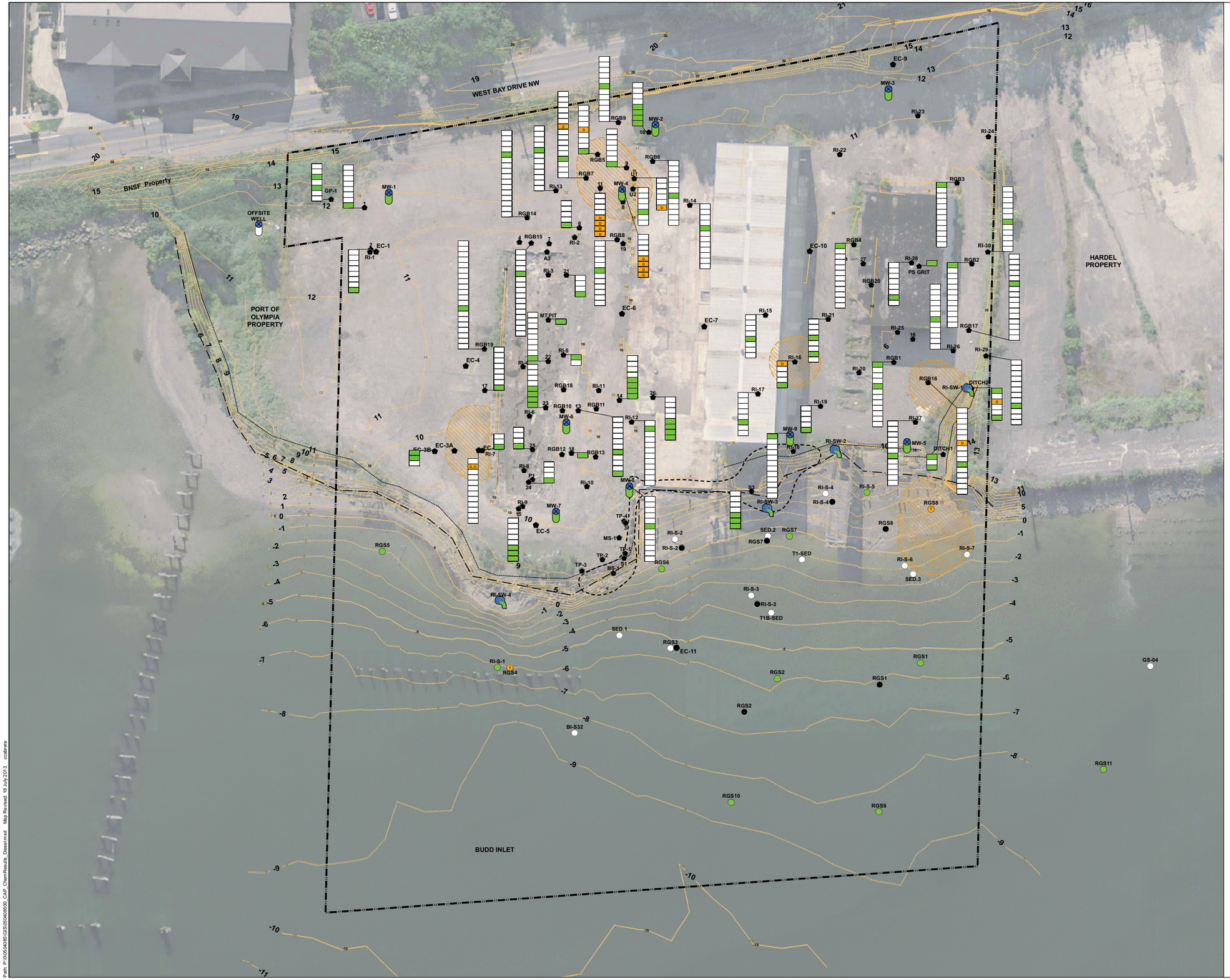
Extent of Gasoline Contamination

Reliable Steel Site
Olympia, Washington

Figure from GeoEngineers (2013a)

Figure 7

Path: P:\0505\041\085\05040800_CAP_ChemResults_Gas.mxd Map Revised: 18 July 2013 csabrera



Legend

- Property Line
- Top of Bank
- Ordinary High Water
- Approximate Area of Shoreline Metal Debris Visible on Shoreline
- Topographic/Bathymetric Contour Line and Elevation (feet NGVD29)

Sampling Location

- Soil Sampling Location [1]
- Groundwater Monitoring Well Location
- Stormwater Sampling Location
- Surface Sediment Sampling Location [2]
- Subsurface Sediment Sampling Location [1]

Sampling Interval [1]

Each box represents 1-foot sampling interval.
Total number of boxes indicates the total depth[3] of subsurface exploration.

Analyte

- D Diesel-range petroleum hydrocarbons
- O Heavy oil-range petroleum hydrocarbons
- T Total petroleum hydrocarbons (sum of diesel-range and heavy oil-range petroleum hydrocarbons)

Nature and Extent of Contamination

No shading[4] of sampling location/interval indicates sample was either not obtained or not analyzed for diesel-range and oil-range petroleum hydrocarbons.

Orange shading[4] of sampling location/interval indicates that the identified analyte was detected at a concentration greater than the proposed cleanup/screening level.

Green shading[4] of sampling location/interval indicates that the diesel-range and oil-range petroleum hydrocarbons were detected at concentrations less than the proposed cleanup/screening levels.

Orange hatching represents estimated area of soil/sediment exceeding proposed cleanup levels for diesel-range and oil-range petroleum hydrocarbons.

Notes:

1 Sampling intervals are shown for soil sampling locations and subsurface sediment sampling locations for which diesel-range and oil-range petroleum hydrocarbon analysis was performed.

2 Surface sediment samples were generally collected from 0 to 10 cm below the mud line.

3 Locations for which total depth of subsurface exploration is unknown, depth of the deepest sample obtained at such location represents total depth.

4 Color shading of sampling locations/intervals presented in this figure is based on comparison of chemical analytical results of:
*Soil samples (obtained landward of OHW line) to proposed soil cleanup levels.
*Sediment samples (obtained waterward of OHW line) to proposed sediment cleanup levels.
*Samples obtained along the shoreline of metal debris to proposed soil and sediment cleanup levels.
*Groundwater samples (most recent samples analyzed at the sampling locations) to proposed groundwater cleanup levels.
*Stormwater samples (most recent samples analyzed at the sampling locations) to proposed screening levels.

5 Proposed cleanup and screening levels are presented in Tables 2 through 5. Chemical analytical results for diesel-range and oil-range petroleum hydrocarbons are presented in Tables 8, 13, 15, 20, 23 and 25 through 24.

70 35 0 70
Feet

Data Source: Aerial image from Thurston County, 2012.

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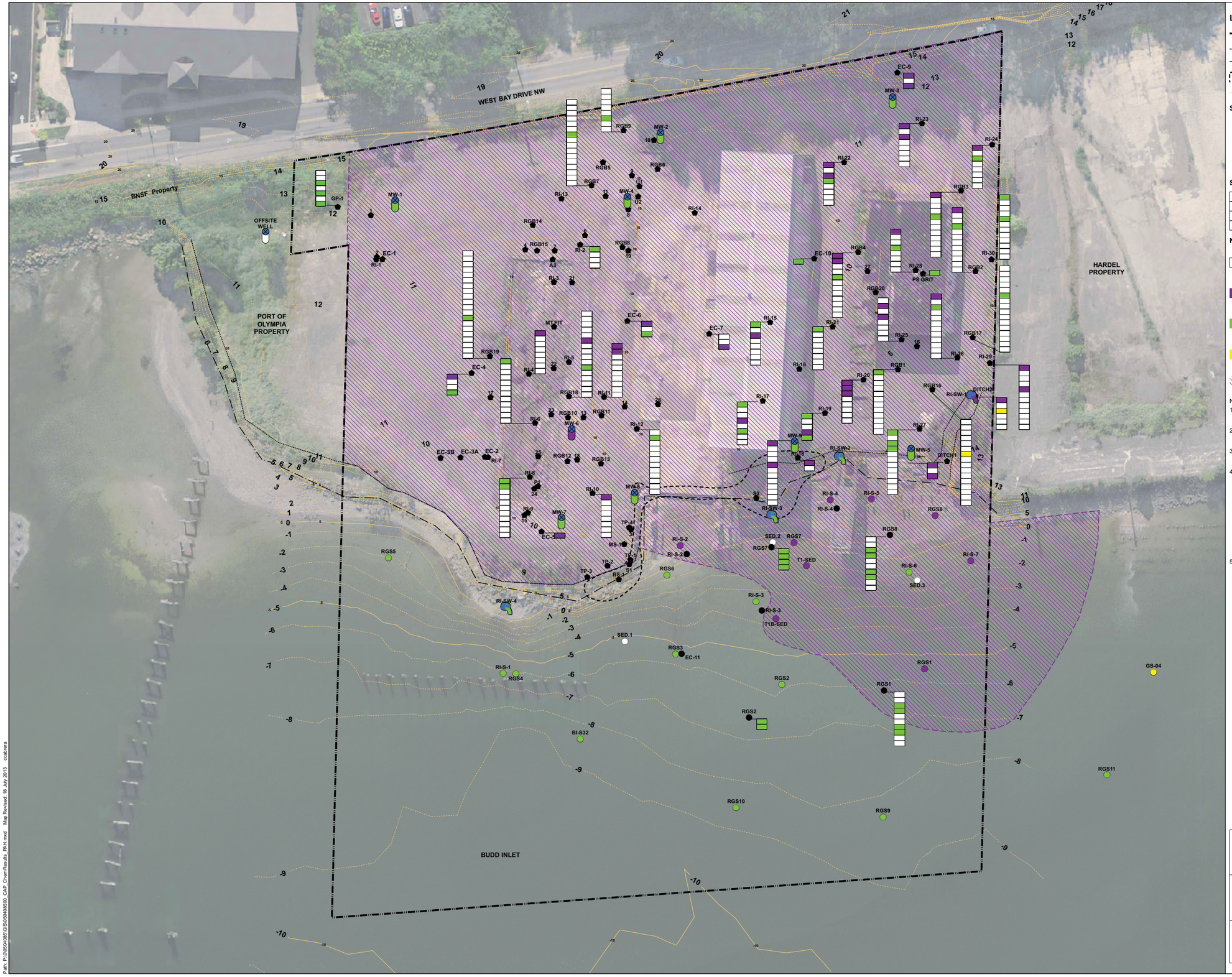
Extent of Diesel and Heavy Oil Contamination

Reliable Steel Site
Olympia, Washington

Figure from GeoEngineers (2013a)

Figure 8

Path: P:\05\05040085\GIS\05040085_CAP_ChemResults_Diesel.mxd Map Revised: 18 July 2013 ccabrera



Legend

- Property Line
- Top of Bank
- Ordinary High Water
- Approximate Area of Metal Debris Visible on Shoreline
- 5 — Topographic/Bathymetric Contour Line and Elevation (feet NGVD29)

Sampling Location

- Soil Sampling Location [1]
- Groundwater Monitoring Well Location
- Stormwater Sampling Location
- Surface Sediment Sampling Location [2]
- Subsurface Sediment Sampling Location [1]

Sampling Interval [1]

Each box represents 1-foot sampling interval. Total number of boxes indicates the total depth[3] of subsurface exploration.

Nature and Extent of Contamination

No shading[4] of sampling location/interval indicates sample was either not obtained or not analyzed for Polycyclic Aromatic Hydrocarbons (PAHs).

Purple shading[4] of sampling location/interval indicates that the PAHs were detected at concentrations greater than the proposed cleanup/ screening levels.

Green shading[4] of sampling location/interval indicates that the PAHs were detected at concentrations less than the proposed cleanup/ screening levels.

Yellow shading[4] of sampling location/interval indicates that the PAH detection limit for one or more analytes was above the proposed cleanup/screening levels.

Purple hatching represents estimated area of soil/sediment exceeding proposed cleanup level for PAHs.

Notes:

1 Sampling intervals are shown for soil sampling locations and subsurface sediment sampling locations for which PAH analysis was performed.

2 Surface sediment samples were generally collected from 0 to 10 cm below the mud line.

3 Locations for which total depth of subsurface exploration is unknown, depth of the deepest sample obtained at such location represents total depth.

4 Color shading of sampling locations/intervals presented in this figure is based on comparison of chemical analytical results of:
*Soil samples (obtained landward of OHW line) to proposed soil cleanup levels.
*Sediment samples (obtained waterward of OHW line) to proposed sediment cleanup levels.
*Samples obtained along the shoreline of metal debris to proposed soil and sediment cleanup levels.
*Groundwater samples (most recent samples analyzed at the sampling locations) to proposed groundwater cleanup levels.
*Stormwater samples (most recent samples analyzed at the sampling locations) to proposed screening levels.

5 Proposed cleanup/screening levels are presented in Tables 2 through 5. Chemical analytical results for PAHs are presented in Tables 9, 16, 21, 23 and 24.

70 35 0 70
Feet

Data Source: Aerial image from Thurston County, 2012.

General Notes:
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Extent of PAHs Contamination

Reliable Steel Site
Olympia, Washington

Figure from GeoEngineers (2013a)

Figure 9

Path: P:\09\04\085\GIS\05040850G_CAP_ChemResults_PAH.mxd Map Revised: 18 July 2013 ccabrera

TABLES

Table 1

Summary of Soil Total Metals Analytical Results[1]

Maintenance Building Area

Reliable Steel Site

Olympia, Washington

Analytes	Proposed Soil Cleanup Levels[2]	Location[3]	RI-2	RI-3	RI-4		RI-5		RI-6	RI-8		RI-9	RGB10		RGB12	RGB13	RGB14	RGB15
		Sample ID	RI-2	RI-3	RI-4	RI-4	RI-5	RI-5	RI-6	RI-8	RI-8	RI-9	RGB10-S	RGB10-5	RGB12-4	RGB13-4	RGB14-4	RGB15-4
		Depth (feet)	0-1	0-0.5	0-0.5	2-3	0-1	1-2	0-1	0-1.5	2.5-3.5	0-1	Surface	5	4	4	4	4
		Date	7/13/10	7/13/10	7/13/10	7/13/10	7/13/10	7/13/10	7/13/10	7/13/10	7/13/10	7/13/10	2/11/08	2/11/08	2/11/08	2/11/08	2/11/08	2/11/08
Metals (mg/kg)																		
Arsenic	20		3.12	14.5	**25.8**	4.14	**31.6**	4.1	3.4	4.27	–	2.19	1.82	4.71	3.64	5.85	5.45	2.75
Barium	16,000		--	--	--	–	--	–	--	--	–	--	--	--	--	--	--	--
Cadmium	2		--	--	--	–	--	–	--	--	–	--	1 U	1 U	1 U	1 U	1 U	1 U
Chromium (total)	2,000		12	132	280	–	82.8	–	10.1	24.8	–	17.8	25.3	24.3	16	19	25.6	32.4
Copper	3,000		13.5	828	188	–	423	–	23.4	31	–	39.2	27.6	25.7	17.2	28.3	22.3	20.6
Lead	250		42	223	**596**	12.2	**710**	183	13	61	–	13	62.3	65.6	25.1	44.1	8.64	225
Mercury	2		0.2 U	0.2 U	0.2 U	--	0.2	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Selenium	400		--	--	--	–	--	–	--	--	–	--	--	--	--	--	--	--
Silver	400		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	4,800		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	24,000		83	893	857	--	1,610	--	39.6	102	--	75.4	1,120	128	53.4	84.7	38	47.6

Notes:

[1] Table adapted from GeoEngineers (2013b).

[2] Proposed soil cleanup levels are referenced from GeoEngineers (2013a,b).

[3] Sample locations are shown in Figure 5.

U = The analyte was not detected at a concentration greater than the identified reporting limit.

-- = not analyzed

mg/kg = milligrams per kilogram

Yellow border indicates that the method reporting limit was greater than the proposed cleanup level.

Red border and bold text indicates that the analyte was detected at a concentration greater than the proposed cleanup level.

Table 1

Summary of Soil Metals Analytical Results

Maintenance Building Area

Reliable Steel Site

Olympia, Washington

Analytes	Proposed Soil Cleanup Levels[2]	Location[3]	RGB18	RGB19		A3	P1	Mt. Pit
		Sample ID	RGB18-5	RGB19-S	RGB19-12	A3	P1	Mt. Pit
		Depth (feet)	5	Surface	12	0.5	Surface	Surface
		Date	2/11/08	2/11/08	2/11/08	6/3/04	6/3/04	5/7/04
Metals (mg/kg)								
Arsenic	20		3.55	2.25	9.72	7.82	7.28	5.21
Barium	16,000		--	--	--	110	93.4	117
Cadmium	2		1 U	1 U	1 U	**2.87**	1.52	0.5 U
Chromium III	2,000		24.5	18.5	10	53.9	37.1	50.7
Copper	3,000		34.2	16.3	19.2	84.4	119	75.8
Lead	250		106	17.1	95.6	**1,540**	**518**	**338**
Mercury	2		0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U
Selenium	400		--	--	--	0.735	0.5 U	0.5 U
Silver	400		--	--	--	0.5 U	0.5 U	0.664
Tin	4,800		--	--	--	--	--	--
Zinc	24,000		150	70	164	--	--	--

Notes:

[1] Table adapted from GeoEngineers (2013b).

[2] Proposed soil cleanup levels are referenced from GeoEngineers (2013a,b).

[3] Sample locations are shown in Figure 5.

U = The analyte was not detected at a concentration greater than the identified reporting limit.

-- = not analyzed

mg/kg = milligrams per kilogram

Yellow border indicates that the method reporting limit was greater than the proposed cleanup level.

Red border and bold text indicates that the analyte was detected at a concentration greater than the proposed cleanup level.

Table 2

Summary of Selected Soil Chemical Analytical Results, Former Maintenance Building Area

Petroleum Hydrocarbons and BETX[1]

Reliable Steel Site

Olympia, Washington

Analyte	Proposed Soil Cleanup Levels[2]	Location[3]	EC-2	EC-03B		RI-5		RI-6	RI-7	RI-8	RI-9	RI-10	RI-11	RI-12		S-4	S-6	S-7
		Sample ID	EC2(2-3)	EC-3B(0-1)	EC-3B(1-2)	RI-5	RI-5	RI-6	RI-7A-1	RI-8	RI-9	RI-10	RI-11	RI-12	RI-12	S-4	S-6	S-7
		Depth (feet)	2-3	0-1	1-2	0-1	1-2	5-6	1	2.5-3.5	3	4	10	1	4	7	4.5	7
		Date	4/10/13	4/11/13	4/11/13	7/13/10	7/13/10	7/13/10	7/13/10	7/13/10	7/13/10	7/8/10	7/13/10	7/8/10	7/8/10	10/15/05	10/15/05	10/15/05
Petroleum Hydrocarbons (mg/kg)																		
Gasoline-range	30/100 [4]		--	--	--	--	3.3	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	10 U	--	10 U
Diesel-range	2,000		19 UJ	16 U	16 U	480	--	--	**2,700**	--	--	--	--	50 U	--	--	20 U	--
Heavy-oil range	2,000		290 J	99	40 U	930	--	--	**7,300**	--	--	--	--	250 U	--	--	40 U	--
Mineral oil-range	4,000		--	--	--	--	--	--	--	--	--	--	--	--	--	--	40 U	--
BETX (mg/kg)																		
Benzene	0.03		--	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.02 U	--	0.02 U
Ethylbenzene	6		--	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.05 U	--	0.05 U
Toluene	7		--	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	0.02 U	0.05 U	--	0.05 U
Xylenes	9		--	--	--	--	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	--	0.06 U	0.05 U	--	0.05 U

Notes:

[1] Table adapted from GeoEngineers (2013b).

[2] Proposed soil cleanup levels are referenced from GeoEngineers (2013a,b).

[3] Sample locations are shown in Figure 5.

[4] Cleanup level for gasoline-range petroleum hydrocarbon is 30 mg/kg if benzene is present and 100 mg/kg if benzene is not present.

U = The analyte was not detected at a concentration greater than the identified reporting limit.

x = The pattern of peaks present is not indicative of diesel.

y = The pattern of peaks present is not indicative of motor oil.

-- = not analyzed

mg/kg = milligrams per kilogram

Yellow border indicates that the method reporting limit was greater than the proposed cleanup level.

Red border and bold text indicates that the analyte was detected at a concentration greater than the proposed cleanup level.

Table 2

Summary of Selected Soil Chemical Analytical Results, Former Maintenance Building Area

Petroleum Hydrocarbons and BETX[1]

Reliable Steel Site

Olympia, Washington

Analyte	Proposed Soil Cleanup Levels[2]	Location[3]	S-14	S-15	S-17	S-18	S-21	S-22	S-23	S-24	S-25	RGB10			RGB11	RGB12
		Sample ID	S-14	S-15	S-17	S-18	S-21	S-22	S-23	S-24	S-25	RGB10-S	RGB10-5	RGB10-11	RGB11-5	RGB12-4
		Depth (feet)	4-8	5-8	7	Surface	3	8	4-8	3	3	Surface	5	11	5	4
		Date	10/15/05	10/15/05	10/15/05	10/15/05	10/15/05	10/15/05	10/15/05	10/15/05	10/15/05	2/11/08	2/11/08	2/11/08	2/11/08	2/11/08
Petroleum Hydrocarbons (mg/kg)																
Gasoline-range	30/100 [4]		–	–	–	100	–	–	–	**490**	–	7	14	2 U	2 U	2 U
Diesel-range	2,000		20 U	20 U	20 U	180	20 U	20 U	20 U	500	20 U	–	–	–	–	–
Heavy-oil range	2,000		40 U	40 U	40 U	1,000	56	40 U	40 U	1,200	40 U	–	–	–	–	–
Mineral oil-range	4,000		40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	–	–	–	–	–
BETX (mg/kg)																
Benzene	0.03		–	–	–	0.02 U	–	–	–	–	–	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Ethylbenzene	6		–	–	–	0.05 U	–	–	–	–	–	0.05 U	0.059	0.05 U	0.05 U	0.05 U
Toluene	7		–	–	–	0.05 U	–	–	–	–	–	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Xylenes	9		–	–	–	0.05 U	–	–	–	–	–	0.15	0.21	0.1 U	0.1 U	0.1 U

Notes:

[1] Table adapted from GeoEngineers (2013b).

[2] Proposed soil cleanup levels are referenced from GeoEngineers (2013a,b).

[3] Sample locations are shown in Figure 5.

[4] Cleanup level for gasoline-range petroleum hydrocarbon is 30 mg/kg if benzene is present and 100 mg/kg if benzene is not present.

U = The analyte was not detected at a concentration greater than the identified reporting limit.

x = The pattern of peaks present is not indicative of diesel.

y = The pattern of peaks present is not indicative of motor oil.

– = not analyzed

mg/kg = milligrams per kilogram

Yellow border indicates that the method reporting limit was greater than the proposed cleanup level.

Red border and bold text indicates that the analyte was detected at a concentration greater than the proposed cleanup level.

Table 2

Summary of Selected Soil Chemical Analytical Results, Former Maintenance Building Area

Petroleum Hydrocarbons and BETX[1]

Reliable Steel Site

Olympia, Washington

Analyte	Proposed Soil Cleanup Levels[2]	Location[3]	RGB13	RGB14	RGB15	RGB18	RGB19	Mt. Pit
		Sample ID	RGB13-4	RGB14-4	RGB15-4	RGB18-5	RGB19-12	Mt. Pit
		Depth (feet)	4	4	4	5	12	Surface
		Date	2/11/08	2/11/08	2/11/08	2/11/08	2/11/08	5/7/04
Petroleum Hydrocarbons (mg/kg)								
Gasoline-range	30/100 [4]		2 U	2 U	2 U	2 U	2 U	--
Diesel-range	2,000		--	130 x	110 x	--	50 U	59.2
Heavy-oil range	2,000		--	580	440	--	250 U	140
Mineral oil-range	4,000		--	--	--	--	--	--
BETX (mg/kg)								
Benzene	0.03		0.03 U	0.02 U	0.02 U	0.03 U	0.03 U	--
Ethylbenzene	6		0.05 U	0.02 U	0.02 U	0.05 U	0.05 U	--
Toluene	7		0.05 U	0.02 U	0.02 U	0.05 U	0.05 U	--
Xylenes	9		0.1 U	0.06 U	0.06 U	0.1 U	0.1 U	--

Notes:

[1] Table adapted from GeoEngineers (2013b).

[2] Proposed soil cleanup levels are referenced from GeoEngineers (2013a,b).

[3] Sample locations are shown in Figure 5.

[4] Cleanup level for gasoline-range petroleum hydrocarbon is 30 mg/kg if benzene is present and 100 mg/kg if benzene is not present.

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y = The pattern of peaks present is not indicative of motor oil.

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Table 3

Summary of Soil Chemical Analytical Results, Heating Oil UST Area

Petroleum Hydrocarbons and BETX[1]

Reliable Steel Site

Olympia, Washington

Analyte	Proposed Soil Cleanup Levels[2]	Location[3]	RI-13	RI-14	S-8	S-9	S-10	S-11	RGB5		RGB6	RGB7		RGB8	RGB9	RGB14	U1	U2
		Sample ID	RI-13	RI-14	S-8	S-9	S-10	S-11	RGB5-5-6	RGB5-8	RGB6-6	RGB7-6-7	RGB7-12	RGB8-5	RGB9-5	RGB14-4	U1	U2
		Depth (feet)	4	4	4-8	6	4-8	4-8	5-6	8	6	6-7	12	5	5	4	5	4
		Date	7/13/10	7/12/10	10/15/05	10/15/05	10/15/05	10/15/05	2/8/08	2/8/08	2/8/08	2/8/08	2/8/08	2/8/08	2/11/08	2/11/08	6/3/04	6/3/04
Petroleum Hydrocarbons (mg/kg)																		
Gasoline-range	30/100 [4]		--	--	--	--	--	--	--	--	--	--	--	#	--	2 U	--	--
Diesel-range	2,000		50 U	50 U	**8,900**	1,200	20 U	**8,700**	**2,600**	50 U	50 U	**15,000**	# U	# U	# U	# x	**16,500**	10 U
Heavy-oil range	2,000		250 U	250 U	40 U	40 U	40 U	40 U	250 U	250 U	250 U	400 y	# U	# U	# U	#	278	25 U
Mineral oil-range	4,000		--	--	40 U	40 U	40 U	40 U	--	--	--	--	--	--	--	--	--	--
BETX (mg/kg)																		
Benzene	0.03		--	--	--	--	--	--	0.02 U	--	--	0.02 U	--	--	--	0 U	--	--
Ethylbenzene	6		--	--	--	--	--	--	0.02 U	--	--	0.02 U	--	--	--	0 U	--	--
Toluene	7		--	--	--	--	--	--	0.02 U	--	--	0.15	--	--	--	0 U	--	--
Xylenes	9		--	--	--	--	--	--	0.06 U	--	--	0.37	--	--	--	0 U	--	--

Notes:

[1] Table adapted from GeoEngineers (2013b).

[2] Proposed soil cleanup levels are referenced from GeoEngineers (2013a,b).

[3] Sample locations are shown in Figure 5.

[4] Cleanup level for gasoline-range petroleum hydrocarbon is 30 mg/kg if benzene is present and 100 mg/kg if benzene is not present.

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Yellow border indicates that the method reporting limit was greater than the proposed cleanup level.

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PHOTOGRAPHS

Photo 1: View of upstream end of 30-inch diameter stormwater pipe.

Photo 2: View of pilings and the concrete foundation on the north side of the former Maintenance Building. Well MW-6 (to be decommissioned) is in the foreground.

.

Photo 3: View of concrete foundation at the west end of the former Maintenance Building. Note that this foundation contains and/or overlies a 15-inch diameter stormwater pipe which is to remain in-place. (Photo courtesy of GeoEngineers).

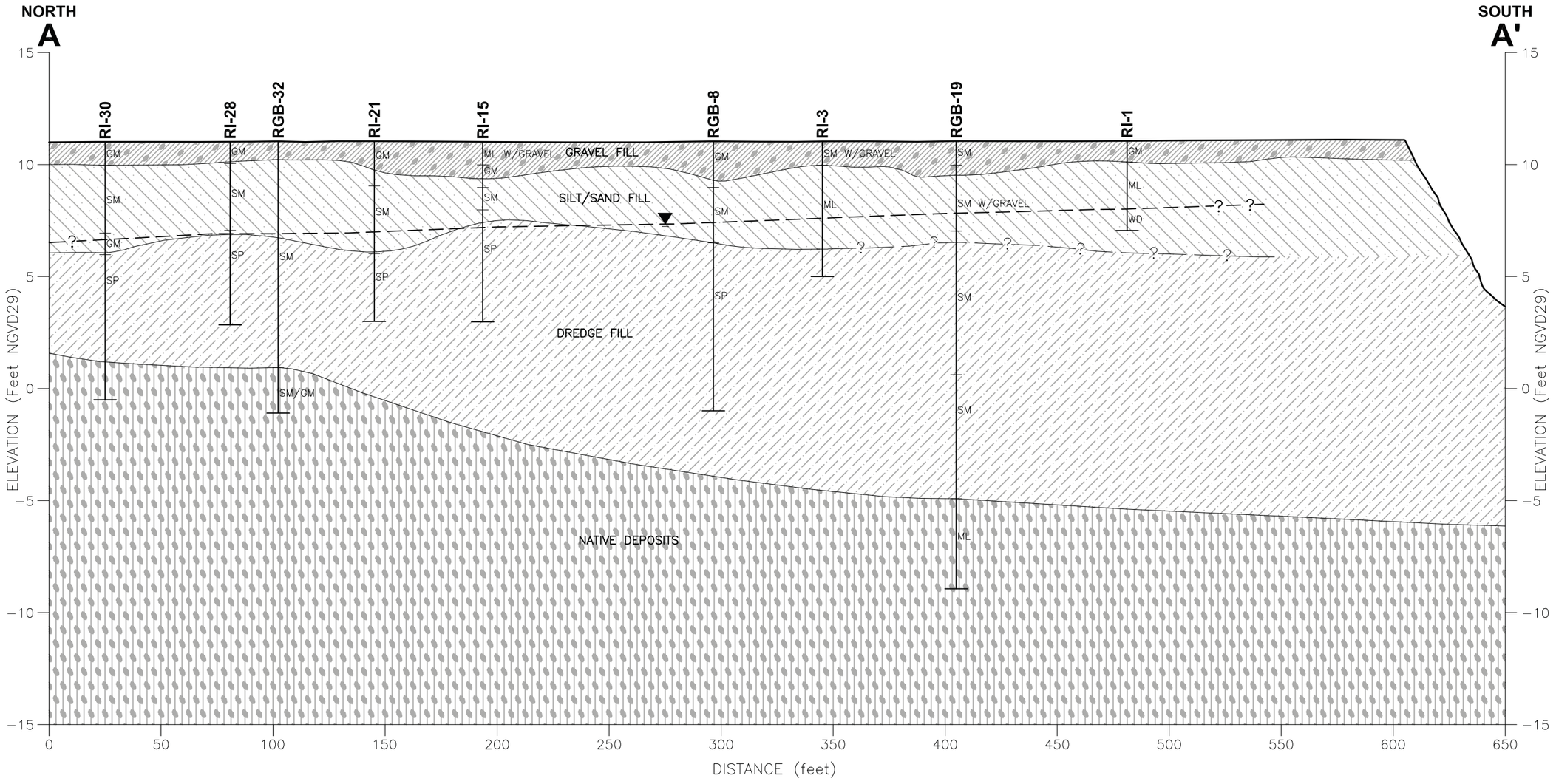
Photo 4: View of wooden timber retaining wall near the southeast corner of the former Maintenance Building.

Photo 5: View looking west toward West Bay Drive above the 30-inch diameter stormwater pipe at the east end of the former Maintenance Building.

Appendix A

Cross-Sections and Selected Boring Logs
(from GeoEngineers, 2013b)

Cross-Sections A-A' and B-B'
MW-4, -6, and -7 Boring Logs



Notes:

1. The subsurface conditions shown are based on interpolation between widely spaced explorations and should be considered approximate. Actual subsurface conditions may vary from those shown.
2. Refer to Figure 5 for location of Cross Section.
3. This figure is for informational purposes only. It is intended to assist in the identification of features discussed in an attached document. Data were compiled from sources identified in the document attached. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure. This figure is a copy of a master document. The master hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.
4. Vertical datum is NGVD 29, feet.

EXPLANATION:

RI-3 / RGB-19 APPROXIMATE INVESTIGATION LOCATION AND LOCATION DESIGNATION

SM SOIL TYPE

SOIL CONTACT

APPROXIMATE GROUNDWATER ELEVATION DURING HIGH TIDE ON SEPTEMBER 16, 2010

GRAVEL FILL

SILT/SAND FILL

DREDGE FILL

NATIVE DEPOSITS

50 0 50
Horizontal Scale in Feet

5 0 5
Vertical Scale in Feet
Vertical Exaggeration: 10X

Cross Section A-A'

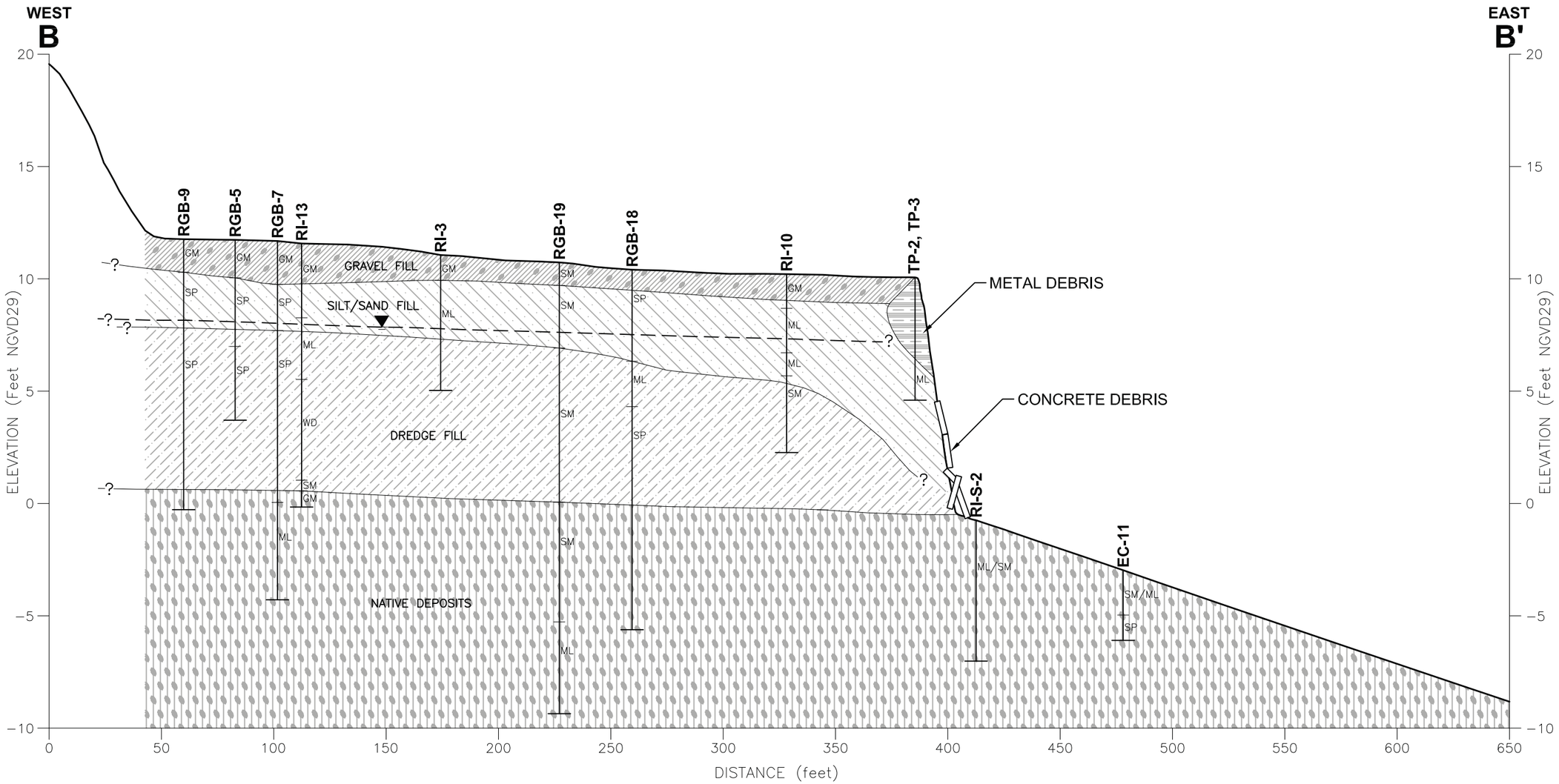
Reliable Steel Site
Olympia, Washington

GeoEngineers

Figure 8

W:\Tacoma\Projects\0105040850\00\CAD\0504085500_T200_F8_F9_F10.dwg\TAB:F8 modified on Jun 17, 2013 - 7:06am

TACO:GRL : SCY



Notes:

1. The subsurface conditions shown are based on interpolation between widely spaced explorations and should be considered approximate. Actual subsurface conditions may vary from those shown.
2. Refer to Figure 5 for location of Cross Section.
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4. Vertical datum is NGVD 29, feet.

EXPLANATION:

- **RI-3 / RGB-19** — APPROXIMATE INVESTIGATION LOCATION AND LOCATION DESIGNATION
- SM — SOIL TYPE
- SOIL CONTACT
- APPROXIMATE GROUNDWATER ELEVATION DURING HIGH TIDE ON SEPTEMBER 16, 2010

- GRAVEL FILL
- METAL DEBRIS
- SILT/SAND FILL
- DREDGE FILL
- NATIVE DEPOSITS

Horizontal Scale in Feet: 50 0 50

Vertical Scale in Feet: 5 0 5

Vertical Exaggeration: 10X

Cross Section B-B'

Reliable Steel Site
Olympia, Washington

GeoEngineers

Figure 9

W-4

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT Notice of Intent No. R65201

Type of Well ("x" in circle)
- ☒ Resource Protection
- ○ Geotech Soil Boring

MW-4'

Construction/Decommission ("x" in circle)
- ☒ Construction
- ○ Decommission ORIGINAL INSTALLATION Notice of Intent Number 2056080

Consulting Firm: Stemen Environmental

Unique Ecology Well ID Tag No: ALT 985

Property Owner: BoJo Investments LLC

Site Address: 1215 Westbay Dr.

City: Olympia County: Thurston

Location: 5-W 1/4 SE 1/4 Sec 10 Twn 18N R 2 (EWM circle one or WWM)

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

Tax Parcel No. ____

Cased or Uncased Diameter 2" Static Level 5'

Work/Decommission Start Date 7-7-06

Work/Decommission Completed Date 7-7-06

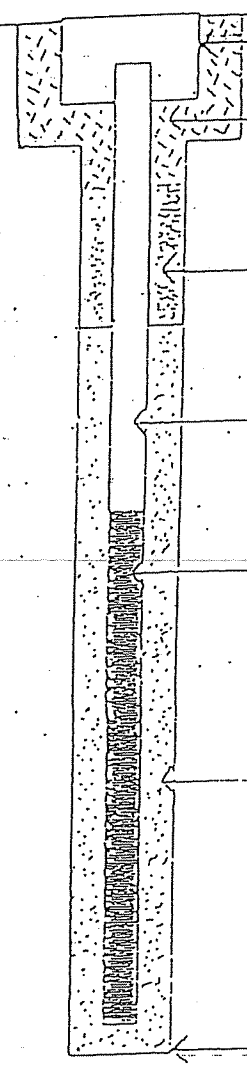
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Don Harden

Driller/Engineer/Trainee Signature: [signature]

Driller or Trainee License No. 2802

If trainee, licensed driller's signature and License no. ____

Construction/Design	Well Data	Formation Description
	MONUMENT TYPE: 8" Flush CONCRETE SURFACE SEAL: 0-1' 2'x9" Overdrilled Annular BACKFILL: 1-2 TYPE: Bentonite PVC BLANK: 0-3' PVC SCREEN: 3-8 SLOT SIZE: .010 TYPE: Sched 40 PVC SAND PACK: 2-8' MATERIAL: 10/20 Silica Sand WELL DEPTH: 8' Method: D.P Diameter: 3"	0-8' Sand w/ Sea Shells E5' H2O

The Department of Ecology does NOT Warranty ...

Scale 1" = N/A

Page 2 of 2

ECY 050-12 (Rev 2/01)

MW-6

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT Notice of Intent No. P65201

MW-6

onstruction/Decommission ("x" in circle)

L(truction

) Decommission ORIGINAL INSTALLATION Notice of Intent Number

205679

Consulting Firm Stemen Environmental

Unique Ecology Well ID APL 983

Tag No:

Type of Well ("x" in circle)

⊗ Resource Protection

O Geotech Soil Boring

Property Owner Bojo Investments LLC

Site Address 1218 Westbay Dr.

City Olympia County: Thurston

Location SW 1/4 SE 1/4 Sec 10 Twp 18N R 2 E/W/WM (circle one)

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

Tax Parcel No.

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☐ Driller ☐ Engineer ☐ Trainee Name (Print) Don Herndon

Driller/Engineer/Trainee Signature

Driller or Trainee License No. 2802

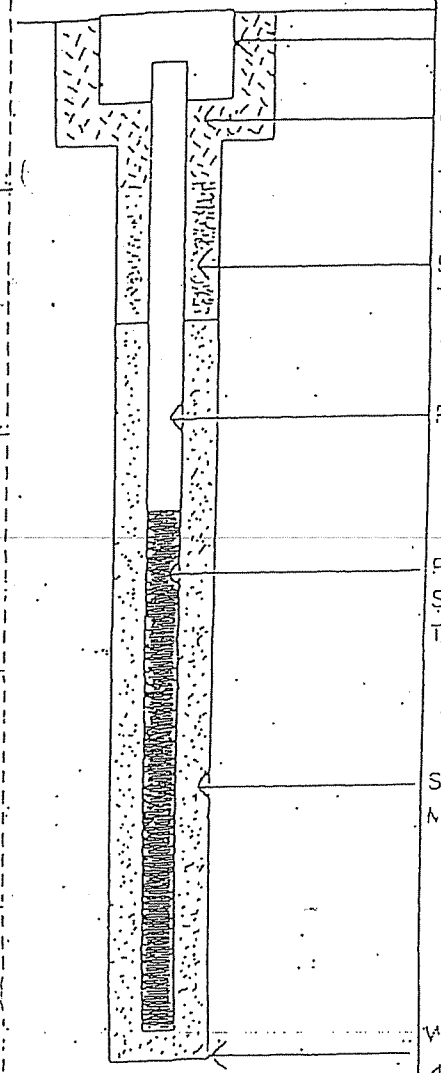
If trainee, licensed driller's signature and License no.

Cased or Uncased Diameter 2" Static Level 4 1/2'

Work/Decommission Start Date 7-7-06

Work/Decommission Completed Date 7-9-06

Construction/Design — Well Data



MONUMENT TYPE: 8" Flush

CONCRETE SURFACE SEAL: 0-1'

3'x9" Overdrilled Annular

BACKFILL: 1-2'

TYPE: Bentonite

PVC BLANK: 0-3'

PVC SCREEN: 3-13'

SLOT SIZE: 1010

TYPE: Hi-Lo Sch 40 PVC

SAND PACK: 2-13'

MATERIAL: 10/20 silica Sand

WELL DEPTH: 13'

Method: D.P

Diameter: 3"

Formation Description

0-4' Silt

4-12' Med Sand w/ Sea Shells

∑ 4 1/2' H2O

RECEIVED
SEP 25 2006
DEPARTMENT OF ECOLOGY
WELL DRILLING UNIT

DEPT. OF ECOLOGY FISCAL 06 SEP 21 AM 11:12

Scale 1" = N/A

ECY 050-12 (Rev 2/01)

Well Completion Log

Project Number	Boring Number	Sheet
060112	**MW-7**	1 of 1

Project Name: Former Reliable Steel
Location: Olympia, WA
Driller/Method: ESN / Direct Push
Sampling Method: Direct Push
Ground Surface Elev:
Depth to Water (Ft. BGS):
Start/Finish Date: 6/14/2006

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
	Concrete Surface seal Hydrated bentonite chip seal 10-20 sand filter pack 1.5'-3' ▽ 20-slot, 2" I.D. PVC screen 2'-10'; NO FILTER PACK BELOW 3'							
5								5
10								10
15								15

Sampler Type:
⊠ No Recovery

PID - Photoionization Detector (Headspace Measurement)
▼ Static Water Level
▽ Water Level (ATD)

Logged by: RRH
Approved by: LLC
Figure No.

IV BORING NO LOGO RELIABLE STEEL 060112.GPJ December 20, 2006

Appendix B

Sampling and Analysis Plan

Reliable Steel Interim Action
Sampling and Analysis Plan

The purpose of this Sampling and Analysis Plan (SAP) is to present the methodology for collecting and analyzing samples for the Reliable Steel interim action.

Detailed descriptions of the procedures to be followed for the sampling and quality assurance (QA) are discussed in the Final Work Plan, Remedial Investigation/Feasibility Study, Reliable Steel (GeoEngineers 2009). The Field Coordinator and the Project QA Leader is Steve Teel, Ecology.

During the interim action, Ecology staff will collect two types of soil samples: excavation confirmation soil samples and stockpile characterization samples.

Excavation Confirmation Samples

Excavation confirmation soil samples will be collected from the sidewalls and bottom of the Maintenance Building excavation. Also, a minimum of three samples will be collected from the heating oil underground storage tank (UST) excavation in accordance with Ecology (1991). A total of approximately 30 samples will be collected:

Maintenance Building Excavation

- 2 samples from the west wall
- 7 samples from the north wall
- 7 samples from the south wall
- 2 samples from the east wall
- 7 samples from the excavation base
- 2 sidewall samples from within the smaller gasoline excavation

Heating Oil UST Excavation

- 2 sidewall samples
- 1 excavation base sample

Sample analytes are described and shown in Table B-1.

Stockpile Samples

As stated in text Section 5.12, excavated soil stockpiles will be sampled and analyzed to determine if they need to be transported of-Site for disposal or if they can be reused as excavation backfill. However, when possible, rather than sampling and analyzing stockpiles, existing soil analytical data will be used to characterize contaminated soil for disposal. This approach will allow excavated contaminated soil to be transported directly to the disposal facility without further characterization.

Where stockpile characterization sampling is necessary, stockpile sampling will be performed at a frequency consistent with Table 5-3 of Ecology's *Guidance for Site Checks and Site Assessments for Underground Storage Tanks* (Ecology, 1991). Discrete samples will be collected from various zones and/or depth horizons within the stockpiles as the stockpiles are being constructed to obtain spatially representative samples of the stockpiled material. The stockpile samples will be collected from locations that are generally representative of the soils and where field screening indicates contamination may be present. To evaluate whether stockpiled overburden soil can be reused on Site as backfill, the stockpile samples will be analyzed for TPH-G, TPH-D, TPH-O, BTEX, cPAHs, and metals.

Sample Containers and Holding Times

Table B-2 shows sample containers and holding times.

Sample Methods

Sampling procedures are described in detail in the approved Sample and Analysis Plan (GeoEngineers, 2009). Overall, sampling procedures will follow those described in the SAP, with the exception that the soil samples will not be collected using hand augers or direct-push drilling equipment but will be collected using hand tools either directly from the excavation or from the excavator bucket.

As stated in Text Section 5.14, if equipment is available, field metals analyses will be conducted in the Maintenance Building excavation area using a portable X-ray fluorescence (XRF) detector. The XRF detector will be used to field screen excavation limits for the Maintenance Building prior to collecting samples for laboratory metals analysis. The laboratory soil samples for both excavation areas will be analyzed on a short turnaround basis to assess compliance with Site-specific cleanup levels and to minimize contractor standby time.

References

GeoEngineers, 2009. Appendix B, Final Sampling and Analysis Plan for Soil, Groundwater, and Stormwater, Reliable Steel Olympia Washington; *in: Final Work Plan, Remedial Investigation/Feasibility Study, Reliable Steel 1218 West Bay Drive NW Olympia Washington.* Prepared for the Washington State Department of Ecology on behalf of West Bay Reliable-0508, LLC. August 21, 2009.
https://fortress.wa.gov/ecy/gsp/CleanupSiteDocuments.aspx?csid=4076

Washington State Department of Ecology, 1991, *Guidance for Site Checks and Site Assessments for Underground Storage Tanks*, Toxics Cleanup Program Publication No. 90-52, Revised April 2003. http://www.ecy.wa.gov/biblio/9052.html.

Table B-1. Reliable Steel Interim Action Sampling and Analysis Table - Excavation Confirmation Samples

Sample Name	Location Description	Media	Relative Sample Depth	Analyses Constituents			
				Metals	TPH-G	TPH-Dx	BTEX
MT-W-1	Maintenance Building - west wall	Soil	sidewall	X			
MT-W-2	Maintenance Building - west wall	Soil	sidewall	X			
MT-N-1	Maintenance Building - north wall	Soil	sidewall	X			
MT-N-2	Maintenance Building - north wall	Soil	sidewall	X			
MT-N-3	Maintenance Building - north wall	Soil	sidewall	X			
MT-N-4	Maintenance Building - north wall	Soil	sidewall	X			
MT-N-5	Maintenance Building - north wall	Soil	sidewall	X			
MT-N-6	Maintenance Building - north wall	Soil	sidewall	X			
MT-N-7	Maintenance Building - north wall	Soil	sidewall	X			
MT-E-1	Maintenance Building - east wall	Soil	sidewall	X			
MT-E-2	Maintenance Building - east wall	Soil	sidewall	X			
MT-S-1	Maintenance Building - south wall	Soil	sidewall	X			
MT-S-2	Maintenance Building - south wall	Soil	sidewall	X			
MT-S-3	Maintenance Building - south wall	Soil	sidewall	X			
MT-S-4	Maintenance Building - south wall	Soil	sidewall	X			
MT-S-5	Maintenance Building - south wall	Soil	sidewall	X			
MT-S-6	Maintenance Building - south wall	Soil	sidewall	X			
MT-S-7	Maintenance Building - south wall	Soil	sidewall	X			
MT-B-1	Maintenance Building - base excavation	Soil	base	X			
MT-B-2	Maintenance Building - base excavation	Soil	base	X			
MT-B-3	Maintenance Building - base excavation	Soil	base	X			
MT-B-4	Maintenance Building - base excavation	Soil	base	X			
MT-B-5	Maintenance Building - base excavation	Soil	base	X			
MT-B-6	Maintenance Building - base excavation	Soil	base	X			
MT-BG-7	Maintenance Building - gasoline excavation base	Soil	base	X	X	X	X
MT-GS-1	Maintenance Building - gasoline excavation sidewall	Soil	sidewall	X	X	X	X
MT-GS-2	Maintenance Building - gasoline excavation sidewall	Soil	sidewall	X	X	X	X
HO-1	Heating Oil UST Excavation below tank	Soil	base			X	
HO-2	Heating Oil UST Excavation sidewall	Soil	sidewall			X	
HO-3	Heating Oil UST Excavation sidewall	Soil	sidewall			X	

Notes:

All Maintenance Building samples will be collected by Ecology and analyzed by Manchester Environmental Laboratory (MEL)

Heating Oil underground storage tank (UST) samples will be collected by the certified tank closure supervisor and analyzed at MEL.

Metals analyses include arsenic, cadmium, copper, lead, and mercury.

Depth of Maintenance Building metals excavation is 2 feet.

Depth of Maintenance Building gasoline excavation is approximately 6 feet.

Depth of heating oil UST excavation is approximately 10 feet.

TPH-G = Total Petroleum Hydrocarbons - gasoline range

TPH-D = Total Petroleum Hydrocarbons - diesel range

TPH-O = Total Petroleum Hydrocarbons - heavy oil range

BTEX = benzene, toluene, ethylbenzene, and total xylenes

Table B-2. Reliable Steel Interim Action Sample Containers and Holding Times

Analysis	Matrix	Recommended Quantity	Container	Holding Time	Preservative
Total Metals	Soil	50 g	4 oz glass jar[1]	6 months	Cool to ≤6°C
BTEX	Soil	5 g for each analysis (sample, MS, MSD, dilutions)	(3) airtight sample capsules [2] (ESS Core N' OneTM Capsules) and Handle PLUS (1) 2-oz or 4-oz jar w/septum (for % solids determination)	Get cores to lab within 24 hours; 48 hours to preservation or analysis	Cool to ≤6°C OR Freeze between -7 and -20 °C (lower temperatures may compromise core seal)
NWTPH- Dx	Soil	250 g	8 oz glass jar	14 days	Cool to ≤6°C
NWTPH-Gx (Gasoline)	Soil	5 g for each analysis (sample, MS, MSD, dilutions)	(3) airtight sample capsules [2] (ESS Core N' OneTM Capsules) and Handle PLUS (1) 2-oz or 4-oz jar w/septum (for % solids determination)	Get cores to lab within 24 hours; 48 hours to preservation or analysis	Cool to ≤6°C OR Freeze between -7 and -20 °C (lower temperatures may compromise core seal)
Carcinogenic Polycyclic Aromatic Hydrocarbons (stockpiles for reuse only)	Soil	100 g	8 oz glass jar	14 days	Cool to ≤6°C; or freeze at -18°C

Notes:

[1] Containers cleaned as per OSWER Cleaning Protocol #9240.0-05.

[2] PLUS (3) extra for QC, one out of every 20 or fewer samples.