Remedial Investigation Data Report

Dakota Creek Industries
Anacortes, Washington

for
Port of Anacortes

October 11, 2010

GeoEngineers
Earth Science + Technology

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Plaza 600 Building
600 Stewart Street, Suite 1700
Seattle, Washington 98101
206.728.2674

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File No. 5147-006-05

October 11, 2010

Prepared for:

Port of Anacortes
P.O. Box 297
Anacortes, Washington 98221

Attention: Bob Elsner

Prepared by:

GeoEngineers, Inc.
Plaza 600 Building
600 Stewart Street, Suite 1700
Seattle, Washington 98101
206.728.2674

Christopher L. Bailey, PE
Project Engineer

John M. Herzog, PhD, LG
Principal

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1.0 INTRODUCTION

This document presents the results of the Remedial Investigation (RI) field study completed at the Dakota Creek Industries (DCI) shipyard facility (hereafter referred to as the "Site") located at 115 Q Avenue in Anacortes, Washington (Figure 1). The RI field study was conducted by the Port of Anacortes (Port) under Agreed Order No. DE-07TCPHQ-5080 with the Washington State Department of Ecology (Ecology). This RI Data Report has been completed in general accordance with the Ecology approved "Remedial Investigation/Feasibility Study and Interim Action Work Plan, Dakota Creek Industries" (Work Plan) dated April 1, 2008. Approval of this document by Ecology will fulfill the Port's requirement to complete an RI field study as described in Section VII of the Agreed Order.

The Work Plan summarized the existing environmental data from previous investigations and identified where data gaps existed in the environmental characterization of the Site. The purpose of the RI field study was to collect additional chemical analytical data to fill identified data gaps and to complete the delineation of the nature and extent of contamination at the upland and in-water portions of the Site. Investigation of the sediment area of the site was completed in March 2008, and the soil and groundwater investigations were completed in June 2008. Follow-up soil sampling and analysis was completed in October 2008.

The Site is currently undergoing redevelopment to expand the shipyard facility. Completion of the Site redevelopment will result in modifications to the existing shoreline and basin areas as the result of dredging and filling activities. In advance of the redevelopment, an interim action was completed in accordance with Section VII of the Agreed Order to remove contaminated sediments from the marine area of the Site. The results of the interim action will be described in a separate report.

1.1. Site Description

The Site is located on the north side of the City of Anacortes and is bounded by the Port's Pier 1 to the west, Port Pier 2 to the east, 3rd Street on the south, and the Guemes Channel to the north (Figure 1). The Port currently leases the property comprising the Site to Dakota Creek Industries who operate a shipyard at the location.

DCI uses the shipyard facility for vessel construction and maintenance activities. Site features include: a pier (part of Pier 1), two outfitting docks (the "L Dock" and the "East Dock"), a dry dock, marine railways (now defunct), a synchrolift, upland fabrication areas, shops, a sandblast grit storage shed, warehouses and storage areas. The pier and marine railway structures have been removed as part of the Site redevelopment. A secured fence with guarded entrances surrounds the entire Site. Approximate locations of Site features, as identified prior to the initiation of redevelopment activities in July 2008 are shown in Figure 2.

1.1.1. Geology

The Site is relatively flat with a general ground surface elevation of approximately +15 feet Mean Lower Low Water (MLLW). The Site surface consists of areas of concrete asphalt and compacted gravel, as shown on Figure 2. Small, isolated and discontinuous vegetated areas are

also located in places at the Site. Upland soils throughout the Site are generally characterized as fill material overlying native glacial soils. The fill consists primarily of silt, sand, and gravel. Areas of wood debris, organic material, asphalt debris, concrete, and glass/tile debris were encountered in the fill unit. The thickness of the fill encountered in the borings completed for the RI ranged from approximately 1.5 feet to 9 feet. The native glacial deposits encountered at the Site consist of medium dense glaciomarine drift with varying amounts of silt, sand, and gravel over dense, glacially-compacted gravelly sands with silty interbeds.

Sediment deposits consisting of sandy silt with areas of coarse-grained gravelly sand overlie native glacial deposits consisting of hard silt and clay in the DCI basin. The sediments range from approximately 4 to 5 feet in thickness. Portions of the basin shoreline are armored with rip rap and bulkheads.

1.1.2. Groundwater

Groundwater elevations at the Site are influenced by tidal fluctuations and seasonal variations in groundwater recharge. The average groundwater elevations at the Site range from +6.58 feet MLLW (near the shoreline) to +10.6 feet MLLW (near 3rd Street). The groundwater flow direction at the Site is generally northward in the direction of the Guemes Channel based on groundwater elevation measurements. More detail regarding the hydrogeology at the Site is included in the Groundwater Investigation section of this report and the Groundwater Evaluation appendix (Section 4.3 and Appendix C).

1.2. Site History

The Site has been used for bulk fuel storage, shipping, shipbuilding, ship repairs and other maritime-related industrial purposes since approximately 1879. A ferry dock, which was located near existing Pier 1, was also used at the Site in the early 1900s. Two marine railways were historically used at the Site, both were partially removed in the early 1990s. The remaining parts of the marine railways were removed as part of the planned redevelopment activities. The "1975 fill area" located in the southwestern portion of the Site was formerly a residential area containing houses from before 1925 until after approximately 1966 based on a review of historical Sanborn maps and aerial photographs. The area was filled sometime around 1975 as part of the shipyard expansion. Historic property features are shown on Figure 3.

A historical outfall from the former Scott Paper Mill had discharged near the mouth of the basin (Figure 3) in about 1961. In 1970 the outfall was extended 680 feet to beyond the outer harbor line into the Guemes Channel. Use of the Former Scott Paper Mill outfall was discontinued in 1978. Both municipal and Site storm drainage systems have also historically discharged to the basin. DCI's stormwater is discharged under an individual state NPDES industrial stormwater permit.

Known historical dredging within the basin includes removal of approximately 50,000 CY of sediment as part of the synchrolift construction. Sediment was dredged to a depth of -35 feet MLLW directly beneath the synchrolift and -15 feet MLLW in the area immediately east of the lift. The extent of the dredged area is shown on Figure 4.

Additional information regarding the history of the Site is included in the Work Plan.

1.3. Previous Environmental Investigations

Details of historic Site investigations are discussed in the Work Plan and are summarized in the following sections. Historic sampling locations (sediment, soil and groundwater) are shown on Figure 4 and Figure 5.

1.3.1. Sediment

Surface and subsurface sediments were characterized in the DCI basin during investigations completed between 1985 and 2007. Sediment data were compared to Washington Sediment Management Standards (SMS) sediment quality standards (SQS) and cleanup screening levels (CSL) and/or to Dredge Material Management Program (DMMP) criteria for dredge material disposal characterization as part of the previous investigations.

Exceedances of the SQS and/or CSL for metals (arsenic, copper, mercury, and zinc), and semi-volatile organic compounds (SVOCs) (polycyclic aromatic hydrocarbons [PAHs], bis(2-ethylhexyl)phthalate and dibenzofuran) were detected in the samples collected from surface sediments in the near shore portion of the basin. Dioxins and furans were also detected in surface sediments in the basin at concentrations greater than the Fidalgo Bay and Padilla Bay reference samples.

SVOCs (PAHs) exceedances were identified in subsurface sediments in the near shore portion of the DCI basin during sediment investigations completed to support DMMP disposal characterization. Dioxins and furans were detected in subsurface sediment samples. The dredged material characterization study data indicated that the sediment in the near shore dredge material management unit (DMMU-2) was unsuitable for DMMP open water disposal and that the sediment in the DMMU (DMMU-1) in the north portion of the basin was suitable for open-water disposal.

1.3.2. Soil and Groundwater

Site soil and groundwater were characterized during investigations completed between 1991 and 2006. Soil data historically collected at the Site were compared to the preliminary cleanup levels identified for the Voluntary Cleanup Program (VCP)-RI/FS Cleanup Action Plan (CAP) in 2002 (Landau 2002a, b, c). The soil cleanup levels used for the pre-2002 Site investigations are discussed in the Work plan and the 2002 VCP-RI/FS CAP report. Groundwater data historically collected at the Site were compared to Ecology's Model Toxics Control Act (MTCA) Method B cleanup levels. Additional information regarding the historical upland investigations at the Site is included in the Work Plan.

Contaminants identified in soil during historic investigations at the Site include: pesticides (endrin and endrin aldehyde), carcinogenic PAHs (cPAHs), metals (arsenic, copper, lead, mercury, nickel, silver and zinc), organotins, polychlorinated biphenyls (PCBs) (Aroclor 1262), methylene chloride, bis(2-ethylhexyl)phthalate, 2-methylnapthalene and petroleum hydrocarbons (gasoline-, diesel- and heavy oil-range).

Independent cleanup actions completed in 2002 (Landau 2002a, b, c) included soil excavation and disposal in the central and east portions of the Site (Figure 4).

Contaminants remaining in soil at concentrations greater than the preliminary soil cleanup levels identified in the Work Plan include heavy oil-range petroleum hydrocarbons, cPAHs, metals (including arsenic, copper, mercury, nickel, silver, and zinc), and methylene chloride.

Contaminants in groundwater at the Site identified during historic investigations included arsenic, diesel-range and oil-range petroleum hydrocarbons exceedances of MTCA Method B cleanup levels. However, the groundwater performance monitoring completed since the 2002 independent cleanup actions has shown that all compounds except arsenic had attenuated to concentrations less than MTCA Method B cleanup levels.

1.4. Site Redevelopment

The Port and DCI (tenant) are completing a redevelopment of both the upland and offshore areas of the Site to increase the capacity and efficiency of operations and to improve stormwater management capabilities for the Site. The redevelopment project, Project Pier 1, includes the installation of a new bulkhead and dredging to approximately -35 MLLW in the basin to allow for more efficient dock-side work and dry-docking within the basin. Some of the existing upland buildings will be demolished in order to allow for more efficient use of the existing ship fabrication and repair area and construction of a stormwater treatment plant.

Redevelopment activities completed to date include the placement of clean structural fill in the area south (shoreward) of a planned bulkhead and the removal of marine railway structures.

1.5. Contaminants of Potential Concern

Based on the evaluation of existing data presented in the Work Plan, contaminants of potential concern (COPCs) for the site are the following:

Sediment

- Metals;
- SVOCs/PAHs;
- Chlorinated benzenes;
- Phthalate esters;
- Miscellaneous extractables including: dibenzofuran, hexachlorobutadiene, hexachloroethane, n-nitrosodiphenylamine;
- PCBs; and
- Ionizable organic compounds.

Soil and Groundwater

- Petroleum hydrocarbons (gasoline- and diesel-range);
- Methyl tertiary-butyl ether (MTBE);
- Dibromoethane, 1-2 (EDB)/dichloroethane, 1-2 (EDC);
- Metals;
- SVOCs (including PAHs); and
- Dioxins and furans.

2.0 REMEDIAL INVESTIGATION FIELD STUDY ACTIVITIES

The remedial investigation field study of the site was completed between March and October 2008. Sampling locations, field methodology and chemical analyses completed for the RI are summarized in the following sections. A detailed description of marine area and upland sampling methodology is presented in the Sampling and Analysis Plan section of the Work Plan. Field procedures and exploration logs are included in Appendix A to this report and chemical analytical laboratory reports and data quality review are included in Appendix B.

2.1. Sediment Investigation

2.1.1. Sediment Sample Collection

The sediment samples were collected in general accordance Ecology-approved Work Plan from seven locations (G-1 through G-7) within the DCI basin as shown on Figure 6. The sediment samples collected on the south side of the basin were located where historic sample locations identified metals, PAHs and/or PCBs detections at concentrations greater than SMS criteria.

Sediment samples on the east and west sides of the basin were collected using vibracore sampling equipment operated from a vessel outfitted for that purpose. The sediment samples located along the shoreline on the south side of the basin were collected using hollow stem auger (rotary drill) operated from a limited access rig. Sediment samples were collected from the surface (upper 10 to 20 centimeters [cm]) sediment and from each 1-foot interval to approximately 5 feet below the sediment surface, at or near the geologic contact with native materials.

The following deviation from the Work Plan was noted during the RI field study:

- Sediment sample location G-2 was moved approximately 15 feet to the west due to core refusal. The core sampler could only be advanced to a depth of 2 feet below the sediment surface at the original location. Core refusal was encountered at 4 feet below the sediment surface at the final location of sample G-2.

2.1.2. Sediment Sample Chemical Analyses

The sediment samples were submitted to Analytical Resources Inc. (ARI) laboratory in Tukwila, Washington for the following SMS COPCs:

- Metals using EPA Method 6000/7000;
- Ionizable and non-ionizable organic compounds (including SVOCs/PAHs) using EPA Method 8270SIM;
- PCBs using EPA Method 8082;
- Pesticides/herbicides using EPA Method 8082;
- VOCs using EPA Method 8260B;
- Tributyltins by Krone Method; and
- Conventional parameters (including total organic carbon, total sulfides, total solids, total volatile solids, ammonia and grain size) by various methods.

Initial sample intervals submitted for chemical analysis were based on the location and depth of historic COPC exceedances at the Site. Follow-up samples were submitted for analysis of SMS contaminants of concern based on the analytical results of the first round of analyses relative to the SMS comparative criteria. Shallow follow-up samples were not analyzed if a deeper initial sample exceeded COPCs. For instance, the 0-1' and 1'-2' samples collected at sample locations G-4 and G-6 were not analyzed because COPCs were present in the deeper 2'-3' interval samples that were analyzed in the first round. Porewater tributyltin was not included in the second round of analyses due to the low detected concentrations in the initial round of testing. Sediment sampling locations are shown in Figures 6 and 7.

2.2. Soil Investigation

2.2.1. Soil Sample Collection

Soil samples were collected in general accordance with the Ecology Approved Work Plan at the thirty locations as identified on Figure 6.

Soil samples were collected from using hollow stem auger drilling equipment or hand auger equipment. Subsurface soil samples were also collected from 10 test pits using backhoe equipment. Soil samples were collected continuously from the surface to the final depth of each hand auger, boring or test pit (ranging from 3 feet to 19 feet below ground surface [bgs]). Site soil was visually characterized during sample collection and soil characteristics were recorded on field logs for each boring. The boring/test pit logs are included as Appendix A. Geologic cross-sections were prepared based on soil characteristics observed during recent and previous investigation activities. Cross-section locations are shown on figures 8 and 10 and the cross-sections are presented on Figures 11 and 12.

The following deviations from the Work Plan were noted during the RI field investigation.

- Five boring/hand auger locations (SB-1, SB-2, SB-4, SB-7 and SB-11) were adjusted in the field due to the presence of equipment and a fence.
- Ten test pits (TP-3 through TP-5 and TP-10 through TP-16) were completed on the east portion of the Site in October 2008. The purpose of the test pits was to supplement the existing data in this area of the site to further evaluate the limits of arsenic, copper and zinc exceedances.

2.2.2. Soil Chemical Analyses

Selected soil samples collected were submitted for analysis of the one or more of the following COPCs:

- Metals: arsenic, copper, and zinc by EPA Method 6000/7000 series;
- PAHs by SW-846 8270-SIM;
- Gasoline-range hydrocarbons by NWTPH-Gx;
- Diesel- and oil-range petroleum hydrocarbons by NWTPH-Dx with silica gel cleanup;
- Extractable petroleum hydrocarbons (EPH) by WDOE-EPH;
- VOCs including MTBE, EDB, and EDC by EPA Method 8260B and 8011; and
- Dioxins and furans using EPA Method 8290 or EPA Method 1613B (high resolution gas chromatographs/high resolution mass spectrometry [HRGC/HRMS]).

2.3. Groundwater Investigation

The groundwater investigation activities were completed in general accordance with the Ecology approved Work Plan. The groundwater investigation included the installation and development of one monitoring well, manually measuring groundwater levels and collection of groundwater samples from the five existing monitoring wells at the Site, completing a tidal study, and completing a hydraulic conductivity study as described in the Work Plan and summarized in the following sections.

2.3.1. Monitoring Well Installation and Development

Monitoring well MW-5 was installed in May 2008 to supplement the existing monitoring well network at the site. Well MW-5 is located north of the aluminum shop within the boundary of the 2002 petroleum hydrocarbon remedial investigation area as shown on Figure 6. The monitoring well was installed using hollow stem auger drilling equipment operated by Cascade Drilling, Inc. of Woodinville, Washington.

Monitoring well MW-5 was completed as a 2-inch-diameter well with 15 feet of screen placed from 4 feet to 19 feet bgs (the completed depth of the boring). The base of the new monitoring well was completed within a silt unit that appears to be a confining unit. The top of the native silt confining unit was encountered at approximately 17 feet bgs and the bottom of the silt unit was not encountered. Groundwater was measured at a depth of 9 feet bgs at the time of drilling.

Monitoring well MW-5 was developed after installation using a stainless steel bailer that was decontaminated prior to use. The well was redeveloped in June 2008 using a dedicated poly-bailer prior to groundwater sample collection. Decontamination water and purge water were placed in a 55-gallon steel drum labeled with the project identification, date and contents.

2.3.2. Groundwater Monitoring

Groundwater monitoring (including sampling for chemical analytical testing, an aquifer test, and a tidal evaluation) was conducted in general accordance with the procedures described in the Work Plan.

2.3.2.1. GROUNDWATER SAMPLE COLLECTION

Groundwater samples were collected for chemical analytical testing using a peristaltic pump and disposable polyethylene tubing using low-flow/low-turbidity sampling techniques. A Horiba U-22 water quality measuring system (with flow-through-cell) was used to monitor water quality parameters during purging. The water quality parameters monitored during sampling included; electrical conductivity, dissolved oxygen, pH, salinity, total dissolved solids, turbidity, oxidation-reduction potential and temperature. Ambient groundwater conditions were considered to be achieved once these parameters varied by less than 10 percent on three consecutive measurements.

No deviations from the Ecology-approved Work Plan were identified.

2.3.2.2. GROUNDWATER CHEMICAL ANALYSES

The groundwater samples collected were submitted for analysis of one or more of the following COPCs:

- Metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc) by EPA Method 6000/7000 series;
- Gasoline-, diesel- and heavy oil-range petroleum hydrocarbons by NWTPH-Gx and NWTPH-Dx with silica gel cleanup;
- SVOCs/PAHs by EPA Method 8270 SIM;
- VOCs by EPA Method 8260B;
- Pesticides/herbicides by EPA Method 8081 / 8151; and
- Dioxins and Furans using EPA Method 8290 or EPA Method 1613B (high resolution gas chromatographs/high resolution mass spectrometry [HRGC/HRMS]).

2.3.2.3. HYDRAULIC CONDUCTIVITY STUDY

Falling-head and rising-head aquifer slug tests were completed in monitoring wells MW-1 through MW-5 on June 16, 2008 to estimate the hydraulic conductivity (permeability) of the aquifer at the Site. The aquifer slug tests were completed in general accordance with ASTM D 4044-96 (2002).

The aquifer slug tests were completed using a pressure sensor (Instrumentation Northwest PT2X, 15 pounds per square inch range, vented, with built-in data logger) inserted into each well casing and suspended near the bottom of the well during the testing. The falling-head slug test in each well consisted of quickly lowering a slug rod of known volume into the well with a length of dedicated cord. The pressure sensor recorded the water levels in the well at 1- to 15-second intervals as the water level dropped after insertion of the slug rod. Measurements continued until the water table returned to the approximate initial water level. The rising-head slug test consisted of quickly removing a slug rod of known volume from the well and recording water levels as described for the falling-head slug test.

The slug test response data was analyzed using the Bouwer and Rice Method. A more detailed discussion of the specific procedures used for the aquifer slug test is included in Appendix C.

2.3.2.4. 72-HOUR TIDAL STUDY

A three-day tidal study was conducted from June 17 to June 20, 2008 to evaluate the response of groundwater levels at the Site to tidal fluctuations in the basin. Initial water levels in monitoring wells MW-1 through MW-5 and in the basin were measured relative to surveyed points with an electric water level indicator. Pressure sensors (Instrumentation Northwest PT2X, 15 or 30 psi range, vented, with built-in data loggers) were placed in the inner basin (attached to the east dock) and in the five Site monitoring wells. The pressure sensors recorded water levels at five-minute intervals throughout the tidal study. A more detailed discussion of the specific procedures used for the tidal study is included in Appendix C of this report.

3.0 PRELIMINARY CLEANUP LEVELS

Preliminary cleanup levels were developed with input and review from Ecology as part of the Work Plan development. Identification of the preliminary cleanup levels included evaluation of the

potential exposure pathways for human and environmental impacts based on the planned land use (industrial). The Site is zoned industrial (manufacturing/shipping) and is currently used as a shipyard. Access to the Site is limited because of tenant security measures including perimeter fencing and controlled gateways. The Port plans to continue leasing the property to DCI for shipyard use over the long-term.

3.1. Sediment

SQS and CSL criteria established under the SMS (WAC 173-204) were identified as the preliminary sediment cleanup levels for the Site. No SMS cleanup levels have been established for dioxins and furans.

3.2. Soil

Preliminary soil cleanup levels were based on potential exposure pathways that may include direct contact and soil leaching to groundwater (protection of groundwater). Additionally, cleanup levels and/or risk-based remediation levels for specific land uses and associated institutional controls may be considered as a component of cleanup alternative development and evaluation during the Feasibility Study (FS). The preliminary soil cleanup levels are summarized on Table 1.

MTCA Method A (Industrial Land Use) cleanup levels, MTCA Method C cleanup levels and Washington State background concentrations for metals (Ecology, 1994) were used as preliminary soil cleanup levels based on the industrial zoning and the current and planned industrial use of the Site. The preliminary soil cleanup levels were selected from available state soil criteria and the most conservative (lowest) published values were selected from regulatory criteria. Analytical method detection limits for the individual contaminants of concern were also considered as part of the preliminary cleanup level determination.

3.2.1. Terrestrial Ecological Evaluation

Ecology requested that the Port complete a Terrestrial Ecological Evaluation (TEE) to determine if ecological based soil cleanup levels are applicable to the Site. At the request of the Port, Dave Sternberg and Sandra Caldwell visited the Site in August 2008 to observe the different surface materials comprising the Site. Although largely unpaved, the compacted gravel surface of the shipyard is used as an operational surface for site vehicles and shipbuilding activities. WAC 173-340-7491(1)(b) outlines an exclusion for sites where all contaminated soil "is, or will be, covered by physical barriers that will prevent plants or wildlife from being exposed to the soil contamination." Compacted gravel, depending on the thickness, distribution and degree of compaction, may be considered a "physical barrier" for purposes of the exclusion criteria. The unpaved areas of the Site are generally comprised of compacted gravel and are used as roadways and staging areas for ship construction. There are several small, discontinuous greenspace areas on Site that comprise a total of approximately 1,605 square feet (0.04 acre) as shown on Figure 2.

Based on observations of the Site, Ecology concluded that the majority of surface materials, although not paved, provided little to no habitat value because they are maintained as compacted gravel roadways and work surfaces.

The Simplified TEE Exposure Analysis calculation for the Site is shown in Appendix D, Table D-1 (from WAC 173-340-7492(2)(a)(ii) Table 749-1). For this analysis, the compacted gravel areas were treated as "other barriers" to wildlife at the direction of Ecology. The result of the "Simplified Terrestrial Ecological Evaluation – Exposure Analysis Procedure" (WAC 173-340-7492(2)(a)(ii)) shows that the Site can be excluded from further TEE evaluation.

3.3. Preliminary Groundwater Cleanup Levels

Groundwater at the Site is not used for drinking water at this time. Groundwater is not a reasonable future source of drinking water due the availability of a municipal water supply and, in accordance with WAC 173-340-720(2)(d), due to its proximity to marine surface water. The potential exposure pathways for Site groundwater include:

- Human ingestion of marine organisms contaminated by releases of affected Site groundwater to adjacent marine surface water.
- Acute or chronic effects to aquatic organisms resulting from exposure to constituents in groundwater discharging to adjacent marine surface water.

Preliminary groundwater cleanup levels were selected from available state and federal surface water criteria according to WAC 173-340-730(3). The most conservative (lowest) published values were selected from regulatory criteria. The preliminary groundwater cleanup levels are summarized on Table 2.

Surface water criteria are not available for gasoline-, diesel-, and oil-range petroleum hydrocarbons. Therefore, as recommended in WAC 173-340-730(3)(b)(iii)(C), the MTCA Method A groundwater cleanup levels for gasoline-, diesel-, and oil-range petroleum hydrocarbons were used as the MTCA Method B surface water cleanup levels for these analytes.

4.0 REMEDIAL INVESTIGATION FIELD STUDY RESULTS

4.1. Comparison of Sediment Analytical Results to Preliminary Cleanup Levels

The sediment chemical analytical results were compared to the SMS, SQS and CSL criteria and are summarized below. Sediment chemical analytical results, including those from historical sampling events, are summarized in Table 3 and presented on Figure 7. Laboratory reports and data quality assurance summaries are included as Appendix B.

Sediment samples were collected at seven sampling locations (G-1 through G-7). Surface samples were collected from the upper 20 cm of sediment at each location. SMS SQS and/or CSL criteria were exceeded at five sampling locations (G-2 through G-6), as follows:

- Mercury was detected at a concentration exceeding the SQS criteria in the surface sample G-2 collected from the east side of the basin. Mercury was not detected in the sample collected from 1.5 feet below the sediment surface at this location.
- Metals (copper, lead, and mercury) and dibenz(a,h)anthracene exceeded SQS and CSL criteria, and concentrations of PAHs and PCBs exceeded the SQS criteria in the surface sediment sample G-3 collected from the southeast corner of the basin. Concentrations of metals

(copper, lead, mercury, and zinc) exceeded the SQS and CSL criteria, and concentrations of PAHs and PCBs exceeded the SQS criteria in the sample collected from the subsurface sediment (4- to 5-foot-depth interval) at this location.

- Metals (copper, lead, and mercury) and 2,4-dimethylphenol concentrations exceeded the SQS and CSL criteria, and arsenic, zinc, PAHs and PCBs concentrations exceeded the SQS criteria in the subsurface (2- to 3-foot-depth interval) sediment sample G-4 collected from the southeast portion of the basin, near the old marine rail remnant. Bis(2-ethylhexyl)phthalate and n-nitrosodiphenylamine concentrations exceeded the SQS and CSL criteria in the sample collected from the 4- to 5-foot-depth interval at this location.
- Metals (arsenic, copper, mercury, and zinc), and bis(2-ethylhexyl)phthalate concentrations exceeded the SQS and CSL criteria and PAHs and PCBs concentrations exceeded the SQS criteria in the surface sediment sample G-5 collected from the near the west side of the former Joiner Shop.
- Metals (copper and mercury) concentrations exceeded the SQS and CSL criteria, and PAHs concentrations exceeded the SQS criteria in the subsurface (2 feet to 3 feet depth interval) sediment sample G-6 collected from the southwest portion of the basin.

Benzyl alcohol was detected in the 1- to 2-foot-depth interval at sample location G-1, located near the east side of the basin. The concentration was marginally higher than the SQS criteria. However, the laboratory reported that the benzyl alcohol concentration is an estimate due to quality assurance and control results being outside of the laboratory limits. It should also be noted that benzyl alcohol was not detected using the full scan EPA Method 8270. Benzyl alcohol was not detected in the surface sample collected at this location. Other analytes were either not detected or were detected at concentrations less than the SMS criteria in the sediment samples.

4.2. Comparison of Soil Analytical Results to Preliminary Cleanup Levels

The soil chemical analytical results are summarized in Table 4 with reference to the preliminary soil cleanup levels (Table 1). Exceedances of the preliminary soil cleanup levels are summarized in Table 5 and shown on Figures 8, 9, and 10. Laboratory reports are included as Appendix B. Concentrations of the following analytes were greater than the associated preliminary cleanup levels.

- Arsenic concentrations exceeded the preliminary cleanup level (7 mg/kg) in surface samples collected at SB-1, SB-12, SB-14 and SB-15 and in the subsurface (2- to 4-feet bgs) soil samples collected at SB-12, TP-5 and TP-13.
- Copper concentrations exceeded the preliminary cleanup level [36 milligrams per kilograms (mg/kg)] in the surface samples collected at SB-12 through SB-15 and the subsurface (2- to 4-feet bgs) soil samples collected at SB-12, SB-13, TP-5, TP-10, and TP-12 through TP-16.
- Zinc concentrations exceeded the preliminary cleanup level (100 mg/kg) in the surface soil samples collected at SS-1, SS-3, SS-4, SB-14, and SB-15; the subsurface (2 feet to 4 feet bgs) soil samples collected at SB-11, SB-13, TP-5, TP-13 and TP-14; and the surface and subsurface (4 feet bgs) soil samples collected at SB-8, SB-10 and SB-12.
- Dioxins/furans concentrations exceeded the analytical laboratory reporting limit (5.0E-07 mg/kg) in subsurface (3 feet bgs) soil samples collected at SB-4 and SB-5.

All other analytes were either not detected or were detected at concentrations less than the associated preliminary cleanup levels in the samples collected and analyzed.

4.3. Groundwater Characterization

Groundwater characterization at the Site included groundwater level measurements, a tidal study and aquifer conductivity testing. A detailed discussion of the methods used and results of the hydrogeologic characterization is included in Appendix C.

4.3.1. Hydrogeology

Two hydrogeologic units have been identified at the Site based on the geologic information collected, a shallow aquifer and a confining unit. The shallow water-bearing unit on Site is comprised of sand and gravel fill and native coarse sand. Groundwater is encountered at depths ranging from 5- to 10-feet bgs. The base of the fill extends to an approximate maximum depth of 9 feet and is underlain by native coarse sand horizon. A silt confining unit (aquitard) was encountered below the native coarse sand at a depth of 17 feet bgs.

4.3.2. Groundwater Levels and Tidal Influence

Groundwater elevations measured prior to sample collection ranged from approximately +5.33 feet MLLW in MW-2 to +10.6 feet MLLW in MW-4. The average direction of groundwater flow at the Site is north towards the shoreline. Approximate well locations and the average direction of groundwater flow at the Site as measured in June 2008 are shown in Appendix C, Figure C-7.

4.3.3. Tidal Study and Aquifer Conductivity Testing

The results of the tidal study indicate that groundwater levels in monitoring wells close to the basin (MW-2 and MW-3) fluctuated moderately with tidal fluctuations and that groundwater levels in monitoring wells located over 100 feet from the basin show little or no response to tidal fluctuations.

The results of the slug tests indicate the estimated average value of the hydraulic conductivity at the five monitoring wells is 9.1×10^{-4} centimeters per second. This value of hydraulic conductivity is consistent with the stratified soil types (layers of sand, gravel, silt and clay) observed in the monitoring well borings.

4.4. Comparison of Groundwater Analytical Results to Preliminary Cleanup Levels

The groundwater chemical analytical results are summarized in Table 6 with reference to preliminary groundwater cleanup levels. Laboratory reports are included as Appendix B. Exceedances of the preliminary groundwater cleanup levels are summarized in Table 7 and Figure 13. Concentrations of the following analytes were greater than the associated preliminary cleanup levels.

- Arsenic was detected at a concentration exceeding the preliminary cleanup level in the groundwater sample collected from MW-4 and MW-5.
- Mercury was detected at a concentration marginally exceeding the preliminary cleanup level in the sample collected from MW-1.

All other analytes were either not detected or were detected at concentrations less than the preliminary groundwater cleanup levels in all of the monitoring well samples.

5.0 LIMITATIONS

This report has been prepared for the exclusive use of the Port of Anacortes, their authorized agents and regulatory agencies in their evaluation of the interim remedial action at the Port of Anacortes Dakota Creek Industries Site located at 115 Q Avenue in Anacortes, Washington. No other party may rely on the product of our services unless we agree in advance and in writing to such reliance.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

6.0 REFERENCES

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TABLES

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TABLE 1
PRELIMINARY SOIL CLEANUP LEVELS
REMEDIAL INVESTIGATION DATA REPORT
DAKOTA CREEK INDUSTRIES
PORT OF ANACORTES

Analytes	Units	Soil Criteria					Analytical Laboratory Criteria[6]		Preliminary Soil Cleanup Level[7]	
		Washington State Background[1]	MTCA Method A Industrial Land Use[2]	MTCA Method C Industrial Land Use[3]		MTCA Method C Protection of Surface Water[4]	Reporting Limits	Analytical Method	Unsaturated	Source
				Carcinogen	Noncarcinogen					
Total Petroleum Hydrocarbons										
Gasoline-Range	mg/kg	--	30/100	--	--	--	5.0E+00	NW-TPH-Gx	30/100	2
Diesel-Range	mg/kg	--	2,000	--	--	--	5.0E+00	NW-TPH-Dx	2,000	2
Oil-Range	mg/kg	--	2,000	--	--	--	1.0E+01	NW-TPH-Dx	2,000	2
Mineral Oil	mg/kg	--	4,000	--	--	--	1.0E+01	NW-TPH-Dx	4,000	2
Metals										
Arsenic	mg/kg	7.0E+00	2.0E+01	8.8E+01	1.1E+03	5.7E-02	5.0E+00	6010B ICP	7.0E+00	1
Barium	mg/kg	--	--	--	7.0E+05	--	3.0E-01	6010B ICP	7.0E+05	3
Cadmium	mg/kg	1.0E+00	2.0E+00	--	3.5E+03	1.2E+00	2.0E-01	6010B ICP	1.2E+00	4
Chromium	mg/kg	4.8E+01	2.0E+03	--	5.3E+06	4.8E+06	5.0E-01	6010B ICP	2.0E+03	2
Copper	mg/kg	3.6E+01	--	--	1.3E+05	1.4E+00	2.0E-01	6010B ICP	3.6E+01	1
Lead	mg/kg	2.4E+01	1.0E+03	--	--	1.6E+03	2.0E+00	6010B ICP	1.0E+03	2
Mercury	mg/kg	7.0E-02	2.0E+00	--	1.1E+03	2.6E-02	5.0E-02	7471A GFAA & CVAA	7.2E-02	1
Nickel	mg/kg	4.8E+01	--	--	7.0E+04	1.1E+01	1.0E+00	6010B ICP	4.8E+01	1
Selenium	mg/kg	--	--	--	1.8E+04	7.4E+00	5.0E+00	6010B ICP	7.4E+00	4
Silver	mg/kg	--	--	--	1.8E+04	3.2E-01	3.0E-01	6010B ICP	3.2E-01	4
Zinc	mg/kg	8.5E+01	--	--	1.1E+06	1.0E+02	1.0E+00	6010B ICP	1.0E+02	4
Volatile Organic Compounds										
Benzene	mg/kg	--	3.0E-02	2.4E+03	1.4E+04	1.3E-01	1.0E-03	EPA 8260B	3.0E-02	2
Ethylbenzene	mg/kg	--	6.0E+00	--	3.5E+05	2.1E+01	1.0E-03	EPA 8260B	6.0E+00	2
Toluene	mg/kg	--	7.0E+00	--	2.8E+05	1.1E+02	1.0E-03	EPA 8260B	7.0E+00	2
Xylene	mg/kg	--	9.0E+00	--	7.0E+05	--	1.0E-03	EPA 8260B	9.0E+00	2
1,2,4-Trimethylbenzene	mg/kg	--	--	--	1.8E+05	--	1.0E-03	EPA 8260B	1.8E+05	3
1,2-Dichlorobenzene	mg/kg	--	--	--	3.2E+05	1.5E+01	1.0E-03	EPA 8260B	1.5E+01	4
1,3,5-Trimethylbenzene	mg/kg	--	--	--	1.8E+05	--	1.0E-03	EPA 8260B	1.8E+05	3
1,4-Dichlorobenzene	mg/kg	--	--	5.5E+03	--	8.1E-02	1.0E-03	EPA 8260B	8.1E-02	4
2-Butanone	mg/kg	--	--	--	2.1E+05	--	5.0E-03	EPA 8260B	2.1E+05	3
4-Isopropyltoluene	mg/kg	--	--	--	--	--	1.0E-03	EPA 8260B	--	--
Acetone	mg/kg	--	--	--	3.5E+05	--	1.0E-03	EPA 8260B	3.5E+05	3
Carbon disulfide	mg/kg	--	--	--	3.5E+05	--	1.0E-03	EPA 8260B	3.5E+05	3
Isopropylbenzene	mg/kg	--	--	--	3.5E+05	--	1.0E-03	EPA 8260B	3.5E+05	3
Methylene chloride	mg/kg	--	2.0E-02	1.8E+04	2.1E+05	2.6E+00	2.0E-03	EPA 8260B	2.0E-02	2
n-Butylbenzene	mg/kg	--	--	--	--	--	1.0E-03	EPA 8260B	--	--
n-Propylbenzene	mg/kg	--	--	--	--	--	1.0E-03	EPA 8260B	--	--
sec-Butylbenzene	mg/kg	--	--	--	--	--	1.0E-03	EPA 8260B	--	--
Semivolatile Organic Compounds										
Dibenzofuran	mg/kg	--	--	--	7.0E+03	--	6.7E-02	EPA 8270	7.0E+03	3
Carbazole	mg/kg	--	--	6.6E+03	--	--	6.7E-02	EPA 8270	6.6E+03	3
Di-n-butylphthalate	mg/kg	--	--	--	3.5E+05	1.0E+02	6.7E-02	EPA 8270	1.0E+02	4
Bis(2-ethylhexyl)phthalate	mg/kg	--	--	9.4E+03	7.0E+04	4.8E+00	6.7E-02	EPA 8270	4.8E+00	4
Phenol	mg/kg	--	--	--	2.1E+06	5.0E+03	6.7E-02	EPA 8270	5.0E+03	4
4-Chloro-3-methylphenol	mg/kg	--	--	--	--	--	3.3E-01	EPA 8270	--	--
Butylbenzyphthalate	mg/kg	--	--	--	2.1E+06	3.7E+02	6.7E-02	EPA 8270	3.7E+02	4

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Analytes	Units	Soil Criteria					Analytical Laboratory Criteria[6]		Preliminary Soil Cleanup Level[7]	
		Washington State Background[1]	MTCA Method A Industrial Land Use[2]	MTCA Method C Industrial Land Use[3]		MTCA Method C Protection of Surface Water[4]	Reporting Limits	Analytical Method	Unsaturated	Source
				Carcinogen	Noncarcinogen					
Polycyclic Aromatic Hydrocarbons										
1-Methylnaphthalene	mg/kg	–	5.0E+00	--	1.1E+03	--	5.0E-03	EPA 8270D SIM	5.0E+00	2
2-Methylnaphthalene	mg/kg	–	5.0E+00	--	1.4E+04	--	5.0E-03	EPA 8270D SIM	5.0E+00	2
Acenaphthene	mg/kg	--	--	--	2.1E+05	6.5E+01	5.0E-03	EPA 8270D SIM	6.5E+01	4
Acenaphthylene	mg/kg	--	--	--	--	--	5.0E-03	EPA 8270D SIM	--	--
Anthracene	mg/kg	--	--	--	1.1E+06	1.2E+04	5.0E-03	EPA 8270D SIM	1.2E+04	4
Benzo(a)anthracene	mg/kg	--	--	1.8E+01	--	1.3E-01	5.0E-03	EPA 8270D SIM	1.3E-01	4
Benzo(a)pyrene	mg/kg	--	2.0E+00	1.8E+01	--	3.5E-01	5.0E-03	EPA 8270D SIM	3.5E-01	4
Benzo(b)fluoranthene	mg/kg	--	--	1.8E+01	--	4.3E-01	5.0E-03	EPA 8270D SIM	4.3E-01	4
Benzo(g,h,i)perylene	mg/kg	--	--	--	--	--	5.0E-03	EPA 8270D SIM	--	--
Benzo(k)fluoranthene	mg/kg	--	--	1.8E+01	--	4.3E-01	5.0E-03	EPA 8270D SIM	4.3E-01	4
Chrysene	mg/kg	--	--	1.8E+01	--	1.4E-01	5.0E-03	EPA 8270D SIM	1.4E-01	4
Dibenz(a,h)anthracene	mg/kg	--	--	1.8E+01	--	6.5E-01	5.0E-03	EPA 8270D SIM	6.5E-01	4
Fluoranthene	mg/kg	--	--	--	1.4E+05	8.9E+01	5.0E-03	EPA 8270D SIM	8.9E+01	4
Fluorene	mg/kg	--	--	--	1.4E+05	5.5E+02	5.0E-03	EPA 8270D SIM	5.5E+02	4
Indeno(1,2,3-cd)pyrene	mg/kg	--	--	1.8E+01	--	1.3E+00	5.0E-03	EPA 8270D SIM	1.3E+00	4
Naphthalene	mg/kg	--	5.0E+00	--	7.0E+04	1.4E+02	5.0E-03	EPA 8270D SIM	5.0E+00	2
Phenanthrene	mg/kg	--	--	--	--	--	5.0E-03	EPA 8270D SIM	--	--
Pyrene	mg/kg	--	--	--	1.1E+05	3.5E+03	5.0E-03	EPA 8270D SIM	3.5E+03	4
Pesticides										
alpha-BHC	mg/kg	--	--	2.1E+01	--	2.0E-03	1.7E-03	EPA 8081	2.0E-03	4
beta-BHC	mg/kg	--	--	3.0E+00	--	2.0E-03	1.7E-03	EPA 8081	2.0E-03	4
delta-BHC	mg/kg	--	--	--	--	--	1.7E-03	EPA 8081	-	-
gamma-BHC (Lindane)	mg/kg	--	1.0E-02	1.0E+02	1.1E+03	1.6E-03	1.7E-03	EPA 8081	1.7E-03	5
Heptachlor	mg/kg	--	--	2.9E+01	1.8E+03	9.7E-03	1.7E-03	EPA 8081	9.7E-03	4
Aldrin	mg/kg	--	--	7.7E+00	1.1E+02	4.9E-02	1.7E-03	EPA 8081	4.9E-02	4
Heptachlor Epoxide	mg/kg	--	--	1.4E+01	4.6E+01	8.3E-02	1.7E-03	EPA 8081	8.3E-02	4
Endosulfan I	mg/kg	--	--	--	2.1E+04	2.2E-03	1.7E-03	EPA 8081	2.2E-03	4
Dieldrin	mg/kg	--	--	8.2E+00	1.8E+02	2.6E-02	3.3E-03	EPA 8081	2.6E-02	4
4,4'-DDE	mg/kg	--	--	3.9E+02	--	8.6E-02	3.3E-03	EPA 8081	8.6E-02	4
Endrin	mg/kg	--	--	--	1.1E+03	1.1E-02	3.3E-03	EPA 8081	1.1E-02	4
Endosulfan II	mg/kg	--	--	--	2.1E+04	2.2E-03	3.3E-03	EPA 8081	3.3E-03	5
4,4'-DDD	mg/kg	--	--	5.5E+02	--	4.6E-02	3.3E-03	EPA 8081	4.6E-02	4
Endosulfan Sulfate	mg/kg	--	--	--	2.1E+04	2.2E-03	3.3E-03	EPA 8081	3.3E-03	5
4,4'-DDT	mg/kg	--	4.0E+00	3.9E+02	1.8E+03	6.8E-01	3.3E-03	EPA 8081	6.8E-01	4
Methoxychlor	mg/kg	--	--	--	1.8E+04	8.0E-02	1.7E-02	EPA 8081	8.0E-02	4
Endrin Ketone	mg/kg	--	--	--	1.1E+03	1.1E-02	3.3E-03	EPA 8081	1.1E-02	4
Endrin Aldehyde	mg/kg	--	--	--	1.1E+03	1.1E-02	3.3E-03	EPA 8081	1.1E-02	4
gamma Chlordane	mg/kg	--	--	3.8E+02	1.8E+03	5.1E-02	1.7E-03	EPA 8081	5.1E-02	4

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		Washington State Background[1]	MTCA Method A Industrial Land Use[2]	MTCA Method C Industrial Land Use[3]		MTCA Method C Protection of Surface Water[4]	Reporting Limits	Analytical Method	Unsaturated	Source
				Carcinogen	Noncarcinogen					
alpha Chlordane	mg/kg	--	--	3.8E+02	1.8E+03	5.1E-02	1.7E-03	EPA 8081	5.1E-02	4
Toxaphene	mg/kg	--	--	1.2E+02	--	9.6E+00	1.7E-01	EPA 8081	9.6E+00	4
Polychlorinated Biphenyls										
Aroclor 1016	mg/kg	--	--	--	2.5E+02	1.4E-04	4.0E-03	8082 Low Level	4.0E-03	5
Aroclor 1221	mg/kg	--	--	--	--	1.3E-05	4.0E-03	8082 Low Level	4.0E-03	5
Aroclor 1232	mg/kg	--	--	--	--	1.3E-05	4.0E-03	8082 Low Level	4.0E-03	5
Aroclor 1242	mg/kg	--	--	--	--	5.8E-05	4.0E-03	8082 Low Level	4.0E-03	5
Aroclor 1248	mg/kg	--	--	--	--	5.6E-05	4.0E-03	8082 Low Level	4.0E-03	5
Aroclor 1254	mg/kg	--	--	--	7.0E+01	9.7E-05	4.0E-03	8082 Low Level	4.0E-03	5
Aroclor 1260	mg/kg	--	--	--	--	1.0E-03	4.0E-03	8082 Low Level	4.0E-03	5
Total PCBs	mg/kg	--	10 (capped soil); 1 (non-capped soil)	6.6E+01	--	4.0E-04	4.0E-03	8082 Low Level	4.0E-03	5
Dioxins and Furans										
2,3,7,8-TCDD	mg/kg	--	--	8.8E-04	--	1.5E-08	5.0E-07	1613/8290	5.0E-07	5
2,3,7,8-TCDF	mg/kg	--	--	8.8E-04	--	8.3E-09	5.0E-07	1613/8290	5.0E-07	5
-Penta, Hexa, Hepta	mg/kg	--	--	--	--	--	2.0E-06	1613/8290	2.0E-06	5
-Octa	mg/kg	--	--	--	--	--	5.0E-06	1613/8290	5.0E-06	5

Notes:

[1] Natural Background Soil Metals Concentrations in Washington State, Puget Sound Region. October 1994.

[2] MTCA Method A Soil Cleanup Levels [WAC 173-340-745(3) and Chapter 173-340 WAC Table 745-1].

[3] MTCA Method C Industrial Soil Cleanup Levels; Direct Contact ([WAC 173-340-745(5)(b)(iii)(B)].

[4] MTCA Method C Industrial Soil Cleanup Levels; Groundwater Protection ([WAC 173-340-745(5)(b)(iii)(A)]. Based on unsaturated soil.

[5] Chapter 173-340 WAC; Table 749-2 (Simplified Terrestrial Ecological Evaluation: Industrial or Commercial Site).

[6] Reporting limits (TPH, metals, PAHs, and PCBs) and minimum levels (TCDD) for ARI and Frontier Analytical, respectively.

[7] Preliminary Soil Cleanup Level is the lowest soil criteria as indicated by shading; adjusted based on Washington State background. Additional adjustments were made based on reporting limits or minimum levels per WAC 173-340-720(7)(c). Simplified TEE soil concentrations were not considered in the identification of the Preliminary Soil Cleanup Level due to the nature of the site. However, the TEE criteria were used to identify data gaps and will be used to identify site cleanup levels if required based on the simplified terrestrial ecological evaluation to be conducted as part of the RI.

Shading indicates value was selected as the Applicable Soil Cleanup Level.

-- Cleanup levels not developed for constituent

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TABLE 2
PRELIMINARY GROUNDWATER CLEANUP LEVELS
REMEDIAL INVESTIGATION DATA REPORT
DAKOTA CREEK INDUSTRIES
PORT OF ANACORTES

Analytes	Units	Groundwater Criteria		Surface Water Criteria							Analytical Laboratory Criteria[1]		
				Ch. 173-201A WAC[5]	Section 304 of the Clean Water Act[6]		40 CFR Part 131[7]		WAC 173-340-730[8]				
		Washington State Groundwater Background Concentrations[3]	Petroleum Hydrocarbons Method A Cleanup Levels for Groundwater[4]	Surface Water ARAR Protection of Aquatic Life - Marine/Chronic	Surface Water ARAR Protection of Aquatic Life - Marine/Chronic	Surface Water ARAR Protection of Human Health for Consumption of Organisms	Surface Water ARAR Protection of Aquatic Life - Marine/Chronic	Surface Water ARAR Protection of Human Health for Consumption of Organisms	Surface Water ARAR MTCA Method B Carcinogen Standard Formula Value	Surface Water ARAR MTCA Method B Non-Carcinogen Standard Formula Value	Reporting Limit	Analytical Method	Preliminary Groundwater Cleanup Level[2]
Metals *(Total or Dissolved)*													
Arsenic	mg/L	0.008	--	0.036	0.036	0.00014	0.036	0.00014	0.000098	0.018	0.0002	EPA 6020/200.8 ICP-MS	0.008
Cadmium	mg/L	0.002	--	0.0093	0.0088	--	0.0093	--	--	0.020	0.0002	EPA 6020/200.8 ICP-MS	0.0088
Chromium	mg/L	0.01	--	--	--	--	--	--	--	240	0.0005	EPA 6020/200.8 ICP-MS	240
Copper	mg/L	0.020	--	0.0031	0.0031	--	0.0024	--	--	2.700	0.0005	EPA 6020/200.8 ICP-MS	0.02
Lead	mg/L	0.010	--	0.0081	0.0081	--	0.0081	--	--	--	0.001	EPA 6020/200.8 ICP-MS	0.01
Mercury	mg/L	--	--	0.000025	0.00094	--	0.000025	0.00015	--	--	0.00002	EPA 7470 GFAA & CVAA	0.000025
Nickel	mg/L	--	--	0.0082	0.0082	4.6	0.0082	4.6	--	1.100	0.0005	EPA 6020/200.8 ICP-MS	0.0082
Zinc	mg/L	0.160	--	0.081	0.081	26	0.081	--	--	17	0.004	EPA 6020/200.8 ICP-MS	0.16
Volatile Organic Compounds													
Chloromethane	µg/L	--	--	--	--	--	--	--	130	--	1.0	EPA 8260B (5 mL purge)	130
Bromomethane	µg/L	--	--	--	--	1500	--	4000	--	970	1.0	EPA 8260B (5 mL purge)	970
Vinyl Chloride	µg/L	--	--	--	--	2.4	--	530	3.7	6600	1.0	EPA 8260B (5 mL purge)	2.4
Chloroethane	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
Methylene Chloride	µg/L	--	--	--	--	590	--	1600	960	170000	2.0	EPA 8260B (5 mL purge)	590
Acetone	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8260B (5 mL purge)	--
Carbon Disulfide	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
1,1-Dichloroethene	µg/L	--	--	--	--	7100	--	3.2	1.9	23000	1.0	EPA 8260B (5 mL purge)	1.9
1,1-Dichloroethane	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	10000	--	--	--	33000	1.0	EPA 8260B (5 mL purge)	10000
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
Chloroform	µg/L	--	--	--	--	470	--	470	280	6900	1.0	EPA 8260B (5 mL purge)	280
1,2-Dichloroethane	µg/L	--	--	--	--	37	--	99	59	43000	1.0	EPA 8260B (5 mL purge)	37
2-Butanone	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8260B (5 mL purge)	--
1,1,1-Trichloroethane	µg/L	--	--	--	--	--	--	--	--	420000	1.0	EPA 8260B (5 mL purge)	420000
Carbon Tetrachloride	µg/L	--	--	--	--	1.6	--	4.4	2.7	97	1.0	EPA 8260B (5 mL purge)	1.6
Vinyl Acetate	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8260B (5 mL purge)	--
Bromodichloromethane	µg/L	--	--	--	--	17	--	22	28	14000	1.0	EPA 8260B (5 mL purge)	17
1,2-Dichloropropane	µg/L	--	--	--	--	15	--	--	23	--	1.0	EPA 8260B (5 mL purge)	15
cis-1,3-Dichloropropene	µg/L	--	--	--	--	21	--	1700	19	41000	1.0	EPA 8260B (5 mL purge)	19
Trichloroethene	µg/L	--	--	--	--	30	--	81	1.5	71	1.0	EPA 8260B (5 mL purge)	1.5
Dibromochloromethane	µg/L	--	--	--	--	13	--	34	21	14000	1.0	EPA 8260B (5 mL purge)	13
1,1,2-Trichloroethane	µg/L	--	--	--	--	16	--	42	25	2300	1.0	EPA 8260B (5 mL purge)	16
Benzene	µg/L	--	--	--	--	51	--	71	23	2000	1.0	EPA 8260B (5 mL purge)	23
trans-1,3-Dichloropropene	µg/L	--	--	--	--	21	--	1700	19	41000	1.0	EPA 8260B (5 mL purge)	19
Bromoform	µg/L	--	--	--	--	140	--	360	220	14000	1.0	EPA 8260B (5 mL purge)	140
4-Methyl-2-Pentanone	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8260B (5 mL purge)	--
2-Hexanone	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8260B (5 mL purge)	--
Tetrachloroethene	µg/L	--	--	--	--	3.3	--	8.9	0.39	840	0.2	EPA 8260B (20 mL purge)	0.39
1,1,2,2-Tetrachloroethane	µg/L	--	--	--	--	4.0	--	11	6.5	--	1.0	EPA 8260B (5 mL purge)	4
Toluene	µg/L	--	--	--	--	15000	--	200000	--	19000	1.0	EPA 8260B (5 mL purge)	15000
Chlorobenzene	µg/L	--	--	--	--	1600	--	21000	--	5000	1.0	EPA 8260B (5 mL purge)	1600
Ethylbenzene	µg/L	--	--	--	--	2100	--	29000	--	6900	1.0	EPA 8260B (5 mL purge)	2100
Styrene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
Trichlorofluoromethane	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
1,1,2-Trichlorotrifluoroethane	µg/L	--	--	--	--	--	--	--	--	--	2.0	EPA 8260B (5 mL purge)	--
m,p-Xylene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
o-Xylene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
1,2-Dichlorobenzene	µg/L	--	--	--	--	1300	--	17000	--	4200	1.0	EPA 8260B (5 mL purge)	1300
1,3-Dichlorobenzene	µg/L	--	--	--	--	960	--	2600	--	--	1.0	EPA 8260B (5 mL purge)	960
1,4-Dichlorobenzene	µg/L	--	--	--	--	190	--	2600	4.9	--	1.0	EPA 8260B (5 mL purge)	4.9
Acrolein	µg/L	--	--	--	--	--	--	--	--	--	50	EPA 8260B (5 mL purge)	--
Methyl Iodide	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
Bromoethane	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
Acrylonitrile	µg/L	--	--	--	--	0.25	--	0.66	0.4	86	1.0	EPA 8260B (20 mL purge)	1.0
1,1-Dichloropropene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
Dibromomethane	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
1,1,1,2-Tetrachloroethane	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
1,2-Dibromo-3-Chloropropane	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8260B (5 mL purge)	--
1,2,3-Trichloropropane	µg/L	--	--	--	--	--	--	--	--	--	2.0	EPA 8260B (5 mL purge)	--
trans-1,4-Dichloro-2-Butene	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8260B (5 mL purge)	--
1,3,5-Trimethylbenzene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
1,2,4-Trimethylbenzene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
Hexachlorobutadiene	µg/L	--	--	--	--	18	--	50	30	190	5.0	EPA 8260B (5 mL purge)	18
Ethylene Dibromide	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
Bromochloromethane	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
2,2-Dichloropropane	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--

TABLE 2
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REMEDIAL INVESTIGATION DATA REPORT
DAKOTA CREEK INDUSTRIES
PORT OF ANACORTES

		Groundwater Criteria		Surface Water Criteria							Analytical Laboratory Criteria[1]		
				Ch. 173-201A WAC[5]	Section 304 of the Clean Water Act[6]		40 CFR Part 131[7]		WAC 173-340-730[8]				
Analytes	Units	Washington State Groundwater Background Concentrations[3]	Petroleum Hydrocarbons Method A Cleanup Levels for Groundwater[4]	Surface Water ARAR Protection of Aquatic Life - Marine/Chronic	Surface Water ARAR Protection of Aquatic Life - Marine/Chronic	Surface Water ARAR Protection of Human Health for Consumption of Organisms	Surface Water ARAR Protection of Aquatic Life - Marine/Chronic	Surface Water ARAR Protection of Human Health for Consumption of Organisms	Surface Water ARAR MTCA Method B Carcinogen Standard Formula Value	Surface Water ARAR MTCA Method B Non-Carcinogen Standard Formula Value	Reporting Limit	Analytical Method	Preliminary Groundwater Cleanup Level[2]
Volatile Organic Compounds (continued)													
1,3-Dichloropropane	µg/L	--	--	--	--	21	--	1700	19	41000	1.0	EPA 8260B (5 mL purge)	19
Isopropylbenzene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
n-Propyl Benzene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
Bromobenzene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
2-Chlorotoluene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
4-Chlorotoluene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
tert-Butylbenzene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
sec-Butylbenzene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
4-Isopropyltoluene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
n-Butylbenzene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8260B (5 mL purge)	--
1,2,4-Trichlorobenzene	µg/L	--	--	--	--	70	--	--	--	230	5.0	EPA 8260B (5 mL purge)	70
Naphthalene	µg/L	--	--	--	--	--	--	--	--	4900	5.0	EPA 8260B (5 mL purge)	4900
1,2,3-Trichlorobenzene	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8260B (5 mL purge)	--
Petroleum Hydrocarbons													
TPH-G	mg/L	--	1.0	--	--	--	--	--	--	--	0.03	NWTPH-G	1.0
TPH-D	mg/L	--	0.5	--	--	--	--	--	--	--	0.25	NW-TPH-Dx	0.5
TPH-O	mg/L	--	0.5	--	--	--	--	--	--	--	0.50	NW-TPH-Dx	0.5
Si/Acid Cleaned TPH-D	mg/L	--	0.5	--	--	--	--	--	--	--	0.25	NW-TPH-Dx	0.5
Si/Acid Cleaned TPH-O	mg/L	--	0.5	--	--	--	--	--	--	--	0.50	NW-TPH-Dx	0.5
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	µg/L	--	--	--	--	70	--	--	--	230	1.0	EPA 8270D	70
1,2-Dichlorobenzene	µg/L	--	--	--	--	1300	--	17000	--	4200	1.0	EPA 8270D	1300
1,3-Dichlorobenzene	µg/L	--	--	--	--	960	--	2600	--	--	1.0	EPA 8270D	960
1,4-Dichlorobenzene	µg/L	--	--	--	--	190	--	2600	4.9	--	1.0	EPA 8270D	4.9
2,2'-Oxybis(1-Chloropropane)	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8270D	--
2,4,5-Trichlorophenol	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8270D	--
2,4,6-Trichlorophenol	µg/L	--	--	--	--	2.4	--	6.5	3.9	--	5.0	EPA 8270D	5.0
2,4-Dichlorophenol	µg/L	--	--	--	--	290	--	790	--	190	5.0	EPA 8270D	190
2,4-Dimethylphenol	µg/L	--	--	--	--	850	--	--	--	550	1.0	EPA 8270D	550
2,4-Dinitrophenol	µg/L	--	--	--	--	5300	--	14000	--	3500	10	EPA 8270D	3500
2,4-Dinitrotoluene	µg/L	--	--	--	--	3.4	--	9.1	--	1400	5.0	EPA 8270D	5.0
2,6-Dinitrotoluene	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8270D	--
2-Chloronaphthalene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8270D	--
2-Chlorophenol	µg/L	--	--	--	--	--	--	--	--	97	1.0	EPA 8270D	97
2-Methylnaphthalene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8270D	--
2-Methylphenol	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8270D	--
2-Nitroaniline	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8270D	--
2-Nitrophenol	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8270D	--
3,3'-Dichlorobenzidine	µg/L	--	--	--	--	0.028	--	0.077	0.046	--	5.0	EPA 8270D	5.0
3-Nitroaniline	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8270D	--
4,6-Dinitro-2-Methylphenol	µg/L	--	--	--	--	--	--	--	--	--	10	EPA 8270D	--
4-Bromophenyl-phenylether	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8270D	--
4-Chloro-3-methylphenol	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8270D	--
4-Chloroaniline	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8270D	--
4-Chlorophenyl-phenylether	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8270D	--
4-Methylphenol	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8270D	--
4-Nitroaniline	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8270D	--
4-Nitrophenol	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8270D	--
Acenaphthene	µg/L	--	--	--	--	990.000	--	--	--	640.000	1.0	EPA 8270D	640
Acenaphthylene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8270D	--
Anthracene	µg/L	--	--	--	--	40000	--	110000	--	26000	1.0	EPA 8270D	26000
Benzo(a)anthracene	µg/L	--	--	--	--	0.018	--	0.031	0.030	--	1.0	EPA 8270D	0.018
Benzo(a)pyrene	µg/L	--	--	--	--	0.018	--	0.031	0.030	--	1.0	EPA 8270D	0.018
Benzo(b)fluoranthene	µg/L	--	--	--	--	0.018	--	0.031	0.030	--	1.0	EPA 8270D	0.018
Benzo(g,h,i)perylene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8270D	--
Benzo(k)fluoranthene	µg/L	--	--	--	--	0.018	--	0.031	0.030	--	1.0	EPA 8270D	0.018
Benzoic Acid	µg/L	--	--	--	--	--	--	--	--	--	10	EPA 8270D	--
Benzyl Alcohol	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8270D	--
bis(2-Chloroethoxy) Methane	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8270D	--
Bis-(2-Chloroethyl) Ether	µg/L	--	--	--	--	0.53	--	1.4	0.85	--	1.0	EPA 8270D	0.53
bis(2-Ethylhexyl)phthalate	µg/L	--	--	--	--	2.2	--	5.9	3.6	400	1.0	EPA 8270D	2.2
Butylbenzylphthalate	µg/L	--	--	--	--	1900	--	--	--	1300	1.0	EPA 8270D	1300
Carbazole	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8270D	--
Chrysene	µg/L	--	--	--	--	0.018	--	0.031	0.030	--	1.0	EPA 8270D	0.018
Dibenz(a,h)anthracene	µg/L	--	--	--	--	0.018	--	0.031	0.030	--	1.0	EPA 8270D	0.018
Dibenzofuran	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8270D	--
Diethylphthalate	µg/L	--	--	--	--	44000	--	120000	--	28000	1.0	EPA 8270D	28000
Dimethylphthalate	µg/L	--	--	--	--	1100000	--	2900000	--	72000	1.0	EPA 8270D	72000
Di-n-Butylphthalate	µg/L	--	--	--	--	4500	--	12000	--	2900	1.0	EPA 8270D	2900

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				Ch. 173-201A WAC[5]	Section 304 of the Clean Water Act[6]		40 CFR Part 131[7]		WAC 173-340-730[8]				
Analytes	Units	Washington State Groundwater Background Concentrations[3]	Petroleum Hydrocarbons Method A Cleanup Levels for Groundwater[4]	Surface Water ARAR Protection of Aquatic Life - Marine/Chronic	Surface Water ARAR Protection of Aquatic Life - Marine/Chronic	Surface Water ARAR Protection of Human Health for Consumption of Organisms	Surface Water ARAR Protection of Aquatic Life - Marine/Chronic	Surface Water ARAR Protection of Human Health for Consumption of Organisms	Surface Water ARAR MTCA Method B Carcinogen Standard Formula Value	Surface Water ARAR MTCA Method B Non-Carcinogen Standard Formula Value	Reporting Limit	Analytical Method	Preliminary Groundwater Cleanup Level[2]
Semivolatile Organic Compounds (continued)													
Di-n-Octyl phthalate	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8270D	--
Fluoranthene	µg/L	--	--	--	--	140	--	370	--	90	1.0	EPA 8270D	90
Fluorene	µg/L	--	--	--	--	5300	--	14000	--	3500	1.0	EPA 8270D	3500
Hexachlorobenzene	µg/L	--	--	--	--	0.00029	--	0.00077	0.00047	0.24	1.0	EPA 8270D	1.0
Hexachlorobutadiene	µg/L	--	--	--	--	18	--	50	30	190	1.0	EPA 8270D	18
Hexachlorocyclopentadiene	µg/L	--	--	--	--	1100	--	17000	--	3600	5.0	EPA 8270D	1100
Hexachloroethane	µg/L	--	--	--	--	3.3	--	8.9	5.3	30	2.0	EPA 8270D	3.3
Indeno(1,2,3-cd)pyrene	µg/L	--	--	--	--	0.018	--	0.031	0.030	--	1.0	EPA 8270D	0.018
Isophorone	µg/L	--	--	--	--	960	--	600	1600	120000	1.0	EPA 8270D	600
Naphthalene	µg/L	--	--	--	--	--	--	--	--	4900	1.0	EPA 8270D	4900
Nitrobenzene	µg/L	--	--	--	--	690	--	1900	--	450	1.0	EPA 8270D	450
N-Nitroso-Di-N-Propylamine	µg/L	--	--	--	--	0.51	--	--	0.82	--	5.0	EPA 8270D	5.0
N-Nitrosodiphenylamine	µg/L	--	--	--	--	6.0	--	16	9.7	--	1.0	EPA 8270D	6
Pentachlorophenol	µg/L	--	--	7.9	7.9	3.0	7.9	8.2	4.9	7100	5.0	EPA 8270D	5.0
Phenanthrene	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8270D	--
Phenol	µg/L	--	--	--	--	1700000	--	4600000	--	1100000	1.0	EPA 8270D	1100000
Pyrene	µg/L	--	--	--	--	4000	--	11000	--	2600	1.0	EPA 8270D	2600
Polycyclic Aromatic Hydrocarbons													
2-Methylnaphthalene	µg/L	--	--	--	--	--	--	--	--	--	0.01	8270M GC/MS Low Level	--
Acenaphthene	µg/L	--	--	--	--	990	--	--	--	640	0.01	8270M GC/MS Low Level	640
Acenaphthylene	µg/L	--	--	--	--	--	--	--	--	--	0.01	8270M GC/MS Low Level	--
Anthracene	µg/L	--	--	--	--	40000	--	110000	--	26000	0.01	8270M GC/MS Low Level	26000
Benzo(a)anthracene	µg/L	--	--	--	--	0.018	--	0.031	0.030	--	0.01	8270M GC/MS Low Level	0.018
Benzo(a)pyrene	µg/L	--	--	--	--	0.018	--	0.031	0.030	--	0.01	8270M GC/MS Low Level	0.018
Benzo(b)fluoranthene	µg/L	--	--	--	--	0.018	--	0.031	0.030	--	0.01	8270M GC/MS Low Level	0.018
Benzo(g,h,i)perylene	µg/L	--	--	--	--	--	--	--	--	--	0.01	8270M GC/MS Low Level	--
Benzo(k)fluoranthene	µg/L	--	--	--	--	0.018	--	0.031	0.030	--	0.01	8270M GC/MS Low Level	0.018
Chrysene	µg/L	--	--	--	--	0.018	--	0.031	0.030	--	0.01	8270M GC/MS Low Level	0.018
Dibenz(a,h)anthracene	µg/L	--	--	--	--	0.018	--	0.031	0.030	--	0.01	8270M GC/MS Low Level	0.018
Dibenzofuran	µg/L	--	--	--	--	--	--	--	--	--	0.01	8270M GC/MS Low Level	--
Fluoranthene	µg/L	--	--	--	--	140	--	370	--	90	0.01	8270M GC/MS Low Level	90
Fluorene	µg/L	--	--	--	--	5300	--	14000	--	3500	0.01	8270M GC/MS Low Level	3500
Indeno(1,2,3-cd)pyrene	µg/L	--	--	--	--	0.018	--	0.031	0.030	--	0.01	8270M GC/MS Low Level	0.018
Naphthalene	µg/L	--	--	--	--	--	--	--	--	4900	0.01	8270M GC/MS Low Level	4900
Phenanthrene	µg/L	--	--	--	--	--	--	--	--	--	0.01	8270M GC/MS Low Level	--
Pyrene	µg/L	--	--	--	--	4000	--	11000	--	2600	0.01	8270M GC/MS Low Level	2600
Pesticides													
alpha-BHC	µg/L	--	--	--	--	0.0049	--	0.013	0.0079	--	0.05	EPA 8081	0.05
beta-BHC	µg/L	--	--	--	--	0.017	--	0.046	0.028	--	0.05	EPA 8081	0.05
delta-BHC	µg/L	--	--	--	--	--	--	--	--	--	0.05	EPA 8081	0.05
gamma-BHC (Lindane)	µg/L	--	--	--	--	1.8	--	0.063	0.038	6	0.05	EPA 8081	0.05
Heptachlor	µg/L	--	--	0.0036	0.0036	0.000079	0.0036	0.00021	0.00013	0.12	0.05	EPA 8081	0.05
Aldrin	µg/L	--	--	0.0019	--	0.000050	--	0.00014	0.000082	0.017	0.05	EPA 8081	0.05
Heptachlor Epoxide	µg/L	--	--	--	0.0036	0.000039	0.0036	0.00011	0.000064	0.003	0.05	EPA 8081	0.05
Endosulfan I	µg/L	--	--	0.0087	0.0087	89	0.0087	2.0	--	58	0.05	EPA 8081	0.05
Dieldrin	µg/L	--	--	0.0019	0.0019	0.000054	0.0019	0.00014	0.000087	0.028	0.10	EPA 8081	0.10
4,4'-DDE	µg/L	--	--	0.001	--	0.00022	--	0.00059	0.00036	--	0.10	EPA 8081	0.10
Endrin	µg/L	--	--	0.0023	0.0023	0.060	0.0023	0.81	--	0.2	0.10	EPA 8081	0.10
Endosulfan II	µg/L	--	--	0.0087	0.0087	89	0.0087	2.0	--	58	0.10	EPA 8081	0.10
4,4'-DDD	µg/L	--	--	0.001	--	0.00031	--	0.00084	0.0005	--	0.10	EPA 8081	0.10
Endosulfan Sulfate	µg/L	--	--	0.0087	--	89	0.0087	2.0	--	58	0.10	EPA 8081	0.10
4,4'-DDT	µg/L	--	--	0.001	0.001	0.00022	0.001	0.00059	0.00036	0.024	0.10	EPA 8081	0.10
Methoxychlor	µg/L	--	--	--	--	--	--	--	--	8.4	0.50	EPA 8081	0.50
Endrin Ketone	µg/L	--	--	--	--	--	--	--	--	--	0.10	EPA 8081	0.10
Endrin Aldehyde	µg/L	--	--	--	--	--	--	--	--	--	0.10	EPA 8081	0.10
gamma Chlordane	µg/L	--	--	0.004	0.004	0.001	0.004	0.00059	0.0013	0.092	0.05	EPA 8081	0.05
alpha Chlordane	µg/L	--	--	0.004	0.004	0.001	0.004	0.00059	0.0013	0.092	0.05	EPA 8081	0.05
Toxaphene	µg/L	--	--	0.0002	0.0002	0.00028	0.0002	0.00075	0.00045	--	5.0	EPA 8081	5.0

TABLE 2
PRELIMINARY GROUNDWATER CLEANUP LEVELS
REMEDIAL INVESTIGATION DATA REPORT
DAKOTA CREEK INDUSTRIES
PORT OF ANACORTES

Analytes	Units	Groundwater Criteria		Surface Water Criteria							Analytical Laboratory Criteria[1]		
				Ch. 173-201A WAC[5]	Section 304 of the Clean Water Act[6]		40 CFR Part 131[7]		WAC 173-340-730[8]				
		Washington State Groundwater Background Concentrations[3]	Petroleum Hydrocarbons Method A Cleanup Levels for Groundwater[4]	Surface Water ARAR Protection of Aquatic Life - Marine/Chronic	Surface Water ARAR Protection of Aquatic Life - Marine/Chronic	Surface Water ARAR Protection of Human Health for Consumption of Organisms	Surface Water ARAR Protection of Aquatic Life - Marine/Chronic	Surface Water ARAR Protection of Human Health for Consumption of Organisms	Surface Water ARAR MTCA Method B Carcinogen Standard Formula Value	Surface Water ARAR MTCA Method B Non-Carcinogen Standard Formula Value	Reporting Limit	Analytical Method	Preliminary Groundwater Cleanup Level[2]
Herbicides													
2,4,5-TP (Silvex)	µg/L	--	--	--	--	--	--	--	--	--	0.25	EPA 8151A	--
2,4,5-T	µg/L	--	--	--	--	--	--	--	--	--	0.25	EPA 8151A	--
Dinoseb	µg/L	--	--	--	--	--	--	--	--	--	0.25	EPA 8151A	--
Dicamba	µg/L	--	--	--	--	--	--	--	--	--	0.50	EPA 8151A	--
2,4-D	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8151A	--
2,4-DB	µg/L	--	--	--	--	--	--	--	--	--	5.0	EPA 8151A	--
Dalapon	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8151A	--
MCPA	µg/L	--	--	--	--	--	--	--	--	--	250	EPA 8151A	--
Dichloroprop	µg/L	--	--	--	--	--	--	--	--	--	1.0	EPA 8151A	--
Polychlorinated Biphenyls													
Aroclor 1016	µg/L	--	--	--	--	--	--	--	--	0.0058	0.01	EPA 8082 Low Level	0.01
Aroclor 1221	µg/L	--	--	--	--	--	--	--	--	--	0.01	EPA 8082 Low Level	0.01
Aroclor 1232	µg/L	--	--	--	--	--	--	--	--	--	0.01	EPA 8082 Low Level	0.01
Aroclor 1242	µg/L	--	--	--	--	--	--	--	--	--	0.01	EPA 8082 Low Level	0.01
Aroclor 1248	µg/L	--	--	--	--	--	--	--	--	--	0.01	EPA 8082 Low Level	0.01
Aroclor 1254	µg/L	--	--	--	--	--	--	--	--	0.0017	0.01	EPA 8082 Low Level	0.01
Aroclor 1260	µg/L	--	--	--	--	--	--	--	--	--	0.01	EPA 8082 Low Level	0.01
Total PCBs	µg/L	--	--	0.03	0.03	0.000064	0.03	0.00017	0.00011	--	0.01	EPA 8082 Low Level	0.01
Dioxins and Furans													
2,3,7,8-TCDD	µg/L	--	--	--	--	5.1E-09	--	1.4E-08	8.6E-09	--	0.000005	EPA 1613/8290	0.000005
-Penta, Hexa, Hepta	µg/L	--	--	--	--	--	--	--	--	--	0.000025	EPA 1613/8290	0.000025
-Octa	µg/L	--	--	--	--	--	--	--	--	--	0.00005	EPA 1613/8290	0.00005

Notes:

[1] Reporting limits (TPH, metals, PAHs, and PCBs) and minimum levels (TCDD) for ARI and Frontier Analytical, respectively.

[2] Applicable Groundwater Cleanup Level is the lowest groundwater or surface water criteria as indicated by shading. Adjustments to these preliminary cleanup levels were made based on natural background and reporting limit considerations per WAC 173-340-720(7)(c).

[3] PTI, 1989. Background Concentrations of Selected Chemicals in Water, Soil, Sediments, and Air of Washington State.

[4] MTCA Method A Groundwater Cleanup Levels [WAC 173-340-720(3) and Chapter 173-340 WAC Table 720-1]. Applicable as surface water cleanup level for noncarcinogenic effects of petroleum mixtures per WAC 173-340-730(3)(b)(iii)(C).

[5] Chapter 173-201A WAC. Water Quality Standards for Surface Waters of the State of Washington [WAC 173-340-730(2)(b)(i)(A) and WAC 173-340-730(3)(b)(i)(A)].

[6] National Recommended Water Quality Criteria; published under Section 304 of the Clean Water Act [WAC 173-340-730(2)(b)(i)(B) and WAC 173-340-730(3)(b)(i)(B)].

[7] National Toxics Rule, 40 CFR Part 131.36 [WAC 173-340-730(2)(b)(i)(C) and WAC 173-340-730(3)(b)(i)(C)].

[8] MTCA Method B Surface Water Cleanup Levels, protection of human health - fish ingestion ([WAC 173-340-730(3)(b)(iii)].

Shading indlcates value was selected as the Preliminary Groundwater Cleanup Level.

-- Cleanup levels not developed for constituent

ARAR Applicable or relevant appropriate requirement

All Cleanup Levels (except background concentrations for metals) were obtained from the Washington State Department of Ecology Cleanup Levels and Risk Calculations (CLARC) On-Line Database.

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TABLE 3
ANALTYICAL DATA[a] RESULTS RELATIVE TO SMS[b] - SEDIMENT
REMEDIAL INVESTIGATION DATA REPORT
DAKOTA CREEK INDUSTRIES
PORT OF ANACORTES

Sample Identification	Sediment Quality Standards (SQS) WAC 173-204-320)	Sediment Cleanup Screening Level (CSL) WAC 173-204-520	G-1 (s')		Exceedance Ratio	G-1 (1-2')		Exceedance Ratio	G-2 (s')		Exceedance Ratio	G-2 (1.5-2.5')		Exceedance Ratio	G-3 (0-1')		Exceedance Ratio	G-3 (4-5')		Exceedance Ratio	G-4 (2-3')		Exceedance Ratio	G-4 (4-5')		Exceedance Ratio	G-5 (0-1')		Exceedance Ratio	G-5 (4-5')		Exceedance Ratio	G-6 (2-3')		Exceedance Ratio	G-6 (4-5')		Exceedance Ratio	G-7 (s')		Exceedance Ratio
Conventionals																																									
Total Solids (%)	–	–	46.50			47.40			52.90			39.50			83.10			74.50			81.90			82.40			81.80			84.40			73.00			83.90			79.3		
Total Volatile Solids (%)	–	–	14.54			12.25			9.94			28.59			2.32			7.08			2.55			1.52			0.88			3.17			4.19			1.34			1.78		
Ammonia (mg/kg)	–	–	6.17			20.6			14.1			24.2			0.62			1.77			3.61			9.29			0.22			2.61			3.75			2.93			1.62		
Total Sulfides (mg/kg)	–	–	303			485			231			400			333			370			435			1.19	U		69.7			10.9			1,320			12.4			245		
Total Organic Carbon (%)	–	–	1.96			2.78			2.17			8.53			1.03			4.54			1.39			1.01			0.451			1.73			1.60			1.03			0.602		
Metals	mg/kg Dry Weight																																								
Arsenic	57	93	10	U		10	U		9			10	U		30			30			**70**		1.23	6	U		**300**		3.23	6	U		33			6	U		37		
Cadmium	5.1	6.7	0.8			0.8			0.8			0.9			0.6	U		0.8			0.8			0.3			1.2			0.2	U		0.8			0.2	U		0.3		
Chromium	260	270	30			25			31.4			29			47			50			50			17.3			55			25.9			20.6			29.8			30.2		
Copper	390	390	49.3			44.0			36.4			47.6			**648**		1.66	**1,730**		4.44	**1,040**		2.67	52.3			**1,720**		4.41	28.2			**3,870**		9.92	12.0			77.2		
Lead	450	530	15			26			17			34			**609**		1.15	**801**		1.51	**939**		1.77	22			338			12			188			5			25		
Mercury	0.41	0.59	0.1			0.3			**0.51**		1.24	0.4			**4.39**		7.44	**8.8**		14.92	**17.8**		30.2	0.11			**1.43**		2.42	0.22			**4.43**		7.51	0.05	U		0.07		
Silver	6.1	6.1	0.7	U		0.8	U		0.5	U		0.7	U		0.9	U		1	U		0.9	U		0.3	U		0.9	U		0.3	U		0.5			0.3	U		0.4	U	
Zinc	410	960	84			76			59			76			320			**1,150**		1.20	**456**		1.11	37			**974**		1.01	39			307			28			90		
Organotins (porewater tributyltin) ug/L	--	--	0.019	U		NA			0.019	U		NA			1.4			NA			1.3			NA			0.68			NA			0.16			NA			0.026	U	
Polycyclic Aromatic Hydrocarbons	mg/kg Organic Carbon [c]																																							
LPAH [d]	370	780	51.07			9			31.6			8.03			91.7			118.7			172.7			42.4			238.4			23.0			232.6			19.1			11.8		
Naphthalene	99	170	7			0.72	U		1.7			0.6			5.6	U		2.64			10.8			2.5			13.1	U		1.5			5.7			1.9	U		3.3	U	
Acenaphthylene	66	66	4.7			0.72	U		1.8			0.5			5.2	J		2.86			7.2			2.0	U		13.1	U		1.2	U		15.6			1.9	U		3.3	U	
Acenaphthene	16	57	1.4			0.72	U		0.9	J		0.2	U		5.3	J		7.49			**16.5**		1.03	3.1			12.0	J		9.25			9.38			4.5			3.3	U	
Fluorene	23	79	4.8			0.72	U		2.7			0.8			4.5	J		7.93			19.4			4.6			11.5	J		1.2			14.4			1.9	U		3.3	U	
Phenanthrene	100	480	28.6			5.76			20.3			5.63			54.4			77.09			86.33			23.8			**166**		1.66	7.51			68.75			9.7			2.8	J	
Anthracene	220	1,200	4.9			1.5			4.2			0.5			19.4			20.7			32.4			7.5			35.5			2.9			118.8			2.0			2.3	J	
2-Methylnaphthalene	38	64	1.9			0.72	U		0.8	J		0.4			5.6	U		1.7			7.91			2.0	U		13.1	U		1.2	U		3.9			1.9	U		3.3	U	
HPAH [e]	960	5,300	241.3			52.09			108.8			23			**1,240**		1.29	950.88			**1,448.9**		1.51	287.0			**1,355**		1.41	104.2			**1,890.0**		1.97	46.9			51.00		
Fluoranthene	160	1,200	43.9			11.5			26.3			5.98			**214**		1.33	**211.5**		1.32	**417.3**	D	2.61	73.3			**332.6**		2.08	26.6			**687.50**	D	4.30	13.6			8.0		
Pyrene	1,000	1,400	36.7			11.2			23.0			5.04			223.3			215.9			244.6	D		65.3			243.9			30.6			468.8	D		13.6			15		
Benzo(a)anthracene	110	270	18.4			4.7			9.22			1.88			94.2			81.50			107.9			22.8			**122**		1.11	9.25			**162.5**		1.48	3.7			4.0		
Chrysene	110	460	28.6			7.6			10.6			2.58			**117**		1.06	83.70			**151.1**		1.37	29.7			**160**		1.45	10.4			**193.8**		1.76	3.9			5.5		
Total Benzofluoranthenes[f]	230	450	46.4			9.4			17.1			3.40			**282**		1.22	193.8			**259.0**		1.13	45.5			**243.9**		1.06	13.3			206.3			5.6			9.5		
Benzo(a)pyrene	99	210	29.1			4.3			10.1			1.88			**136**		1.37	85.90			**115.1**		1.16	24.8			**115**		1.16	8.09			93.75			3.6			3.7		
Indeno(l,2,3-c,d)pyrene	34	88	18.4			1.7			5.99			1.0			**70.9**		2.08	33.04			**61.9**		1.82	9.90			**59.9**		1.76	2.8			**34.4**		1.01	1.9	U		2.8	J	
Dibenz(a,h)anthracene	12	33	5.1			1.3			1.4			1.2			**33.0**		1.00	**16.96**		1.41	**28.8**		2.40	6.4			**20.2**		1.68	1.0			9.38			0.66			1.0	U	
Benzo(g,h,i)perylene	31	78	14.8			1.5			5.07			1.0			**70.9**		2.29	28.63			**63.3**		2.04	9.3			**57.6**		1.86	2.6			**33.8**		1.09	1.9	U		2.5	J	
1,2-Dichlorobenzene	2.3	2.3	0.32			0.33	U		0.3	U		0.07	U		0.60	U		0.1	U		1.3			0.60	U		1.4	U		0.4	U		1.0			0.6	U		1.0	U	
1,4-Dichlorobenzene	3.1	9	0.66			0.35			0.3	U		0.07	U		0.60	U		0.1	U		1.0			0.60	U		1.4	U		0.4	U		0.4	U		0.6	U		1.0	U	
1,2,4-Trichlorobenzene	0.81	1.8	0.32	U		0.22	U		0.29	U		0.07	U		0.60	U		0.1	U		0.4	U		0.60	U		***1.4***	***U***	1.70	0.4	U		0.4	U		0.6	U		***1.0***	***U***	1.25
Hexachlorobenzene	0.38	2.3	0.32	U		0.22	U		0.29	U		0.07	U		***0.60***	***U***	1.58	0.1	U		***0.4***	***U***	1.17	0.60	U		***1.4***	***U***	3.62	0.4	U		***0.4***	***U***	1.00	***0.6***	***U***	1.56	***1.0***	***U***	2.67
Dimethylphthalate	53	53	0.82	U		0.54	U		0.7	U		0.18	U		5.6	U		0.3	U		4.2	U		1.49	U		13	U		0.9	U		3.6	U		1.5	U		2.5	U	
Diethylphlhalate	61	110	1.02	U		0.72	U		0.9	U		0.23	U		5.6	U		1.3	U		4.2	U		2.0	U		13	U		1.2	U		3.6	U		1.9	U		3.3	U	
Di-n-Butylphthalate	220	1,700	1.02	U		0.72	U		0.9	U		0.23	U		5.6	U		1.3	U		4.2	U		2.0	U		13	U		1.2	U		3.6	U		1.9	U		3.3	U	
Butylbenzylphthalate	4.9	64	0.82	U		0.65			0.7	U		0.18	U		1.5	U		0.3	U		1.4			3.2			3.3	U		0.9	U		0.9	U		1.5	U		2.5	U	
bis(2-Ethylhexyl)phthalate	47	78	3.21			2.4			2.2			0.23	U		15.5			24.23			36.7			**98.0**		1.26	**88.7**		1.14	1.5			11.3			1.9	U		6.8		
Di-n-octyl phthalate	58	4,500	1.02	U		0.72	U		0.9	U		0.23	U		5.6	U		1.3	U		4.2	U		2.0	U		13	U		1.2	U		3.6	U		1.9	U		3.3	U	
Dibenzofuran	15	58	2.86			0.72	U		1.0			0.38			5.6	U		3.52			9.35			2.1			13	U		1.2	U		5.9			1.9	U		3.3	U	
Hexachlorobutadiene	3.9	6.2	0.32	U		0.22	U		0.3	U		0.07	U		0.60	U		0.1	U		0.4	U		0.6	U		1.4	U		0.4	U		0.4	U		0.6	U		1.0	U	
N-Nitrosodiphenylamine	11	11	0.32	UJ		0.24	U		0.9	UJ		0.10			0.60	U		1.2	U		0.4	U		**11.9**		1.08	1.4	U		0.4	U		0.4	U		0.6	U		2.5	UJ	
Total PCBs mg/kg OC[g]	12	65	1	U		0.72	U		5.44			1.66			**14.1**		1.17	**16.8**		1.40	**26.0**		2.17	2.0	U		**37.3**		3.10	1.1	U		8.38			1.8	U		3	U	
	ug/kg dry weight																																							
Phenol	420	1,200	34			20	U		20	U		20	U		43	J		59	U		76			20	U		59	U		20	U		58	U		20	U		20	U	
2-Methylphenol	63	63	6.2	U		7.3			6.2	U		6.1	U		6.2	U		17			6.2	U		6.1	U		6.2	U		6.2	U		6.1	U		6.1	U		6.2	U	
4-Methylphenol	670	670	59			20	U		19	J		20	U		58	U		59	U		45	J		20	U		59	U		20	U		58	U		20	U		20	U	
2, 4-Dimethylphenol	29	29	6.2	UJ		6.1	U		6.2	UJ		6.1	U		6.2	U		16			**40**		**1.38**	6.1	U		6.2	U		6.2	U		6.1	U		6.1	U		6.2	UJ	
Pentachlorophenol	360	690	31	U		30	U		31	U		31	U		290	U		42			70			30	U		40			31	U		31	U		31	U		31	U	
Benzyl Alcohol	57	73	31	UJ		**70**	J1	1.23	31	UJ		31	U		31	U		30	U		31	U		30	U		31	U		31	U		31	U		31	U		31	UJ	
Benzoic Acid	650	650	200	U		200	U		200	U		200	U		580	U		590	U		580	U		200	U		590	U		200	U		580	U		200	U		200	U	

Notes:

(a) Sediment samples were collected March 14, 2008.

(b) This table summarizes sediment sample analytical results with reference to the Sediment Management Standards (SMS) Sediment Quality Standards (SQS) and/or Cleanup Screening Levels (CSL).

(c) The listed chemical parameter criteria represent concentrations in parts per million, "normalized," or expressed, on a total organic carbon basis. To normalize to total organic carbon, the dry weight concentration for each parameter is divided by the decimal fraction representing the percent total organic carbon content of the sediment.

(d) The LPAH criterion represents the sum of the following "low molecular weight polynuclear aromatic hydrocarbon" compounds: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, and Anthracene. The LPAH criterion is not the sum of the criteria values for the individual LPAH compounds as listed.

(e) The HPAH criterion represents the sum of the following "high molecular weight polynuclear aromatic hydrocarbon" compounds: Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Total Benzofluoranthenes, Benzo(a)pyrene, Indeno(1,2,3,-c,d)pyrene, Dibenz(a,h) anthracene, and Benzo(g,h,i)perylene. The HPAH criterion is not the sum of the criteria values for the individual HPAH compounds as listed.

(f) The benzofluoranthenes criterion represents the sum of the concentrations of the "b," "j" and "k" isomers.

(g) PCBs = Polychlorinated biphenyls.

D = Concentration from sample diluted to obtain an accurate quantification of the analyte.

J = Estimated concentration as indicated by the laboratory

J1 = Benzyl alcohol is known to be a poor performer. Laboratory QA/QC was outside of limits. This concentration should be considered an estimate. Benzyl alcohol was not detected in the full scan.

U = analyte not detected at this concentration

X = Method detection limit exceeds the SQS or CSL criteria

NA = not analyzed

mg/kg = milligram per kilogram ug/kg = microgram per kilogram OC = organic carbon ppm = parts per million (s) = surface sample, 0-20 cm

Bold indicates concentrations greater than the SMS SQS Grey shading indicates concentrations greater than the SMS *Italics* indicates elevated method detection limit greater than SQS criteria. All associated dry weight concentrations are less than the associated apparent effects thresholds (AET).

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TABLE 4
SOIL ANALYTICAL RESULTS SUMMARY
REMEDIAL INVESTIGATION DATA REPORT
DAKOTA CREEK INDUSTRIES
PORT OF ANACORTES

Analytes		Units	Preliminary Soil Cleanup Level[6] Unsaturated	Source	MW-5-5.0	Exceedance Ratio	MW-5-10.0	Exceedance Ratio	SB-1-2.0	Exceedance Ratio	SB-1-4.0	Exceedance Ratio	SB-2-2.0	Exceedance Ratio	SB-2-4.0	Exceedance Ratio	SB-4-3.0	Exceedance Ratio	SB-4-9.0	Exceedance Ratio	SB-5-3.0	Exceedance Ratio	SB-5-9.0	Exceedance Ratio	SB-7-3.0	Exceedance Ratio	SB-7-9.0	Exceedance Ratio
Total Petroleum Hydrocarbons																												
Gasoline-Range		mg/kg	30/100	2	<3	U		<3	U		NA			NA			NA			NA			NA			NA			NA			NA		
Diesel-Range		mg/kg	2,000	2	200			59			NA			NA			NA			NA			<25	U		NA			<25	U		NA		
Oil-Range		mg/kg	2,000	2	91			<50	U		NA			NA			NA			<50	U		NA			85			NA			370		
EPH Total Aliphatics		mg/kg	–		390			NA			NA			NA			NA			<10	U		NA			45			NA			500		
EPH Total Aromatics		mg/kg	–		130			NA			NA			NA			NA			<10	U		NA			31			NA			170		
Metals																												
Arsenic		mg/kg	7.0E+00	1	NA			NA		NA	8.7	1.2	<5	U		<5	U		<5	U		NA			NA			NA			NA		
Copper		mg/kg	3.6E+01	1	NA			NA		NA	NA		NA			NA			NA			NA			NA			NA			NA		
Zinc		mg/kg	1.0E+02	4	NA			NA		NA	NA		NA			NA			NA			NA			NA			NA			NA		
Volatile Organic Compounds																												
Benzene		mg/kg	3.0E-02	2	<0.03	U		<0.03	U		NA			NA			NA			NA			NA			NA			NA			NA		
Ethylbenzene		mg/kg	6.0E+00	2	<0.05	U		<0.05	U		NA			NA			NA			NA			NA			NA			NA			NA		
Toluene		mg/kg	7.0E+00	2	<0.05	U		<0.05	U		NA			NA			NA			NA			NA			NA			NA			NA		
Xylene		mg/kg	9.0E+00	2	<0.2	U		<0.2	U		NA			NA			NA			NA			NA			NA			NA			NA		
1,2-Dichloroethane (EDC)		mg/kg	–		<0.010	U		<0.010	U		NA			NA			NA			<0.010	U		NA			<0.010	U		NA			<0.010	U	
1,2-Dibromoethane (ethylene dibromide; EDB)		mg/kg	–		<0.005	U		<0.005	U		NA			NA			NA			<0.005	U		NA			<0.005	U		NA			<0.005	U	
Methyl T-Butyl Ether		mg/kg	–		<0.1	U		<0.1	U		NA			NA			NA			<0.010	U		NA			<0.010	U		NA			<0.010	U	
Polycyclic Aromatic Hydrocarbons	**TEF**						**TEQ**		**TEQ**																			
1-Methylnaphthalene	--	mg/kg	5	2	0.03			<0.02	U		NA			NA			NA			<0.02	U		NA			<0.02	U		NA			0.03		
2-Methylnaphthalene	--	mg/kg	5	2	0.05			<0.02	U		NA			NA			NA			<0.02	U		NA			<0.02	U		NA			0.05		
Acenaphthene	--	mg/kg	65	4	<0.02	U		<0.02	U		NA			NA			NA			<0.02	U		NA			<0.02	U		NA			<0.02	U	
Acenaphthylene	--	mg/kg	–		0.04			<0.02	U		NA			NA			NA			<0.02	U		NA			<0.02	U		NA			<0.02	U	
Anthracene	--	mg/kg	12000	4	0.07			0.04		0.00	NA			NA			NA			<0.02	U		NA			<0.02	U		NA			<0.02	U	
Benzo(a)anthracene	0.1	mg/kg	0.13	4	0.13		0.01	0.13		0.013	NA			NA			NA			<0.02	U		NA			0.04			NA			0.02		
Benzo(a)pyrene	1	mg/kg	0.35	4	0.13		0.13	0.13		0.13	NA			NA			NA			<0.02	U		NA			0.05			NA			0.03		
Benzo(b)fluoranthene	0.1	mg/kg	0.43	4	0.13		0.01	0.12		0.012	NA			NA			NA			<0.02	U		NA			0.05			NA			0.02		
Benzo(g,h,i)perylene	--	mg/kg	–		0.17			0.11			NA			NA			NA			<0.02	U		NA			0.06			NA			0.04		
Benzo(k)fluoranthene	0.1	mg/kg	0.43	4	0.11		0.01	0.12		0.012	NA			NA			NA			<0.02	U		NA			0.04			NA			<0.02	U	
Chrysene	0.01	mg/kg	0.14	4	0.17		1.7E-03	0.15		0.002	NA			NA			NA			<0.02	U		NA			0.06			NA			0.03		
Dibenz(a,h)anthracene	0.1	mg/kg	0.65	4	0.05		0.01	0.04		0.004	NA			NA			NA			<0.02	U		NA			<0.02	U		NA			<0.02	U	
Fluoranthene	--	mg/kg	89	4	0.29			0.29			NA			NA			NA			<0.02	U		NA			0.10			NA			0.05		
Fluorene	--	mg/kg	550	4	0.05			<0.02	U		NA			NA			NA			<0.02	U		NA			<0.02	U		NA			0.02		
Indeno(1,2,3-cd)pyrene	0.1	mg/kg	1.3	4	0.13		0.01	0.09		0.009	NA			NA			NA			<0.02	U		NA			0.04			NA			0.02		
Naphthalene	--	mg/kg	5	2	0.02			<0.02	U		NA			NA			NA			<0.02	U		NA			<0.02	U		NA			0.03		
Phenanthrene	--	mg/kg	–		0.19			0.16			NA			NA			NA			<0.02	U		NA			0.04			NA			0.05		
Pyrene	--	mg/kg	3500	4	0.29			0.27			NA			NA			NA			<0.02	U		NA			0.10			NA			0.08		
cPAHs total TEQ		mg/kg	0.35	4			0.17			0.18																								
Dioxins and Furans	**WHO TEF (2005)**																											
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1	mg/kg	--	5	NA			NA			NA			NA			NA			1.9E-06			7.6E-08	U		6.3E-07			6.0E-08	U		8.0E-08			4.9E-08	U	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1	mg/kg	--	5	NA			NA			NA			NA			NA			2.0E-07	UJ		7.8E-08	U		5.4E-07	J		1.1E-07	UJ		1.2E-07	UJ		7.6E-08	J	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			1.4E-07	UJ		8.8E-08	UJ		3.7E-07	J+		6.6E-08	UJ		4.4E-08	U		5.0E-08	UJ	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			2.5E-07	UJ		9.2E-08	U		7.2E-07	J+		7.1E-08	J		6.6E-08	U		5.5E-08	UJ	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			2.5E-07	UJ		9.2E-08	U		4.9E-07	J+		8.2E-08	UJ		6.4E-08	U		8.8E-08	J	
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	0.01	mg/kg	--	5	NA			NA			NA			NA			NA			2.4E-06			4.3E-07	UJ		5.3E-06	J+		3.1E-07	UJ		4.7E-07	UJ		5.4E-07	UJ	
Octachlorodibenzo-p-dioxin (OCDD)	0.0003	mg/kg	--	5	NA			NA			NA			NA			NA			2.0E-05	J+		2.5E-06	J+		3.0E-05	J+		9.7E-07	UJ		4.6E-06	J+		4.2E-06	J+	
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			2.7E-07	UJ		5.6E-08	U		2.2E-06	J+		7.7E-08	UJ		8.0E-08	UJ		9.5E-08	UJ	
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.03	mg/kg	--	5	NA			NA			NA			NA			NA			1.5E-07	UJ		6.8E-08	J		1.3E-06	J+		7.1E-08	J		5.3E-08	U		7.0E-08	J	
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.3	mg/kg	--	5	NA			NA			NA			NA			NA			5.7E-07	J+		8.6E-08	J		6.3E-06	J+		4.7E-08	U		9.2E-08	UJ		6.8E-08	J	
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			1.7E-07	UJ		7.2E-08	J		1.1E-06	J+		6.0E-08	J		5.8E-08	J		4.6E-08	UJ	
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			2.1E-07	UJ		1.0E-07	J		3.4E-06	J+		7.2E-08	UJ		7.7E-08	J		4.7E-08	J	
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			1.4E-07	J		1.1E-07	J		5.0E-07	J+		5.4E-08			5.3E-08	J		4.3E-08	J	
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			3.4E-07	UJ		1.9E-07	UJ		3.3E-06	J+		1.6E-07	UJ		8.3E-08	UJ		5.1E-08	J	
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	0.01	mg/kg	--	5	NA			NA			NA			NA			NA			1.4E-06	J+		4.7E-07	UJ		3.0E-06	J+		3.4E-07	UJ		1.7E-07	J		2.2E-07	UJ	
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.01	mg/kg	--	5	NA			NA			NA			NA			NA			1.1E-07	J		1.5E-07	J		4.4E-07	UJ		1.1E-07	UJ		9.2E-08	U		1.2E-07	UJ	
Octachlorodibenzofuran (OCDF)	0.0003	mg/kg	--	5	NA			NA			NA			NA			NA			1.5E-06	J+		4.6E-07	J+		2.8E-06	J+		3.7E-07	UJ		2.3E-07	J		3.1E-07	UJ	
Total Dioxins/Furans (TEQ)		mg/kg	5.0E-07	5	NA			NA			NA			NA			NA			2.5E-06		5.0	1.8E-07			4.4E-06		8.8	2.2E-07			2.8E-07			1.8E-07		

TABLE 4
SOIL ANALYTICAL RESULTS SUMMARY
REMEDIAL INVESTIGATION DATA REPORT

DAKOTA CREEK SITE

PORT OF ANACORTES

Analytes		Units	Preliminary Soil Cleanup Level[6] Unsaturated	Source	SB-8-0.5	Exceedance Ratio	SB-8-4.0	Exceedance Ratio	SB-9-0.5	Exceedance Ratio	SB-9-4.0	Exceedance Ratio	SB-10-0.5	Exceedance Ratio	SB-10-4.0	Exceedance Ratio	SB-11-0.5	Exceedance Ratio	SB-11-4.0	Exceedance Ratio	SB-12-0.5	Exceedance Ratio	SB-12-4.0	Exceedance Ratio	SB-13-0.5	Exceedance Ratio	SB-13-4.0	Exceedance Ratio	SB-14-0.5	Exceedance Ratio	SB-14-4.0	Exceedance Ratio
Total Petroleum Hydrocarbons																														
Gasoline-Range		mg/kg	30/100	2	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Diesel-Range		mg/kg	2,000	2	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Oil-Range		mg/kg	2,000	2	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
EPH Total Aliphatics		mg/kg	–		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
EPH Total Aromatics		mg/kg	–		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Metals																														
Arsenic		mg/kg	7.0E+00	1	NA		NA		NA		NA		NA		NA		NA		910		130		48		6.9		5.2		<5	U	73		10.4		<5	U	
Copper		mg/kg	3.6E+01	1	NA		NA		NA		NA		NA		NA		NA		1,100		30.6		2,000		55.6		45		1.3		73		2.0		920		25.6		10	
Zinc		mg/kg	1.0E+02	4	120		1.20	300		3.00	86		78		230		2.30	280		2.80	74		280		2.8	2,800		28.0	720		7.2	65		110		1.1	920		9.2	38	
Volatile Organic Compounds																														
Benzene		mg/kg	3.0E-02	2	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Ethylbenzene		mg/kg	6.0E+00	2	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Toluene		mg/kg	7.0E+00	2	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Xylene		mg/kg	9.0E+00	2	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethane		mg/kg	–		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromoethane		mg/kg	–		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Methyl T-Butyl Ether		mg/kg	–		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Polycyclic Aromatic Hydrocarbons	**TEF**																													
1-Methylnaphthalene	–	mg/kg	5	2	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Methylnaphthalene	–	mg/kg	5	2	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acenaphthene	–	mg/kg	65	4	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acenaphthylene	–	mg/kg	–		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Anthracene	–	mg/kg	12000	4	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(a)anthracene	0.1	mg/kg	0.13	4	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(a)pyrene	1	mg/kg	0.35	4	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(b)fluoranthene	0.1	mg/kg	0.43	4	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(g,h,i)perylene	–	mg/kg	–		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(k)fluoranthene	0.1	mg/kg	0.43	4	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chrysene	0.01	mg/kg	0.14	4	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dibenz(a,h)anthracene	0.1	mg/kg	0.65	4	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Fluoranthene	–	mg/kg	89	4	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Fluorene	–	mg/kg	550	4	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Indeno(1,2,3-cd)pyrene	0.1	mg/kg	1.3	4	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Naphthalene	–	mg/kg	5	2	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Phenanthrene	–	mg/kg	–		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Pyrene	–	mg/kg	3500	4	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
cPAHs total TEQs		mg/kg	0.35	4																										
Dioxins and Furans	**WHO TEF (2005)**																													
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.1	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.1	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.1	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	0.01	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Octachlorodibenzo-p-dioxin (OCDD)	0.0003	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	0.1	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.03	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.3	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	0.01	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.01	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Octachlorodibenzofuran (OCDF)	0.0003	mg/kg	–	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Total Dioxins/Furans (TEQ)		mg/kg	5.0E-07	5	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

TABLE 4
SOIL ANALYTICAL RESULTS SUMMARY
REMEDIAL INVESTIGATION DATA REPORT

DAKOTA CREEK SITE

PORT OF ANACORTES

Analytes		Units	Preliminary Soil Cleanup Level[6] Unsaturated	Source	SB-15-4.0	Exceedance Ratio	SS-1-1	Exceedance Ratio	SS-2-1	Exceedance Ratio	SS-3-1	Exceedance Ratio	SS-4-0.5	Exceedance Ratio	SB-15-0.5	Exceedance Ratio	TP-3-6	Exceedance Ratio	TP-4-6	Exceedance Ratio	TP-5-2	Exceedance Ratio	TP-5-4	Exceedance Ratio	TP-10-4	Exceedance Ratio	TP-10-6	Exceedance Ratio	TP-11-6	Exceedance Ratio
Total Petroleum Hydrocarbons																														
Gasoline-Range		mg/kg	30/100	2	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Diesel-Range		mg/kg	2,000	2	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Oil-Range		mg/kg	2,000	2	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
EPH Total Aliphatics		mg/kg	–		NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
EPH Total Aromatics		mg/kg	–		NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Metals																														
Arsenic		mg/kg	7.0E+00	1	<5	U		NA			NA			NA			NA			180		25.7	5.00	U		5.00	U		15		2.1	10		1.4	5	U		NA			5	U	
Copper		mg/kg	3.6E+01	1	22			NA			NA			NA			NA			540		15.0	27			6.9			100		2.8	240		6.7	49		1.4	34			2.9		
Zinc		mg/kg	1.0E+02	4	44			190		1.9	98			2,100		21.0	360		3.6	770		7.7	56			18.0			130		1.3	170		1.7	44			NA			16		
Volatile Organic Compounds																														
Benzene		mg/kg	3.0E-02	2	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Ethylbenzene		mg/kg	6.0E+00	2	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Toluene		mg/kg	7.0E+00	2	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Xylene		mg/kg	9.0E+00	2	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2-Dichloroethane		mg/kg	–		NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2-Dibromoethane		mg/kg	–		NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Methyl T-Butyl Ether		mg/kg	–		NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Polycyclic Aromatic Hydrocarbons	**TEF**																													
1-Methylnaphthalene	–	mg/kg	5	2	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
2-Methylnaphthalene	–	mg/kg	5	2	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Acenaphthene	–	mg/kg	65	4	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Acenaphthylene	–	mg/kg	–		NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Anthracene	–	mg/kg	12000	4	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Benzo(a)anthracene	0.1	mg/kg	0.13	4	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Benzo(a)pyrene	1	mg/kg	0.35	4	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Benzo(b)fluoranthene	0.1	mg/kg	0.43	4	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Benzo(g,h,i)perylene	–	mg/kg	–		NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Benzo(k)fluoranthene	0.1	mg/kg	0.43	4	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Chrysene	0.01	mg/kg	0.14	4	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Dibenz(a,h)anthracene	0.1	mg/kg	0.65	4	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Fluoranthene	–	mg/kg	89	4	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Fluorene	–	mg/kg	550	4	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Indeno(1,2,3-cd)pyrene	0.1	mg/kg	1.3	4	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Naphthalene	–	mg/kg	5	2	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Phenanthrene	–	mg/kg	–		NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Pyrene	–	mg/kg	3500	4	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
cPAHs total TEQs		mg/kg	0.35	4																										
Dioxins and Furans	**WHO TEF (2005)**																													
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.1	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.1	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.1	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	0.01	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Octachlorodibenzo-p-dioxin (OCDD)	0.0003	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	0.1	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.03	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.3	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	0.01	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.01	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Octachlorodibenzofuran (OCDF)	0.0003	mg/kg	–	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Total Dioxins/Furans (TEQ)		mg/kg	5.0E-07	5	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		

TABLE 4
SOIL ANALYTICAL RESULTS SUMMARY
REMEDIAL INVESTIGATION DATA REPORT

DAKOTA CREEK SITE

PORT OF ANACORTES

Analytes		Units	Preliminary Soil Cleanup Level[6] Unsaturated	Source	TP-12-3		Exceedance Ratio	TP-13-2		Exceedance Ratio	TP-13-4		Exceedance Ratio	TP-14-0-2		Exceedance Ratio	TP-15-2-4		Exceedance Ratio	TP-16-0-2		Exceedance Ratio	TP-16-4-6		Exceedance Ratio
Total Petroleum Hydrocarbons																									
Gasoline-Range		mg/kg	30/100	2	NA			NA			NA			NA			NA			NA			NA		
Diesel-Range		mg/kg	2,000	2	NA			NA			NA			NA			NA			NA			NA		
Oil-Range		mg/kg	2,000	2	NA			NA			NA			NA			NA			NA			NA		
EPH Total Aliphatics		mg/kg	--		NA			NA			NA			NA			NA			NA			NA		
EPH Total Aromatics		mg/kg	--		NA			NA			NA			NA			NA			NA			NA		
Metals																									
Arsenic		mg/kg	7.0E+00	1	5	U		24		3.4	34		4.9	5	U		5	U		5	U		5	U	
Copper		mg/kg	3.6E+01	1	49		1.4	360		10.0	350		9.7	92		2.6	45		1.3	66		1.8	52		1.4
Zinc		mg/kg	1.0E+02	4	84			290		2.9	350		3.5	110		1.1	58			99			68		
Volatile Organic Compounds																									
Benzene		mg/kg	3.0E-02	2	NA			NA			NA			NA			NA			NA			NA		
Ethylbenzene		mg/kg	6.0E+00	2	NA			NA			NA			NA			NA			NA			NA		
Toluene		mg/kg	7.0E+00	2	NA			NA			NA			NA			NA			NA			NA		
Xylene		mg/kg	9.0E+00	2	NA			NA			NA			NA			NA			NA			NA		
1,2-Dichloroethane		mg/kg	--		NA			NA			NA			NA			NA			NA			NA		
1,2-Dibromoethane		mg/kg	--		NA			NA			NA			NA			NA			NA			NA		
Methyl T-Butyl Ether		mg/kg	--		NA			NA			NA			NA			NA			NA			NA		
Polycyclic Aromatic Hydrocarbons	**TEF**																								
1-Methylnaphthalene	--	mg/kg	5	2	NA			NA			NA			NA			NA			NA			NA		
2-Methylnaphthalene	--	mg/kg	5	2	NA			NA			NA			NA			NA			NA			NA		
Acenaphthene	--	mg/kg	65	4	NA			NA			NA			NA			NA			NA			NA		
Acenaphthylene	--	mg/kg	--		NA			NA			NA			NA			NA			NA			NA		
Anthracene	--	mg/kg	12000	4	NA			NA			NA			NA			NA			NA			NA		
Benzo(a)anthracene	0.1	mg/kg	0.13	4	NA			NA			NA			NA			NA			NA			NA		
Benzo(a)pyrene	1	mg/kg	0.35	4	NA			NA			NA			NA			NA			NA			NA		
Benzo(b)fluoranthene	0.1	mg/kg	0.43	4	NA			NA			NA			NA			NA			NA			NA		
Benzo(g,h,i)perylene	--	mg/kg	--		NA			NA			NA			NA			NA			NA			NA		
Benzo(k)fluoranthene	0.1	mg/kg	0.43	4	NA			NA			NA			NA			NA			NA			NA		
Chrysene	0.01	mg/kg	0.14	4	NA			NA			NA			NA			NA			NA			NA		
Dibenz(a,h)anthracene	0.1	mg/kg	0.65	4	NA			NA			NA			NA			NA			NA			NA		
Fluoranthene	--	mg/kg	89	4	NA			NA			NA			NA			NA			NA			NA		
Fluorene	--	mg/kg	550	4	NA			NA			NA			NA			NA			NA			NA		
Indeno(1,2,3-cd)pyrene	0.1	mg/kg	1.3	4	NA			NA			NA			NA			NA			NA			NA		
Naphthalene	--	mg/kg	5	2	NA			NA			NA			NA			NA			NA			NA		
Phenanthrene	--	mg/kg	--		NA			NA			NA			NA			NA			NA			NA		
Pyrene	--	mg/kg	3500	4	NA			NA			NA			NA			NA			NA			NA		
cPAHs total TEQs		mg/kg	0.35	4																					
Dioxins and Furans	**WHO TEF (2005)**																								
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	0.01	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
Octachlorodibenzo-p-dioxin (OCDD)	0.0003	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.03	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.3	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.1	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	0.01	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.01	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
Octachlorodibenzofuran (OCDF)	0.0003	mg/kg	--	5	NA			NA			NA			NA			NA			NA			NA		
Total Dioxins/Furans (TEQ)		mg/kg	5.0E-07	5	NA			NA			NA			NA			NA			NA			NA		

Notes:

[1] Natural Background Soil Metals Concentrations in Washington State, Puget Sound Region. October 1994.

[2] MTCA Method A Soil Cleanup Levels [WAC 173-340-745(3) and Chapter 173-340 WAC Table 745-1].

[3] MTCA Method C Industrial Soil Cleanup Levels; Direct Contact ([WAC 173-340-745(5)(b)(iii)(B)].

[4] Chapter 173-340 WAC; Table 749-2 (Simplified Terrestrial Ecological Evaluation: Industrial or Commercial Site).

[5] MTCA Method C Industrial Soil Cleanup Levels; Groundwater Protection ([WAC 173-340-745(5)(b)(iii)(A)]. Based on unsaturated soil.

[6] Preliminary Soil Cleanup Level is the lowest soil criteria as identified in the RI/FS/IA Work Plan by GeoEngineers, dated April 1, 2008 ; adjusted based on Washington State background. Additional adjustments were made based on reporting limits or minimum levels per WAC 173-340-720(7)(c).

Chemical analysis performed by CCI Analytical Laboratories, Everett, Washington.

Shading indicates concentrations greater than the preliminary cleanup Level.

U = analyte not detected at that concentration

J= Estimated concentration as indicated by the laboratory

J+ = Estimated concentration biased high

NA = Sample was not analyzed for this constituent

-- Cleanup levels not developed for constituent.

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TABLE 5
PRELIMINARY CLEANUP LEVEL EXCEEDANCES - SOIL
REMEDIAL INVESTIGATION DATA REPORT
DAKOTA CREEK INDUSTRIES
PORT OF ANACORTES

Analyte (Preliminary CUL)	Samples with Exceedances (concentration, depth) (location)	Relative Depth of Samples	Notes
Arsenic (7 mg/kg)	SB-1 (8.7 mg/kg,2 ft bgs) (east of MW-4), SB-14 (73 mg/kg, 0.5 ft bgs), SB-15 (180 mg/kg, 0.5 ft bgs) (south of the material stockpile on the east side of site)	shallow	The preliminary arsenic CUL of 7 mg/kg is based on the Washington State background concentration of arsenic in soil. The MTCA Method C soil CUL, based on protection of surface water (through groundwater), is less than the background concentration of arsenic. The protection of the surface water pathway is likely not a concern because arsenic does not appear to be discharging to surface water at concentrations of regulatory concern. The deeper samples that were analyzed from each of these locations had arsenic detections less than the preliminary CUL or arsenic was not detected.
	SB-12 (910 mg/kg, 0.5 ft bgs, (48 mg/kg, 4.0 ft bgs),	Shallow and deeper	Arsenic was detected at concentrations greater than the MTCA Method C direct contact soil cleanup level of 88 mg/kg in the shallow samples collected from SB-12 and SB-15.
	TP-5 (15 mg/kg, 2 ft bgs; 9.6 mg/kg 4 ft bgs) TP-13 (24 mg/kg, 2 ft bgs; 34 mg/kg 4 ft bgs)	deeper	Arsenic was detected at concentrations greater than the preliminary cleanup level (background level) of 7 mg/kg.
Copper (36 mg/kg)	SB-12 (1,100 mg/kg, 0.5 ft bgs; 2,000 mg/kg, 4.0 ft bgs) SB-13 (45 mg/kg, 0.5ftbgs; 73 mg/kg, 4.0 ft bgs) (near the material stockpile)	shallow and deeper	The copper preliminary soil CUL of 36 mg/kg is based on the Washington State background concentration. The MTCA Method C soil CUL, based on protection of surface water (through groundwater), is less than the background concentration of copper. The protection of the surface water pathway does not appear to be a concern because copper was not detected in groundwater at concentrations greater than the preliminary groundwater CUL.
	SB-14 (920 mg/kg, 0.5 ft bgs) SB-15 (540 mg/kg,0.5 ft bgs) (near the material stockpile)	shallow	The deeper samples that were analyzed from the SB-14 and SB-15 locations had concentrations of copper that were less than the preliminary soil CUL or copper was not detected.

TABLE 5
PRELIMINARY CLEANUP LEVEL EXCEEDANCES - SOIL
REMEDIAL INVESTIGATION DATA REPORT
DAKOTA CREEK INDUSTRIES
PORT OF ANACORTES

Analyte (Preliminary CUL)	Samples with Exceedances (concentration, depth) (location)	Relative Depth of Samples	Notes
Copper (36 mg/kg)	TP-5 (100 mg/kg, 2 ft bgs; 240 mg/kg 4 ft bgs) TP-10 (49 mg/kg, 4 ft bgs) TP-12 (49 mg/kg, 3 ft bgs) TP-13 (360 mg/kg, 2 ft bgs; 350 mg/kg 4 ft bgs) TP-14 (92 mg/kg, 0-2 ft bgs) TP-15 (45 mg/kg, 2-4 ft bgs) TP-16 (66 mg/kg, 0-2 ft bgs; 52 mg/kg 4-6 ft bgs)	deeper	Copper was detected in test pit samples at concentrations greater than the preliminary cleanup levels (background levels) of 36 mg/kg.
Zinc (100 mg/kg)	SB-8 (120 mg/kg, 0.5 ft bgs; 300 mg/kg, 4 ft bgs) (on the far west side of the site),	shallow and deeper	The zinc preliminary soil CUL of 100 mg/kg is based on protection of surface water (through groundwater). The protection of surface water pathway does not appear to be a concern because zinc was not detected in groundwater at the site at concentrations greater than the preliminary groundwater CUL. The concentrations of zinc at SB-8 ,SB-10, SB-11, SB-13, SS-1 and SS-4 are greater than the preliminary CUL, but are less than the MTCA Method C CUL protective of human health. The shallower samples that were analyzed from SB-11 and SB-13 had zinc detections less than the preliminary CUL or zinc was not detected. The deeper samples that were analyzed from SB-14 and SB-15 had zinc detections less than the CUL or zinc was not detected. No deeper samples were collected at locations SS-1, SS-3 and SS-4.
	SB-10 (230 mg/kg, 0.5 ft bgs; 280 mg/kg, 4 ft bgs) (far west side of the site), SB-12 (2,800 mg/kg, 0.5 ft;720 mg/kg, 4 ft) (near the material stockpile)		
	SB-11 (280 mg/kg, 4 ft bgs) (far west side of site) SB-13 (110 mg/kg, 4 ft bgs) (near the material stockpile)	deeper	
	SB-14 (920 mg/kg, 0.5 ft bgs) (near the material stockpile) SB-15 (770 mg/kg, 0.5 ft bgs) (near the material stockpile)	shallow	

TABLE 5
PRELIMINARY CLEANUP LEVEL EXCEEDANCES - SOIL
REMEDIAL INVESTIGATION DATA REPORT
DAKOTA CREEK INDUSTRIES
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Analyte (Preliminary CUL)	Samples with Exceedances (concentration, depth) (location)	Relative Depth of Samples	Notes
Zinc (100 mg/kg)	SS-1 (190 mg/kg,1 ft bgs)		
	SS-3 (2,100 mg/kg, 1 ft bgs) SS-4 (360 mg/kg, 0.5 ft bgs) (all to the east of the aluminum shop)	shallow	
	TP-5 (130 mg/kg, 2 ft bgs; 170 mg/kg 4 ft bgs) TP-13 (290 mg/kg, 2 ft bgs; 350 mg/kg 4 ft bgs) TP-14 (110 mg/kg, 0-2 ft bgs)	deeper	
Dioxins/ Furans (5.0E-07 mg/kg)	SB-4 (2.5E-06,3 ft bgs) SB-5 (4.4E-06,3 ft bgs) (1975 Earth Fill Area)	Shallow	The dioxins/furans preliminary soil CUL of 5.0E-07 mg/kg is based on the lowest achievable laboratory reporting limit. The MTCA Method C soil CUL (1.5E-08) based on protection of surface water (through groundwater) is less than the reporting limit. The MTCA Method C direct contact CUL of 8.8E-04 is protective of human health. The protection of surface water pathway does not appear to be a concern because the concentration of dioxins and furans in groundwater from the down-gradient well at the site is less than the preliminary groundwater CUL. The soil sample results do not exceed the applicable human health MTCA Method C soil CULs. These samples were collected from material identified in the field as fill. The deeper samples collected from native soil in these locations had concentrations of dioxins/furans less than the preliminary soil CUL.

Notes:

CUL = Cleanup Level criteria bgs = below ground surface

MTCA = Washington State Model Toxics Control Act

TEQ = toxicity equivalency quotient

mg/kg = milligrams per kilogram

TABLE 6
ANALYTICAL DATA RESULTS - GROUNDWATER
REMEDIAL INVESTIGATION DATA REPORT
DAKOTA CREEK INDUSTRIES
PORT OF ANACORTES

		Preliminary Groundwater Cleanup Level[1]	MW-1		Exceedance Ratio	MW-1 Duplicate		Exceedance Ratio	MW-2		Exceedance Ratio	MW-3		Exceedance Ratio	MW-4		Exceedance Ratio	MW-5		Exceedance Ratio
Petroleum Hydrocarbons																				
TPH-G	mg/L	1	<0.050	U		<0.050	U		<0.050	U		<0.05	U		<0.05	U		<0.05	U	
TPH-D	mg/L	0.5	NA			NA			NA			NA			NA			NA		
TPH-O	mg/L	0.5	NA			NA			NA			NA			NA			NA		
Si/Acid Cleaned TPH-D	mg/L	0.5	<0.130	U		<0.130	U		0.18			<0.130	U		<0.130	U		<0.130	U	
Si/Acid Cleaned TPH-O	mg/L	0.5	<0.250	U		<0.250	U		<0.250	U		<0.250	U		<0.250	U		<0.250	U	
Metals ***(Total or Dissolved)***																				
Arsenic	mg/L	0.008	0.0048			0.0049			0.0034			0.0008			0.0081		1.01	0.01		1.25
Cadmium	mg/L	0.0088	<0.0002	U		<0.0002	U		<0.0002	U		<0.0002	U		<0.0002	U		<0.0002	U	
Chromium	mg/L	240	0.011			0.012			0.007			0.0006			0.0022			0.016		
Copper	mg/L	0.02	0.007			0.0069			0.0026			0.0018			0.0018			0.0036		
Lead	mg/L	0.01	<.001	U		<0.001	U		0.001			<.001	U		0.002			<0.001	U	
Mercury	mg/L	0.000025	0.000037		1.48	0.000034		1.36	<0.00002	U		<0.00002	U		<0.00002	U		<0.00002	U	
Nickel	mg/L	0.0082	0.0032			0.0033			0.0024			0.0022			0.0011			0.0052		
Zinc	mg/L	0.16	<0.004	U		0.006			<.004	U		0.005			0.005			0.007		
Volatile Organic Compounds																				
Chloromethane	µg/L	130	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Bromomethane	µg/L	970	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Vinyl Chloride	µg/L	2.4	<0.2	U		<0.2	U		<0.2	U		<0.2	U		<0.2	U		<0.2	U	
Chloroethane	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Methylene Chloride	µg/L	590	<5	U		<5	U		<5	U		<5	U		<5	U		<5	U	
Acetone	µg/L	--	<25	U		<25	U		<25	U		<25	U		<25	U		<25	U	
Carbon Disulfide	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,1-Dichloroethene	µg/L	1.9	<1	U		<1	U		<1	U		<1	U		<1	U		<1	U	
1,1-Dichloroethane	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
trans-1,2-Dichloroethene	µg/L	10,000	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
cis-1,2-Dichloroethene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Chloroform	µg/L	280	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,2-Dichloroethane	µg/L	37	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
2-Butanone	µg/L	--	<10	U		<10	U		<10	U		<10	U		<10	U		<10	U	
1,1,1-Trichloroethane	µg/L	420,000	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Carbon Tetrachloride	µg/L	1.6	<1.4	U		<1.4	U		<1.4	U		<1.4	U		<1.4	U		<1.4	U	
Vinyl Acetate	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Bromodichloromethane	µg/L	17	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,2-Dichloropropane	µg/L	15	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
cis-1,3-Dichloropropene	µg/L	19	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Trichloroethene	µg/L	1.5	<1	U		<1	U		<1	U		<1	U		<1	U		<1	U	
Dibromochloromethane	µg/L	13	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,1,2-Trichloroethane	µg/L	16	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Benzene	µg/L	23	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
trans-1,3-Dichloropropene	µg/L	19	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Bromoform	µg/L	140	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
4-Methyl-2-Pentanone	µg/L	--	<10	U		<10	U		<10	U		<10	U		<10	U		<10	U	
2-Hexanone	µg/L	--	<10	U		<10	U		<10	U		<10	U		<10	U		<10	U	
Tetrachloroethene	µg/L	0.39	<0.02	U		<0.02	U		<0.02	U		<0.02	U		<0.02	U		<0.02	U	
1,1,2,2-Tetrachloroethane	µg/L	4	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Toluene	µg/L	15,000	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Chlorobenzene	µg/L	1,600	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Ethylbenzene	µg/L	2,100	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Styrene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Trichlorofluoromethane	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,1,2-Trichlorotrifluoroethane	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	

TABLE 6
ANALYTICAL DATA RESULTS - GROUNDWATER
REMEDIAL INVESTIGATION DATA REPORT
DAKOTA CREEK INDUSTRIES
PORT OF ANACORTES

		Preliminary Groundwater Cleanup Level[1]	MW-1		Exceedance Ratio	MW-1 Duplicate		Exceedance Ratio	MW-2		Exceedance Ratio	MW-3		Exceedance Ratio	MW-4		Exceedance Ratio	MW-5		Exceedance Ratio
m,p-Xylene	µg/L	--	<4	U		<4	U		<4	U		<4	U		<4	U		<4	U	
o-Xylene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,2-Dichlorobenzene	µg/L	1,300	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,3-Dichlorobenzene	µg/L	960	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,4-Dichlorobenzene	µg/L	4.9	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Acrolein	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Methyl Iodide	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Bromoethane	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Acrylonitrile	µg/L	1	<1	U		<1	U		<1	U		<1	U		<1	U		<1	U	
1,1-Dichloropropene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Dibromomethane	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,1,1,2-Tetrachloroethane	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,2-Dibromo-3-Chloropropane	µg/L	--	<10	U		<10	U		<10	U		<10	U		<10	U		<10	U	
1,2,3-Trichloropropane	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
trans-1,4-Dichloro-2-Butene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,3,5-Trimethylbenzene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,2,4-Trimethylbenzene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Hexachlorobutadiene	µg/L	18	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Ethylene Dibromide	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Bromochloromethane	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
2,2-Dichloropropane	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,3-Dichloropropane	µg/L	19	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Isopropylbenzene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
n-Propyl Benzene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Bromobenzene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
2-Chlorotoluene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
4-Chlorotoluene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
tert-Butylbenzene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Volatile Organic Compounds (continued)																				
sec-Butylbenzene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
4-Isopropyltoluene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
n-Butylbenzene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,2,4-Trichlorobenzene	µg/L	70	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Naphthalene	µg/L	4900	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,2,3-Trichlorobenzene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,2-Dichloroethane	µg/L		<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,2-Dibromoethane	µg/L		<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Methyl T-Butyl Ether	µg/L		<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Semivolatile Organic Compounds																				
Phenol	µg/L	1,100,000	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
Bis-(2-Chloroethyl) Ether	µg/L	0.53	<0.54	U		<0.54	U		<0.54		U	<0.54	U		<0.54	U		<0.54	U	
2-Chlorophenol	µg/L	97	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
1,3-Dichlorobenzene	µg/L	960	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
1,4-Dichlorobenzene	µg/L	4.9	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
Benzyl Alcohol	µg/L	--	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
1,2-Dichlorobenzene	µg/L	1,300	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
2-Methylphenol	µg/L	--	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
2,2'-Oxybis(1-Chloropropane)	µg/L	--	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
4-Methylphenol	µg/L	--	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
N-Nitroso-Di-N-Propylamine	µg/L	5	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
Hexachloroethane	µg/L	3.3	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
Nitrobenzene	µg/L	450	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
Isophorone	µg/L	600	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
2-Nitrophenol	µg/L	--	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	

TABLE 6
ANALYTICAL DATA RESULTS - GROUNDWATER
REMEDIAL INVESTIGATION DATA REPORT
DAKOTA CREEK INDUSTRIES
PORT OF ANACORTES

		Preliminary Groundwater Cleanup Level[1]	MW-1		Exceedance Ratio	MW-1 Duplicate		Exceedance Ratio	MW-2		Exceedance Ratio	MW-3		Exceedance Ratio	MW-4		Exceedance Ratio	MW-5		Exceedance Ratio
2,4-Dimethylphenol	µg/L	550	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Benzoic Acid	µg/L	--	<10	U		<10	U		<10	U		<10	U		<10	U		<10	U	
bis(2-Chloroethoxy) Methane	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
2,4-Dichlorophenol	µg/L	190	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
1,2,4-Trichlorobenzene	µg/L	70	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Naphthalene	µg/L	4,900	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
4-Chloroaniline	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Hexachlorobutadiene	µg/L	18	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
4-Chloro-3-methylphenol	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
2-Methylnaphthalene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Hexachlorocyclopentadiene	µg/L	1,100	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
2,4,6-Trichlorophenol	µg/L	5	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
2,4,5-Trichlorophenol	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
2-Chloronaphthalene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
2-Nitroaniline	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Dimethylphthalate	µg/L	72,000	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Acenaphthylene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
3-Nitroaniline	µg/L	--	<5	U		<5	U		<5	U		<5	U		<5	U		<5	U	
Acenaphthene	µg/L	640	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
2,4-Dinitrophenol	µg/L	3,500	<10	U		<10	U		<10	U		<10	U		<10	U		<10	U	
Semivolatile Organic Compounds (continued)																				
4-Nitrophenol	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Dibenzofuran	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
2,6-Dinitrotoluene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
2,4-Dinitrotoluene	µg/L	5	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Diethylphthalate	µg/L	28,000	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
4-Chlorophenyl-phenylether	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Fluorene	µg/L	3,500	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
4-Nitroaniline	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
4,6-Dinitro-2-Methylphenol	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
N-Nitrosodiphenylamine	µg/L	6	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
4-Bromophenyl-phenylether	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Hexachlorobenzene	µg/L	1.0	<1	U		<1	U		<1	U		<1	U		<1	U		<1	U	
Pentachlorophenol	µg/L	5.0	<5	U		<5	U		<5	U		<5	U		<5	U		<5	U	
Phenanthrene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Carbazole	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Anthracene	µg/L	26,000	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Di-n-Butylphthalate	µg/L	2,900	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Fluoranthene	µg/L	90	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Pyrene	µg/L	2,600	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Butylbenzylphthalate	µg/L	1,300	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
3,3'-Dichlorobenzidine	µg/L	5	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Benzo(a)anthracene	µg/L	0.018	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
bis(2-Ethylhexyl)phthalate	µg/L	2.2	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Chrysene	µg/L	0.018	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Di-n-Octyl phthalate	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Benzo(b)fluoranthene	µg/L	0.018	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Benzo(k)fluoranthene	µg/L	0.018	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Benzo(a)pyrene	µg/L	0.018	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Indeno(1,2,3-cd)pyrene	µg/L	0.018	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Dibenz(a,h)anthracene	µg/L	0.018	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	
Benzo(g,h,i)perylene	µg/L	--	<2	U		<2	U		<2	U		<2	U		<2	U		<2	U	

TABLE 6
ANALYTICAL DATA RESULTS - GROUNDWATER
REMEDIAL INVESTIGATION DATA REPORT
DAKOTA CREEK INDUSTRIES
PORT OF ANACORTES

		Preliminary Groundwater Cleanup Level[1]	MW-1		Exceedance Ratio	MW-1 Duplicate		Exceedance Ratio	MW-2		Exceedance Ratio	MW-3		Exceedance Ratio	MW-4		Exceedance Ratio	MW-5		Exceedance Ratio
Polycyclic Aromatic Hydrocarbons																				
Naphthalene	µg/L	4,900	<0.02	U		<0.02	U		0.02			0.03			<0.02	U		<0.02	U	
1-Methylnaphthalene	µg/L		<0.02	U		<0.02	U		<0.02		U	<0.02	U		<0.02	U		<0.02	U	
2-Methylnaphthalene	µg/L	--	<0.02	U		<0.02	U		<0.02		U	<0.02	U		<0.02	U		<0.02	U	
Acenaphthylene	µg/L	--	<0.02	U		<0.02	U		0.03			<0.02	U		0.03			<0.02	U	
Acenaphthene	µg/L	640	<0.02	U		<0.02	U		<0.02		U	0.3			0.08			<0.02	U	
Fluorene	µg/L	3,500	<0.02	U		<0.02	U		<0.02		U	0.07			0.09			<0.02	U	
Phenanthrene	µg/L	--	<0.02	U		<0.02			0.03			<0.02			0.14			0.03		
Anthracene	µg/L	26,000	<0.02	U		<0.02	U		0.05			0.05			0.04			<0.02	U	
Fluoranthene	µg/L	90	<0.02	U		<0.02	U		<0.02		U	0.07			0.03			<0.02	U	
Pyrene	µg/L	2600	<0.02	U		0.03			0.03			0.07			0.03			<0.02	U	
Benzo(g,h,i)perylene	µg/L	--	<0.02	U		<0.02	U		<0.02		U	<0.02	U		<0.02	U		<0.02	U	
Dibenzofuran	µg/L	--	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
Carcinogenic Polycyclic Aromatic Hydrocarbons					TEQ			TEQ			TEQ			TEQ			TEQ			TEQ
Benzo(a)anthracene	µg/L	0.018	<0.018	U	0.00009	<0.018	U	9E-05	0.03		1.67	<0.018	U	9E-05	<0.018	U	9E-05	<0.018	U	9E-05
Chrysene	µg/L	0.018	<0.018	U	0.00009	<0.018	U	9E-05	<0.018	U		<0.018	U	9E-05	<0.018	U	9E-05	<0.018	U	9E-05
Benzo(b)fluoranthene	µg/L	0.018	<0.018	U	0.0009	<0.018	U	9E-04	<0.018	U		<0.018	U	9E-04	<0.018	U	9E-04	<0.018	U	9E-04
Benzo(k)fluoranthene	µg/L	0.018	<0.018	U	0.0009	<0.018	U	9E-04	<0.018	U		<0.018	U	9E-04	<0.018	U	9E-04	<0.018	U	9E-04
Benzo(a)pyrene	µg/L	0.018	<0.018	U	0.009	<0.018	U	0.009	<0.018	U		<0.018	U	0.009	<0.018	U	0.009	<0.018	U	0.009
Indeno(1,2,3-cd)pyrene	µg/L	0.018	<0.018	U	0.0009	<0.018	U	9E-04	<0.018	U		<0.018	U	9E-04	<0.018	U	9E-04	<0.018	U	9E-04
Dibenz(a,h)anthracene	µg/L	0.018	<0.018	U	0.0009	<0.018	U	9E-04	<0.018	U		<0.018	U	9E-04	<0.018	U	9E-04	<0.018	U	9E-04
cPAHs total TEQ	µg/L	0.018			0.01278			0.013						0.013			0.013			0.013
Pesticides																				
alpha-BHC	µg/L	0.05	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
beta-BHC	µg/L	0.05	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
delta-BHC	µg/L	0.05	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
gamma-BHC (Lindane)	µg/L	0.05	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
Heptachlor	µg/L	0.05	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
Aldrin	µg/L	0.05	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
Heptachlor Epoxide	µg/L	0.05	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
Endosulfan I	µg/L	0.05	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
Dieldrin	µg/L	0.10	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
4,4'-DDE	µg/L	0.10	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
Endrin	µg/L	0.10	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
Endosulfan II	µg/L	0.10	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
4,4'-DDD	µg/L	0.10	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
Endosulfan Sulfate	µg/L	0.10	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
4,4'-DDT	µg/L	0.10	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
Methoxychlor	µg/L	0.50	<0.05	U		<0.05	U		<0.10		U	<0.05	U		<0.05	U		<0.05	U	
Endrin Ketone	µg/L	0.10	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
Endrin Aldehyde	µg/L	0.10	<0.05	U		<0.05	U		<0.05		U	<0.05	U		<0.05	U		<0.05	U	
Chlordane	µg/L	0.1	<0.1	U		<0.1	U		<0.1		U	<0.1	U		<0.1	U		<0.1	U	
Toxaphene	µg/L	5.0	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
Herbicides																				
2,4,5-TP (Silvex)	µg/L	--	<1	U		<1	U		<1		U	<1	U		<1	U		<1	U	
2,4,5-T	µg/L	--	<1	U		<1	U		<1		U	<1	U		<1	U		<1	U	
Dinoseb	µg/L	--	<2	U		<2	U		<2		U	<2	U		<2	U		<2	U	
Dicamba	µg/L	--	<1	U		<1	U		<1		U	<1	U		<1	U		<1	U	
2,4-D	µg/L	--	<1	U		<1	U		<1		U	<1	U		<1	U		<1	U	
2,4-DB	µg/L	--	<5	U		<5	U		<5		U	<5	U		<5	U		<5	U	
Dalapon	µg/L	--	<1	U		<1	U		<1		U	<1	U		<1	U		<1	U	
MCPA	µg/L	--	<250	U		<250	U		<250		U	<250	U		<250	U		<250	U	
Dichloroprop	µg/L	--	<1	U		<1	U		<1		U	<1	U		<1	U		<1	U	
MCPP	µg/L	--	<250	U		<250	U		<250		U	<250	U		<250	U		<250	U	
Carbaryl	µg/L	--	<0.01	U		<0.01	U		<0.01		U	<0.01	U		<0.01	U		<0.01	U	

TABLE 6
ANALYTICAL DATA RESULTS - GROUNDWATER
REMEDIAL INVESTIGATION DATA REPORT
DAKOTA CREEK INDUSTRIES
PORT OF ANACORTES

		Preliminary Groundwater Cleanup Level[1]	MW-1		Exceedance Ratio	MW-1 Duplicate	Exceedance Ratio	MW-2	Exceedance Ratio	MW-3	Exceedance Ratio	MW-4	Exceedance Ratio	MW-5	Exceedance Ratio
Dioxins and Furans (ug/L)	**TEF**														
								TEQ							
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1	--	1.4E-06	U		NA		NA		NA		NA		NA	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1	--	1.1E-06	U		NA		NA		NA		NA		NA	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.1	--	1.6E-06	U		NA		NA		NA		NA		NA	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.1	--	1.7E-06	U		NA		NA		NA		NA		NA	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.1	--	1.6E-06	U		NA		NA		NA		NA		NA	
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	0.01	--	2.5E-06	J	2.5E-08	NA		NA		NA		NA		NA	
Octachlorodibenzo-p-dioxin (OCDD)	0.0003	--	1.8E-05	J+	5.4E-09	NA		NA		NA		NA		NA	
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	0.1	--	1.0E-06	U		NA		NA		NA		NA		NA	
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.03	--	9.6E-07	U		NA		NA		NA		NA		NA	
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.3	--	7.5E-07	U		NA		NA		NA		NA		NA	
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.1	--	9.0E-07	U		NA		NA		NA		NA		NA	
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.1	--	9.6E-07	U		NA		NA		NA		NA		NA	
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	0.1	--	1.2E-06	U		NA		NA		NA		NA		NA	
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.1	--	6.7E-07	U		NA		NA		NA		NA		NA	
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	0.01	--	1.2E-06	U		NA		NA		NA		NA		NA	
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.01	--	1.5E-06	U		NA		NA		NA		NA		NA	
Octachlorodibenzofuran (OCDF)	0.0003	--	2.1E-06	J+	3.2E-10	NA		NA		NA		NA		NA	
Total Dioxins/Furans (TEQ)		5.00E-06			3.1E-08	NA		NA		NA		NA		NA	

Notes:

[1] Applicable Groundwater Cleanup Level is the lowest groundwater or surface water criteria as determined in the RI/FS/IA Work Plan by GeoEngineers, dated April 1, 2008 Adjustments to these preliminary cleanup levels were made based on natural background and reporting limit considerations per WAC 173-340-720(7)(c).

U = analyte was not detected at the listed concentration

J = Estimated concentration as indicated by the laboratory

J+ = Estimated concentration biased high

NA = sample not analyzed for constituent

TEF = Toxicity Equivalency Factor. WHO 2005.

Total TEQ = total toxicity equivalency quotient

Shading indicates concentration greater than the Preliminary Groundwater Cleanup Level.

-- Cleanup levels not developed for constituent

All Cleanup Levels (except background concentrations for metals) were obtained from the Washington State Department of Ecology Cleanup Levels and Risk Calculations (CLARC) On-Line Database.

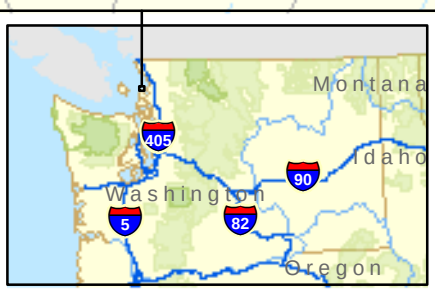
SEAT:\5\5147006\05\Finals\514700605 DCI RI Report Tables.xlsx

TABLE 7
PRELIMINARY CLEANUP LEVEL EXCEEDANCES - GROUNDWATER
REMEDIAL INVESTIGATION DATA REPORT
DAKOTA CREEK INDUSTRIES
PORT OF ANACORTES

Analyte (Preliminary CUL)	Samples	Concentrations of Exceedances (well location)	Notes
Arsenic (0.008 mg/L)	MW-4	0.0081 mg/L (upgradient well)	The preliminary CUL is the Washington State background arsenic concentration in groundwater. This slight exceedance is in a well where historic detections have been observed.
	MW-5	0.01 mg/L (newly installed well located north of the aluminum shop)	MW-5 is located downgradient from MW-4, a well with historic arsenic detections. The protection of surface water pathway does not appear to be a concern since the groundwater sample collected from MW-2, located down-gradient of MW-4 and MW-5, did not exceed the arsenic CUL. Based on a sediment contamination potential evaluation, groundwater discharges of arsenic are not expected to contaminate sediment at concentrations greater than Washington State Department of Ecology (Ecology) Sediment Quality Standards (SQS) criteria.
Mercury (0.000025 mg/L)	MW-1/MW-6 (duplicate of MW-1)	0.000037 mg/L / 0.000034 mg/L (west of synchrolift rail dock)	The concentration is marginally higher than the CUL, which is based on the protection of marine aquatic life. Based on a sediment contamination potential evaluation, groundwater discharges of mercury are not expected to contaminate sediment at concentrations greater than Ecology SQS criteria.

FIGURES

GeoEngineers



N
W E
S

4,000 0 4,000

Feet

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
3. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission.

Data Sources: ESRI Data & Maps, Street Maps 2005

Transverse Mercator, Zone 10 N North, North American Datum 1983
North arrow oriented to grid north

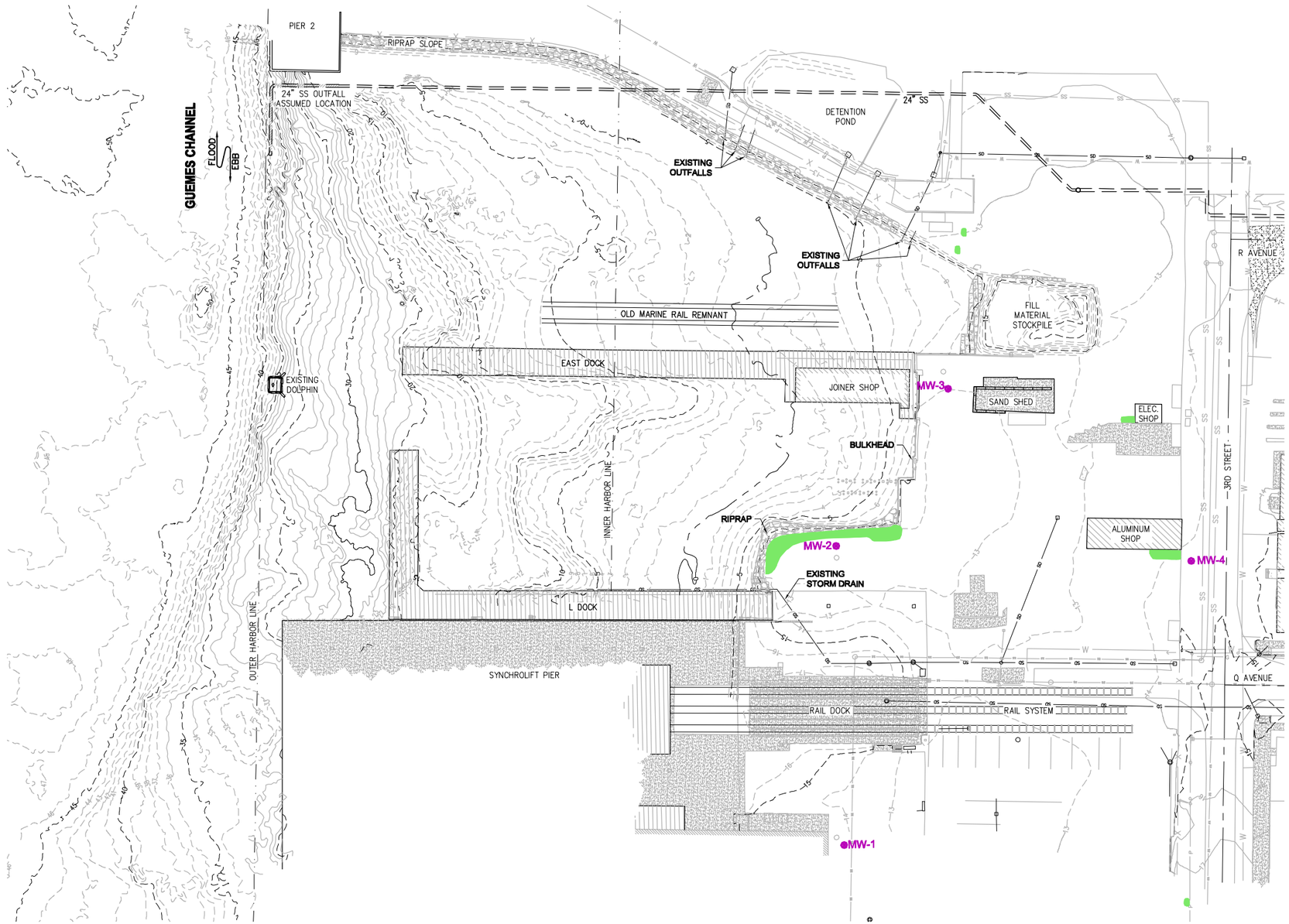
Vicinity Map

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

GeoEngineers

Figure 1

Office: SEA Path: P: \51\47006\00\GIS\514700600_F1.mxd Map Revised: March 5, 2009 MM2



Legend

- Fence
- CB — Catch Basin
- Sewer manhole
- Storm manhole
- Gravel
- Concrete
- Rip Rap
- Elevation contour
- MW-2 — Remedial Groundwater Sample Investigation (Landau Associates 2002 a)
- Greenspace / vegetation

N E S W

100 0 100

FEET

NOTES:

1. The locations of all features shown are approximate as identified prior to July 2008. Site is currently undergoing redevelopment activities that will significantly modify shoreline and basin features.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: AutoCAD drawing entitled "Existing Conditions and Project Control", file name 064065.01-1.14.dwg, by PND Engineers, Inc., dated September 2007.

SURVEY NOTES

1) THIS DRAWING BASED ON SURVEY BY LEONARD, BOUDINOT, SKODJE INC. NOV. 2006

2) HORIZONTAL DATUM = BETWEEN THE MONUMENT AT THE INTERSECTION OF "R" AVENUE AND 4TH STREET AND THE MONUMENT AT THE INTERSECTION OF "T" AVENUE AND 4TH STREET. BEARS S 88°06'27" E, AS CALCULATED FROM COORDINATES SHOWN ON RECORD OF SURVEY, "A SURVEY OF ANACORTES HARBOR LINES IN T.35 N., R.1 E., AND T.34 N., & 35 N., R.2 E., W.M.", AS RECORDED UNDER AUDITOR'S FILE NUMBER 200110030106, RECORDS OF SKAGIT COUNTY, WASHINGTON.

3) VERTICAL DATUM = STANDARD DISK, STAMPED "5 1922", SET VERTICALLY IN THE EAST END OF NORTH FACE OF CONCRETE FOUNDATION OF GREAT NORTHERN RAILWAY STATION ON EAST SIDE OF R" AVENUE AT SEVENTH STREET. IT IS 3 1/2 FEET WEST OF THE NORTHEAST CORNER OF BUILDING, 3/4 FOOT ABOVE BRICK SIDEWALK, AND 26 FEET WEST OF THE WEST RAIL OF RAILROAD TRACK. ELEVATION = 16.98 FEET ABOVE MEAN LOWER LOW WATER (MLLW).

4) THIS DRAWING REPRESENTS THE EXISTING CONDITIONS AS FOUND ON THE DATE OF SURVEY; NOV. 2006. F.B.#651, PGS. 68-70.

5) THE UTILITIES SHOWN HEREON REPRESENT WHAT WAS FOUND BY FIELD INVESTIGATION ON THE DATE OF THE SURVEY. THE 1-800 UTILITY LOCATE SERVICE WAS USED. OTHER UNDERGROUND UTILITIES DO EXIST IN THIS AREA. THIS MAP IS REPRESENTING SOME UTILITIES THAT WERE NOT APPARENT ON THE GROUND.

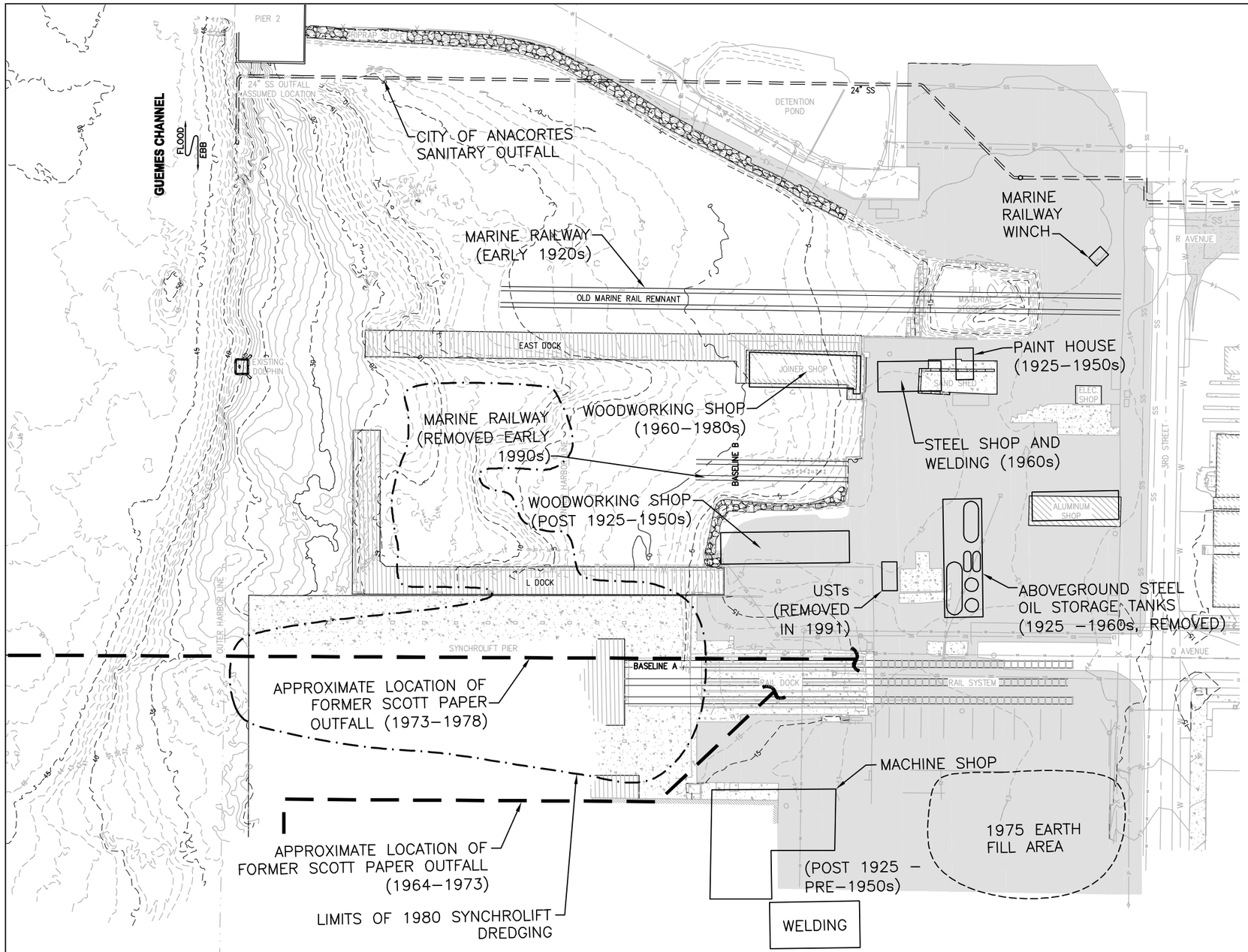
6) CONTOURS AND SURFACE FEATURES AS REPRESENTED HEREON ARE IN CONFORMANCE WITH ACCEPTED INDUSTRY PRACTICE. CONTOUR INTERVAL: 1 FOOT.

Site Plan - Existing Site Features (Pre-July 2008)

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

GeoEngineers

Figure 2



Legend

- Existing fence
- Catch Basin (CB)
- Sewer manhole
- Storm manhole
- Gravel
- Concrete
- Rip Rap
- Approximate synchrolift dredge limits
- Approximate boundary of Earth Fill Area
- Elevation contour
- Approximate footprint of historical structures - Labels indicate function and time period in existence.
- Sanitary Sewer

N E S W

100 0 100

FEET

NOTES:

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6) CONTOURS AND SURFACE FEATURES AS REPRESENTED HEREON ARE IN CONFORMANCE WITH ACCEPTED INDUSTRY PRACTICE. CONTOUR INTERVAL: 1 FOOT.

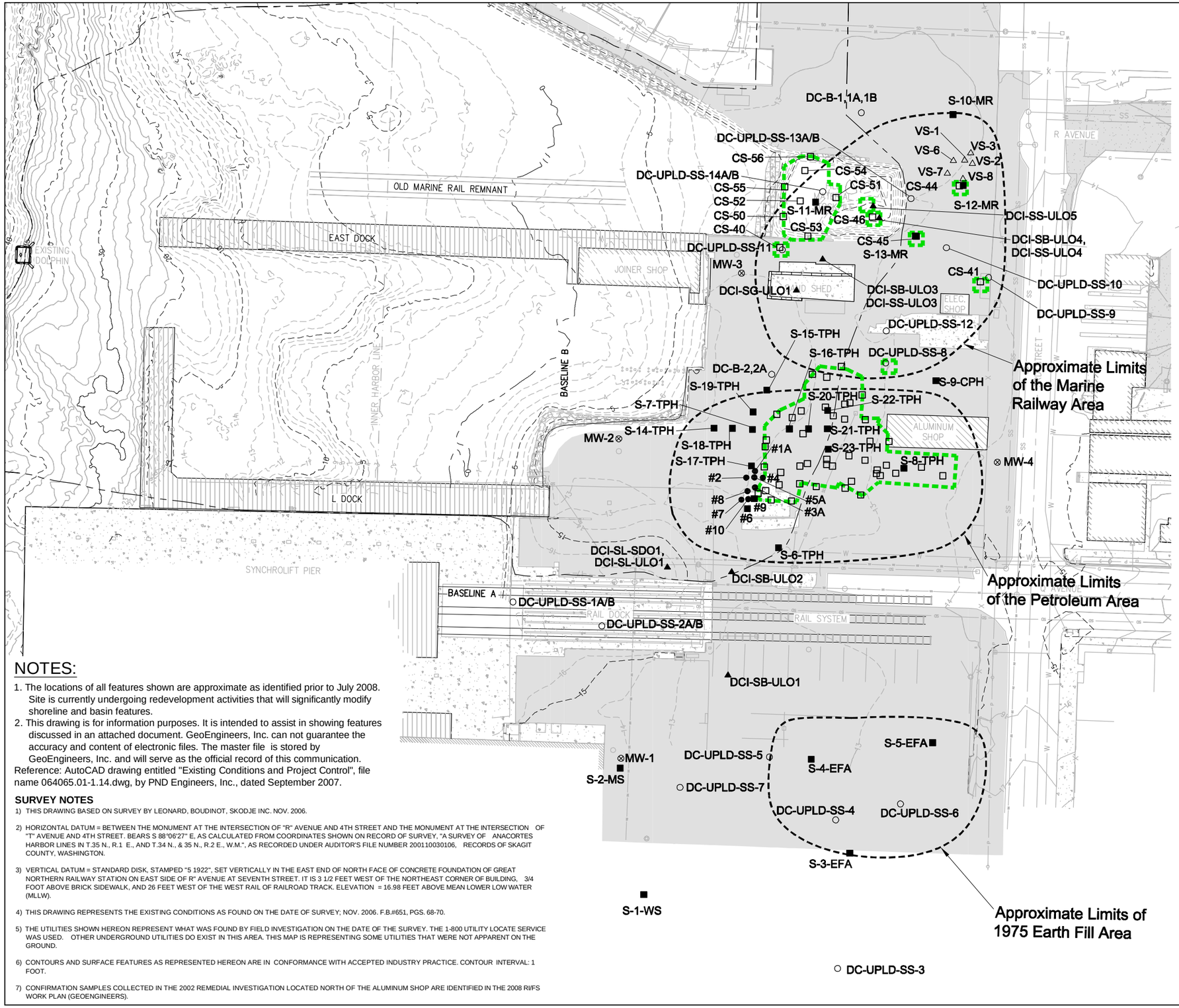
Site Plan - Historical Site Features

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

GeoEngineers

Figure 3

P:\15\5\47006\05\CAD\Task I\5\47006051 Fig 3.dwg\TAB:Fig 3 modified by tmichaud on Dec 23, 2009 - 9:40



Legend

Existing and Historical Site Features

- Existing fence
- Catch Basin
- Sewer manhole
- Storm manhole
- Gravel
- Concrete
- Rip Rap
- Elevation contour

Pre-2002 Soil Sample Location and Type

- TPHs Soil Excavation (A-1 Pump Service 1991)
- Environmental Site Assessment (Otten Engineering 1997)
- Hydraulic Winch Soil Excavation (Landau Associates 2001)
- EPA Site Inspection (Weston 2001)

2002 Soil/Groundwater Sample Location and Type

- Confirmation Soil Sample (Landau Associates 2002 a)
- Remedial Soil Sample Investigation (Landau Associates 2002 a)
- Remedial Groundwater Sample Investigation (Landau Associates 2002 a)
- Limits of the 2002 Remedial Excavation (Landau Associates, 2002 c)

80 0 80
FEET

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6) CONTOURS AND SURFACE FEATURES AS REPRESENTED HEREON ARE IN CONFORMANCE WITH ACCEPTED INDUSTRY PRACTICE. CONTOUR INTERVAL: 1 FOOT.

7) CONFIRMATION SAMPLES COLLECTED IN THE 2002 REMEDIAL INVESTIGATION LOCATED NORTH OF THE ALUMINUM SHOP ARE IDENTIFIED IN THE 2008 RI/FS WORK PLAN (GEOENGINEERS).

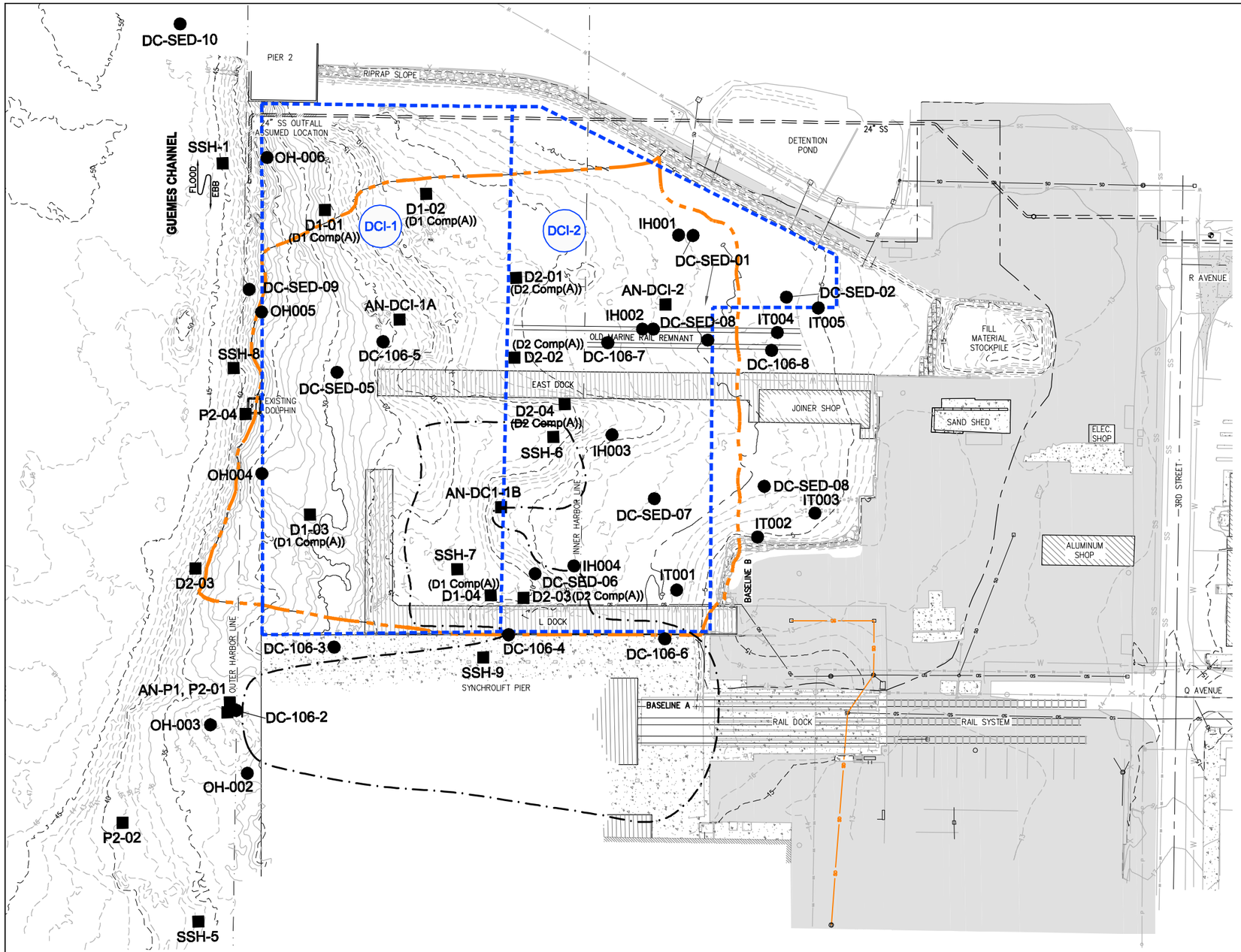
Previous Soil and Groundwater Sample Locations

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

GeoEngineers

Figure 4

P:\15\47006\05\CAD\TASK 1\15\47006051 Fig 4.dwg\TAB:Fig 4 MODIFIED BY TMICHAUD ON DEC 23, 2009 - 9:41



Legend

Existing and Historical Site Features

- Existing fence
- Telephone junction box (pedestal)
- Catch Basin
- Sewer manhole
- Storm manhole
- Found rebar with yellow cap marked as noted
- Rebar/survey marker
- Gravel
- Concrete
- Rip Rap
- Elevation contour
- Approximate synchrolift dredge limits (late 1980s)

Historical Sediment Sample Location and Type

- Dredge Material Management Unit (DMMU) Designation
- DMMU boundaries
- Subsurface sediment core
- Surface sediment grab

Future Redevelopment Feature

- Planned project Pier 1 dredge boundary

N W E S

100 0 100

FEET

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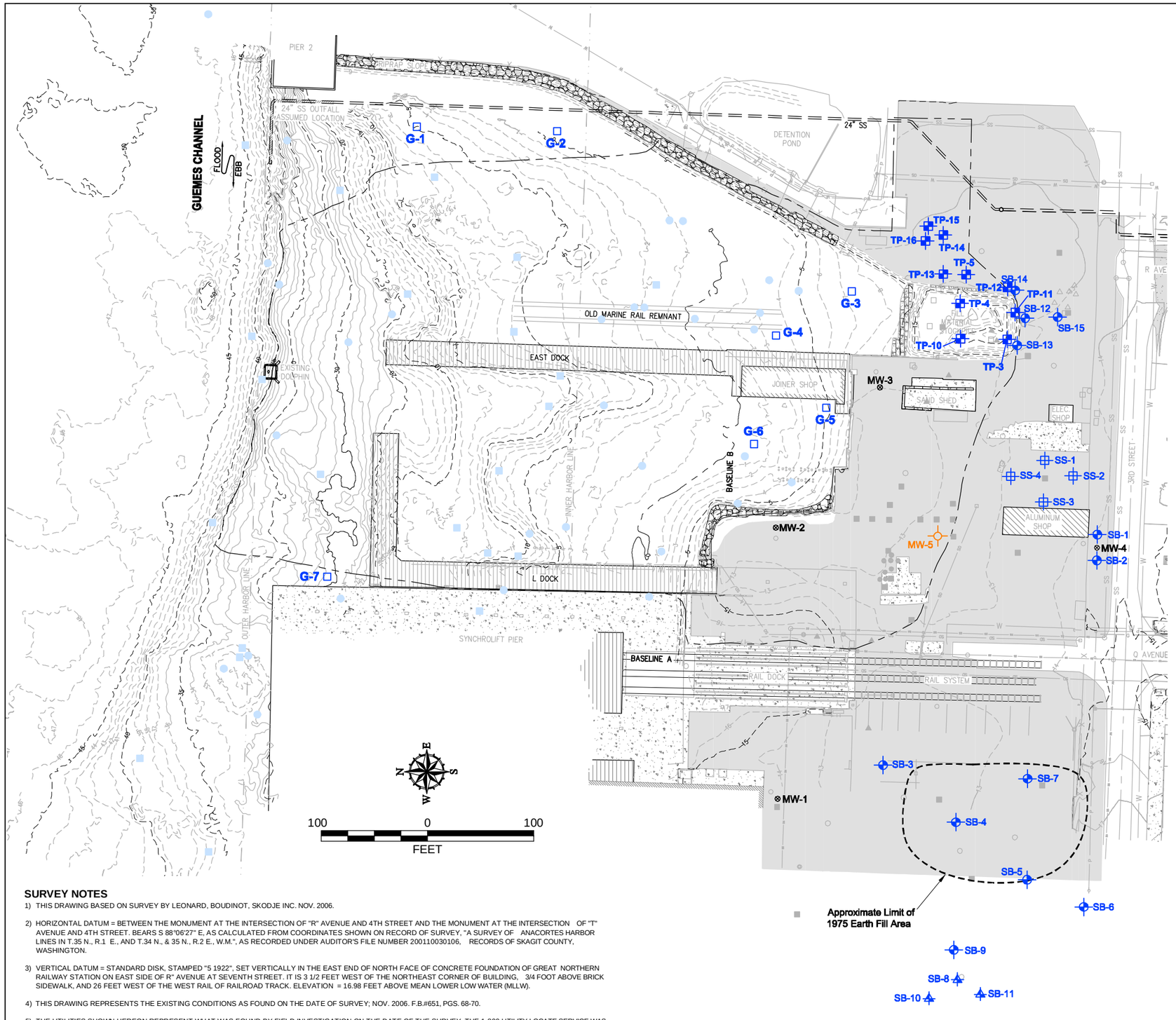
Previous Sediment Sample Locations

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

GeoEngineers

Figure 5

P:\15\47006\05\CAD\Task 15\470605T1 Fig 5.dwg\TAB:F5 Modified by TMichaud on Dec 23, 2009 - 9:43



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Legend

Existing and Historical Site Features

- Existing fence
- CB Catch Basin
- Sewer manhole
- Storm manhole
- Gravel
- Concrete
- Rip Rap
- Elevation contour

Historical Soil/Groundwater Sample Location and Type

- Confirmation soil sample (Landau Associates 2002 a)
- TPH soil excavation (A-1 Pump Service 1991)
- Environmental Site Assessment (Otten Engineering 1997)
- Hydraulic winch soil excavation (Landau Associates 2001)
- EPA site inspection (Weston 2001)
- Remedial investigation soil sample (Landau Associates 2002 a)
- MW-4 ⊗ Remedial investigation groundwater sample (Landau Associates 2002 a)
- Subsurface sediment core
- Subsurface sediment grab

Remedial Investigation Field Study Sample Location and Type

- SB-2 Soil borings (GeoEngineers 2008)
- MW-5 Monitoring well (GeoEngineers 2008)
- SS-1 Surface soil samples (GeoEngineers 2008)
- SB-11 Hand auger soil boring (GeoEngineers 2008)
- TP-15 Test pit (GeoEngineers 2008)
- G-7 Sediment core sample and surface sample location (March 2008)

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3. See Tables 6 and 7 for tabulated data screened against cleanup criteria.

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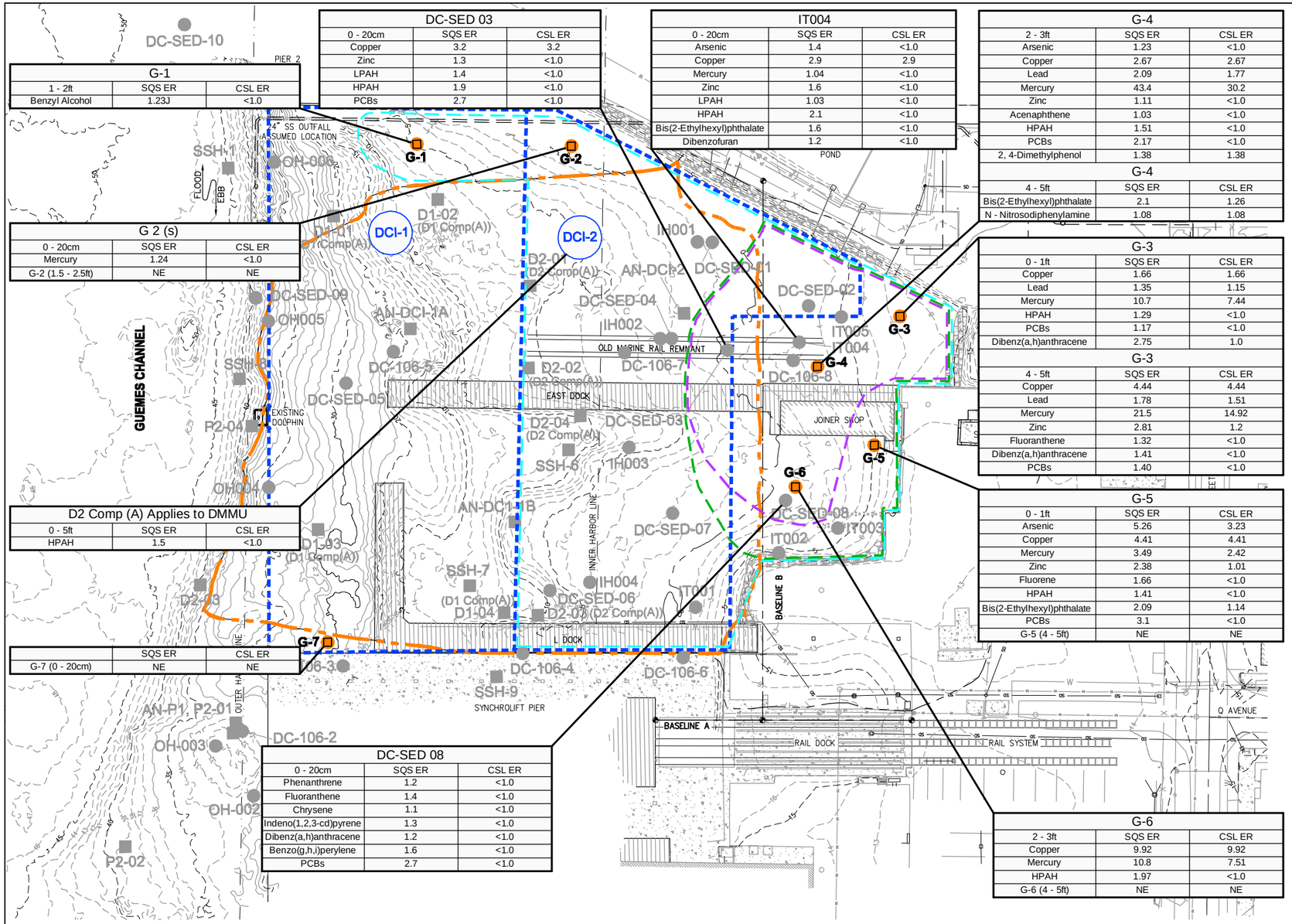
Confirmed RI Field Study Sampling Locations

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

GeoEngineers

Figure 6

P:\15\47006\05\CAD\Task 1\5\47006051 Fig 6.dwg\TAB:Sample Locations modified by tmichaud on Dec 23, 2009 - 9:45



G-1		
1 - 2ft	SQS ER	CSL ER
Benzyl Alcohol	1.23J	<1.0

G 2 (s)		
0 - 20cm	SQS ER	CSL ER
Mercury	1.24	<1.0
G-2 (1.5 - 2.5ft)	NE	NE

D2 Comp (A) Applies to DMMU		
0 - 5ft	SQS ER	CSL ER
HPAH	1.5	<1.0

	SQS ER	CSL ER
G-7 (0 - 20cm)	NE	NE

DC-SED 03		
0 - 20cm	SQS ER	CSL ER
Copper	3.2	3.2
Zinc	1.3	<1.0
LPAH	1.4	<1.0
HPAH	1.9	<1.0
PCBs	2.7	<1.0

IT004		
0 - 20cm	SQS ER	CSL ER
Arsenic	1.4	<1.0
Copper	2.9	2.9
Mercury	1.04	<1.0
Zinc	1.6	<1.0
LPAH	1.03	<1.0
HPAH	2.1	<1.0
Bis(2-Ethylhexyl)phthalate	1.6	<1.0
Dibenzofuran	1.2	<1.0

G-4		
2 - 3ft	SQS ER	CSL ER
Arsenic	1.23	<1.0
Copper	2.67	2.67
Lead	2.09	1.77
Mercury	43.4	30.2
Zinc	1.11	<1.0
Acenaphthene	1.03	<1.0
HPAH	1.51	<1.0
PCBs	2.17	<1.0
2, 4-Dimethylphenol	1.38	1.38
G-4		
4 - 5ft	SQS ER	CSL ER
Bis(2-Ethylhexyl)phthalate	2.1	1.26
N - Nitrosodiphenylamine	1.08	1.08

G-3		
0 - 1ft	SQS ER	CSL ER
Copper	1.66	1.66
Lead	1.35	1.15
Mercury	10.7	7.44
HPAH	1.29	<1.0
PCBs	1.17	<1.0
Dibenz(a,h)anthracene	2.75	1.0
G-3		
4 - 5ft	SQS ER	CSL ER
Copper	4.44	4.44
Lead	1.78	1.51
Mercury	21.5	14.92
Zinc	2.81	1.2
Fluoranthene	1.32	<1.0
Dibenz(a,h)anthracene	1.41	<1.0
PCBs	1.40	<1.0

G-5		
0 - 1ft	SQS ER	CSL ER
Arsenic	5.26	3.23
Copper	4.41	4.41
Mercury	3.49	2.42
Zinc	2.38	1.01
Fluorene	1.66	<1.0
HPAH	1.41	<1.0
Bis(2-Ethylhexyl)phthalate	2.09	1.14
PCBs	3.1	<1.0
G-5 (4 - 5ft)	NE	NE

G-6		
2 - 3ft	SQS ER	CSL ER
Copper	9.92	9.92
Mercury	10.8	7.51
HPAH	1.97	<1.0
G-6 (4 - 5ft)	NE	NE

DC-SED 08		
0 - 20cm	SQS ER	CSL ER
Phenanthrene	1.2	<1.0
Fluoranthene	1.4	<1.0
Chrysene	1.1	<1.0
Indeno(1,2,3-cd)pyrene	1.3	<1.0
Dibenz(a,h)anthracene	1.2	<1.0
Benzo(g,h,i)perylene	1.6	<1.0
PCBs	2.7	<1.0

Legend

Existing and Historical Site Features

- Elevation contour
- DCI-2 — Dredge Material Management Unit (DMMU) Designation
- DMMU boundaries

Historical Sediment Sample Location and Type

- Subsurface sediment core
- Surface sediment grab

Future Redevelopment Feature

- Planned project Pier 1 dredge boundary

2008 RI/FS Sample Locations and Type

- G-7 — Sediment core sample and surface sample location (March 2008)

NE = Concentration of chemicals of concern did not exceed the SQS or CSL criteria.

SQS ER = Ratio of analytical result to sediment quality standard criteria.

CSL ER = Ratio of analytical result to cleanup screening level.

- Estimated Extent of Surface and Subsurface Sediments Exceeding SQS
- Estimated Extent of Surface Sediments Exceeding CSL (0 to 1 foot)
- Estimated Extent of Subsurface Sediments Exceeding CSL (1 to 4 feet)

100 0 100
FEET

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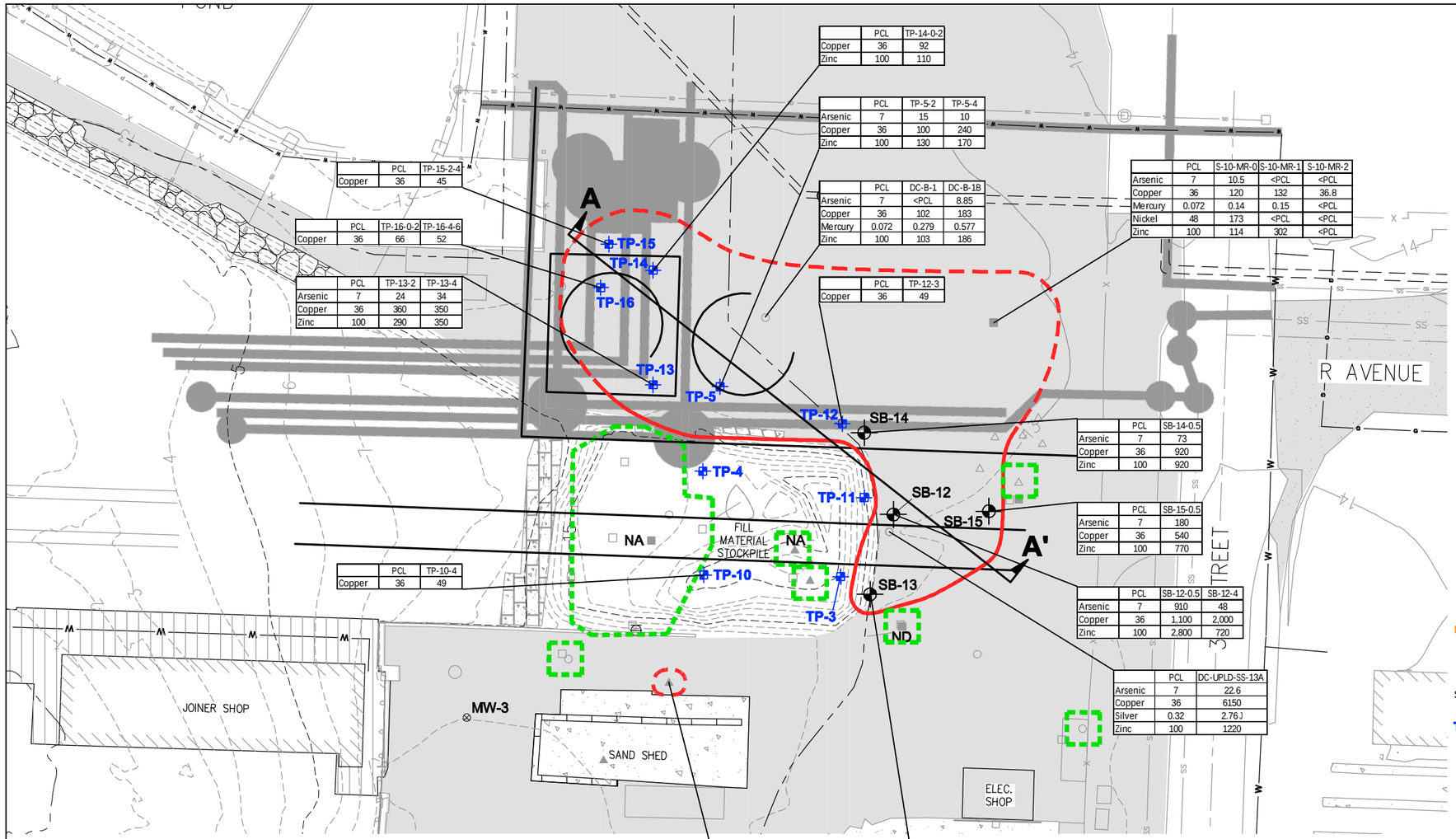
Summary of Sediment Sample Preliminary Cleanup Level Exceedances

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

GeoEngineers

Figure 7

P:\15\6\4700605\CAD\TASK 15\4700605TI FIG 7.DWG\TAB:F7 MODIFIED BY TMICHAUD ON SEP 07, 2010 - 15:09



	PCL	TP-14-0-2
Copper	36	92
Zinc	100	110

	PCL	TP-5-2	TP-5-4
Arsenic	7	15	10
Copper	36	100	240
Zinc	100	130	170

	PCL	TP-15-2-4
Copper	36	45

	PCL	DC-B-1	DC-B-1B
Arsenic	7	<PCL	8.85
Copper	36	102	183
Mercury	0.072	0.279	0.577
Zinc	100	103	186

	PCL	S-10-MR-0	S-10-MR-1	S-10-MR-2
Arsenic	7	10.5	<PCL	<PCL
Copper	36	120	132	36.8
Mercury	0.072	0.14	0.15	<PCL
Nickel	48	173	<PCL	<PCL
Zinc	100	114	302	<PCL

	PCL	TP-16-0-2	TP-16-4-6
Copper	36	66	52

	PCL	TP-12-3
Copper	36	49

	PCL	TP-13-2	TP-13-4
Arsenic	7	24	34
Copper	36	360	350
Zinc	100	290	350

	PCL	SB-14-0.5
Arsenic	7	73
Copper	36	920
Zinc	100	920

	PCL	SB-15-0.5
Arsenic	7	180
Copper	36	540
Zinc	100	770

	PCL	TP-10-4
Copper	36	49

	PCL	SB-12-0.5	SB-12-4
Arsenic	7	910	48
Copper	36	1,100	2,000
Zinc	100	2,800	720

	PCL	DC-UPLD-SS-13A
Arsenic	7	22.6
Copper	36	6150
Silver	0.32	2.76 J
Zinc	100	1220

		DCI-SB-UL03-	
	PCL	20-LAI	60-LAI
Mercury	0.072	ND	0.1 J
Silver	0.32	1.9 J	ND

	PCL	SB-13-0.5	SB-13-4
Copper	36	45	73
Zinc	100	<PCL	110

Legend

Existing and Historical Site Features

- Existing fence
- Gravel
- Concrete
- Rip Rap
- Elevation contour
- Limits of the 2002 Remedial Excavation (Landau Associates, 2002 c)
- Estimated extent of soil exceeding metals preliminary cleanup levels
- Area of soil removal performed for utility installation during Interim Action Construction

Historical Soil/Groundwater Sample Location and Type

- Confirmation soil sample (Landau Associates 2002 a)
- TPH soil excavation (A-1 Pump Service 1991)
- Environmental Site Assessment (Otten Engineering 1997)
- Hydraulic winch soil excavation (Landau Associates 2001)
- EPA site inspection (Weston 2001)
- Remedial investigation soil sample (Landau Associates 2002 a)
- Remedial investigation groundwater monitoring well (Landau Associates 2002 a)

Remedial Investigation Field Study Sample Location and Type

- SB-2 Soil borings (GeoEngineers 2008)
- MW-5 Monitoring well (GeoEngineers 2008)
- SS-1 Surface soil samples (GeoEngineers 2008)
- SB-11 Hand auger soil boring (GeoEngineers 2008)
- TP-15 Test pit (GeoEngineers 2008)
- ER Ratio of analytical result to preliminary cleanup level

NOTE: Remediated historical exceedences not shown.

40 0 40
FEET

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3. See Tables 1 and 2 for tabulated data screened against cleanup criteria.
4. Soil CUL exceedences are presented in black text and groundwater CUL exceedences are presented in blue text.

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SURVEY NOTES

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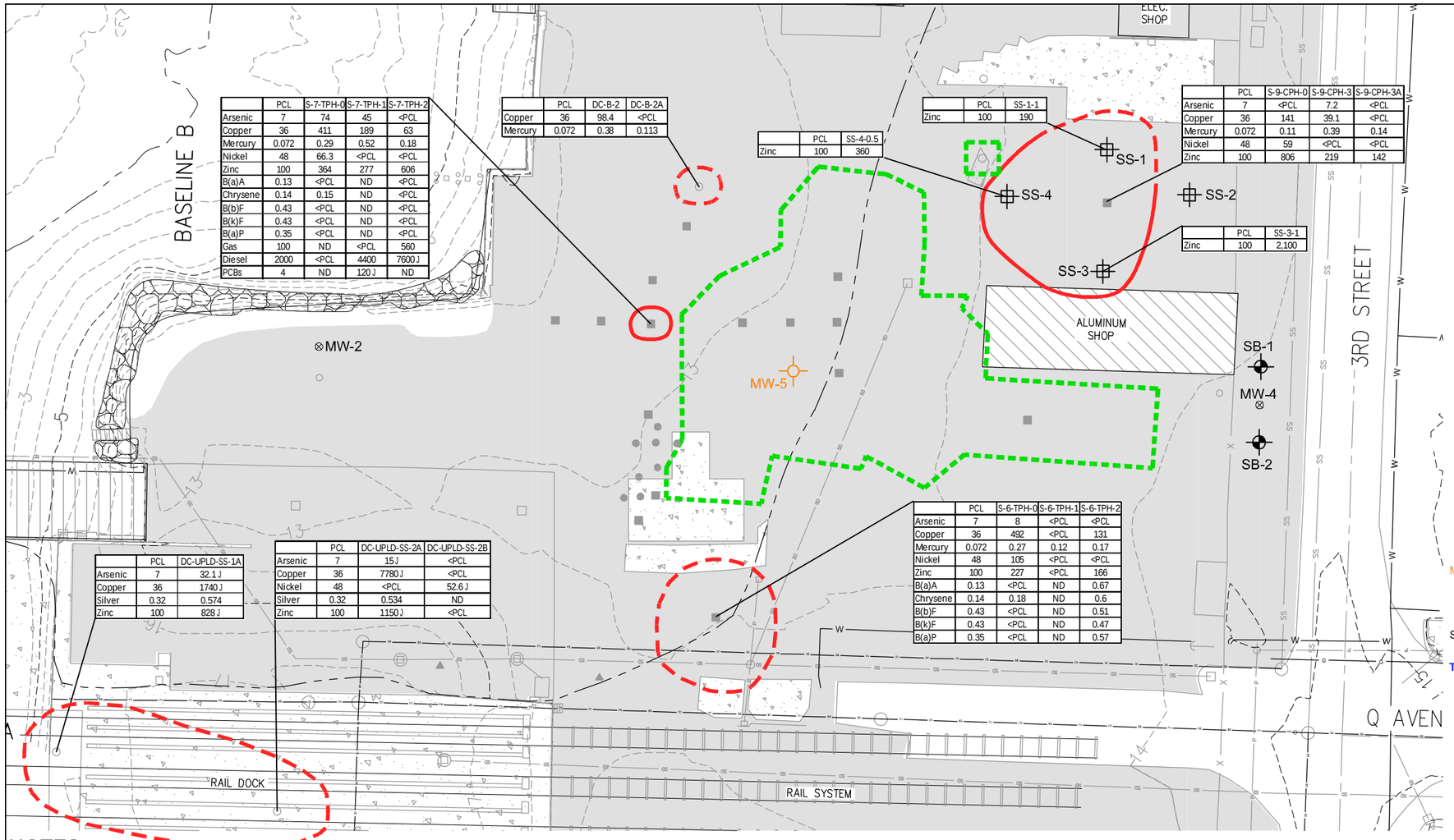
Summary of Soil Sample Preliminary Cleanup Level Exceedances

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

GeoEngineers

Figure 8

P:\15\5l47006105\CAD\Task I\5l47006057I Fig II-12.dwg\TAB:Fig 8 Modified by THICHAUD on Jul 15, 2010 - 11:37



	PCL	S-7-TPH-0	S-7-TPH-1	S-7-TPH-2
Arsenic	7	74	45	<PCL
Copper	36	411	189	63
Mercury	0.072	0.29	0.52	0.18
Nickel	48	66.3	<PCL	<PCL
Zinc	100	364	277	606
B(a)A	0.13	<PCL	ND	<PCL
Chrysene	0.14	0.15	ND	<PCL
B(b)F	0.43	<PCL	ND	<PCL
B(k)F	0.43	<PCL	ND	<PCL
B(a)P	0.35	<PCL	ND	<PCL
Gas	100	ND	<PCL	560
Diesel	2000	<PCL	4400	7600 J
PCBs	4	ND	120 J	ND

	PCL	DC-B-2	DC-B-2A
Copper	36	98.4	<PCL
Mercury	0.072	0.38	0.113

	PCL	SS-4-0.5
Zinc	100	360

	PCL	SS-1-1
Zinc	100	190

	PCL	S-9-CPH-0	S-9-CPH-3	S-9-CPH-3A
Arsenic	7	<PCL	7.2	<PCL
Copper	36	141	39.1	<PCL
Mercury	0.072	0.11	0.39	0.14
Nickel	48	59	<PCL	<PCL
Zinc	100	806	219	142

	PCL	SS-3-1
Zinc	100	2,100

	PCL	S-6-TPH-0	S-6-TPH-1	S-6-TPH-2
Arsenic	7	8	<PCL	<PCL
Copper	36	492	<PCL	131
Mercury	0.072	0.27	0.12	0.17
Nickel	48	105	<PCL	<PCL
Zinc	100	227	<PCL	166
B(a)A	0.13	<PCL	ND	0.67
Chrysene	0.14	0.18	ND	0.6
B(b)F	0.43	<PCL	ND	0.51
B(k)F	0.43	<PCL	ND	0.47
B(a)P	0.35	<PCL	ND	0.57

	PCL	DC-UPLD-SS-1A
Arsenic	7	32.1 J
Copper	36	1740 J
Silver	0.32	0.574
Zinc	100	828 J

	PCL	DC-UPLD-SS-2A	DC-UPLD-SS-2B
Arsenic	7	15 J	<PCL
Copper	36	7780 J	<PCL
Nickel	48	<PCL	52.6 J
Silver	0.32	0.534	ND
Zinc	100	1150 J	<PCL

Legend

Existing and Historical Site Features

- Existing fence
- Gravel
- Concrete
- Rip Rap
- Elevation contour
- Limits of the 2002 Remedial Excavation (Landau Associates, 2002 c)
- Estimated extent of soil exceeding metals preliminary cleanup levels

Historical Soil/Groundwater Sample Location and Type

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- Remedial investigation soil sample (Landau Associates 2002 a)
- Remedial investigation groundwater monitoring well (Landau Associates 2002 a)

Remedial Investigation Field Study Sample Location and Type

- SB-2 — Soil borings (GeoEngineers 2008)
- MW-5 — Monitoring well (GeoEngineers 2008)
- SS-1 — Surface soil samples (GeoEngineers 2008)
- SB-11 — Hand auger soil boring (GeoEngineers 2008)
- TP-15 — Test pit (GeoEngineers 2008)
- ER — Ratio of analytical result to preliminary cleanup level

NOTE: Remediated historical exceedences not shown.

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Reference: AutoCAD drawing entitled "Existing Conditions and Project Control", file name 064065.01-1.14.dwg, by PND Engineers, Inc., dated September 2007.

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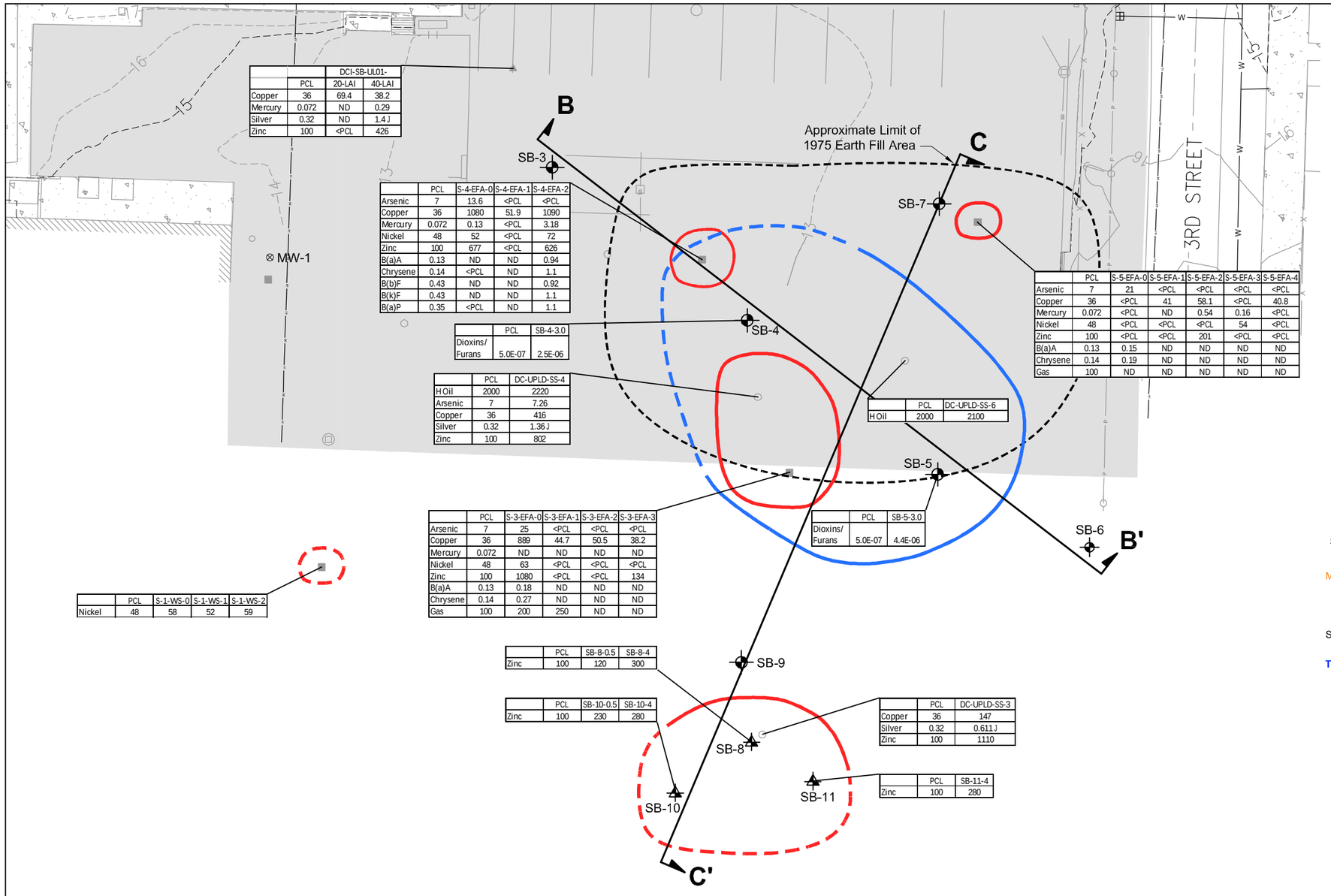
40 0 40
FEET

Summary of Soil Sample Preliminary Cleanup Level Exceedances

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

GeoEngineers

Figure 9



	PCL	DCI-SB-UL01-20-LAI	DCI-SB-UL01-40-LAI
Copper	36	69.4	38.2
Mercury	0.072	ND	0.29
Silver	0.32	ND	1.4 J
Zinc	100	<PCL	426

	PCL	S-4-EFA-0	S-4-EFA-1	S-4-EFA-2
Arsenic	7	13.6	<PCL	<PCL
Copper	36	1080	51.9	1090
Mercury	0.072	0.13	<PCL	3.18
Nickel	48	52	<PCL	72
Zinc	100	677	<PCL	626
B(a)A	0.13	ND	ND	0.94
Chrysene	0.14	<PCL	ND	1.1
B(b)F	0.43	ND	ND	0.92
B(k)F	0.43	ND	ND	1.1
B(a)P	0.35	<PCL	ND	1.1

	PCL	SB-4-3.0
Dioxins/ Furans	5.0E-07	2.5E-06

	PCL	DC-UPLD-SS-4
H Oil	2000	2220
Arsenic	7	7.26
Copper	36	416
Silver	0.32	1.36 J
Zinc	100	802

	PCL	S-5-EFA-0	S-5-EFA-1	S-5-EFA-2	S-5-EFA-3	S-5-EFA-4
Arsenic	7	21	<PCL	<PCL	<PCL	<PCL
Copper	36	<PCL	41	58.1	<PCL	40.8
Mercury	0.072	<PCL	ND	0.54	0.16	<PCL
Nickel	48	<PCL	<PCL	<PCL	54	<PCL
Zinc	100	<PCL	<PCL	201	<PCL	<PCL
B(a)A	0.13	0.15	ND	ND	ND	ND
Chrysene	0.14	0.19	ND	ND	ND	ND
Gas	100	ND	ND	ND	ND	ND

	PCL	DC-UPLD-SS-6
H Oil	2000	2100

	PCL	S-5-3.0
Dioxins/ Furans	5.0E-07	4.4E-06

	PCL	S-3-EFA-0	S-3-EFA-1	S-3-EFA-2	S-3-EFA-3
Arsenic	7	25	<PCL	<PCL	<PCL
Copper	36	889	44.7	50.5	38.2
Mercury	0.072	ND	ND	ND	ND
Nickel	48	63	<PCL	<PCL	<PCL
Zinc	100	1080	<PCL	<PCL	134
B(a)A	0.13	0.18	ND	ND	ND
Chrysene	0.14	0.27	ND	ND	ND
Gas	100	200	250	ND	ND

	PCL	S-1-WS-0	S-1-WS-1	S-1-WS-2
Nickel	48	58	52	59

	PCL	SB-8-0.5	SB-8-4
Zinc	100	120	300

	PCL	SB-10-0.5	SB-10-4
Zinc	100	230	280

	PCL	DC-UPLD-SS-3
Copper	36	147
Silver	0.32	0.611 J
Zinc	100	1110

	PCL	SB-11-4
Zinc	100	280

Legend

Existing and Historical Site Features

- Existing fence
- Gravel
- Concrete
- Rip Rap
- Elevation contour
- Limits of the 2002 Remedial Excavation (landau Associates, 2002 c)
- Estimated extent of soil exceeding metals preliminary cleanup levels
- Estimated extent of soil exceeding dioxin/furan preliminary cleanup levels

Historical Soil/Groundwater Sample Location and Type

- Confirmation soil sample (Landau Associates 2002 a)
- TPH soil excavation (A-1 Pump Service 1991)
- Environmental Site Assessment (Otten Engineering 1997)
- Hydraulic winch soil excavation (Landau Associates 2001)
- EPA site inspection (Weston 2001)
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- Remedial investigation groundwater monitoring well (Landau Associates 2002 a)

Remedial Investigation Field Study Sample Location and Type

- SB-2 Soil borings (GeoEngineers 2008)
- MW-5 Monitoring well (GeoEngineers 2008)
- SS-1 Surface soil samples (GeoEngineers 2008)
- SB-11 Hand auger soil boring (GeoEngineers 2008)
- TP-15 Test pit (GeoEngineers 2008)
- ER Ratio of analytical result to preliminary cleanup level

NOTE: Remediated historical exceedences not shown.

40 0 40
FEET

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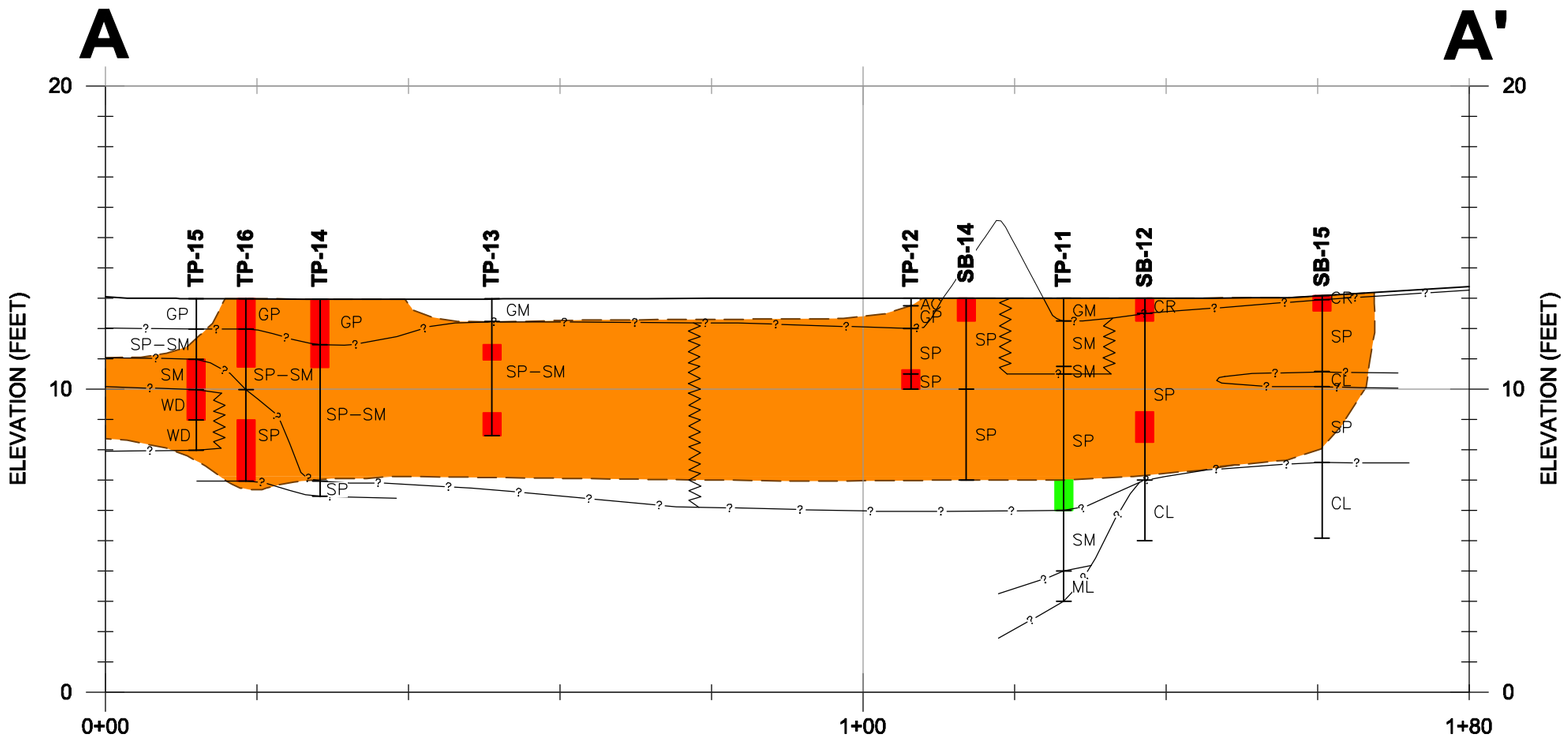
Summary of Soil Sample Preliminary Cleanup Level Exceedances

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

GeoEngineers

Figure 10

P:\15\15147006\05\CAD\TASK 1\15147006051TI FIG 11-12.DWG\TAB:FIG 10 MODIFIED BY TMICHAUD ON JUL 15, 2010 - 12:33



Legend

- TP-13 — Sample Name
- ? — Inferred Soil Contact
- Soil Sample Collected Exceeding Preliminary Cleanup Levels
- Soil Sample not Exceeding Preliminary Cleanup Levels
- SP–SM — Soil Type
- Approximate Extent of Soil Exceeding Preliminary Cleanup Levels

Soil Classifications

GP - Crush Rock
SP-SM - Silty Sand with Debris (Wood, Brick, Tile)
WD - Woody Debris (Saw Dust, Timber)
SP - Gray Fine Sand (Native)
ML - Gray Silt
CL - Brown / Gray Clay
DB - Debris (Brick, Tile, Concrete)
SM - Sand with Gravel

HORIZONTAL SCALE: 1"= 20'
VERTICAL SCALE: 1"= 5'
VERTICAL EXAGGERATION: 4X

20 0 20
FEET

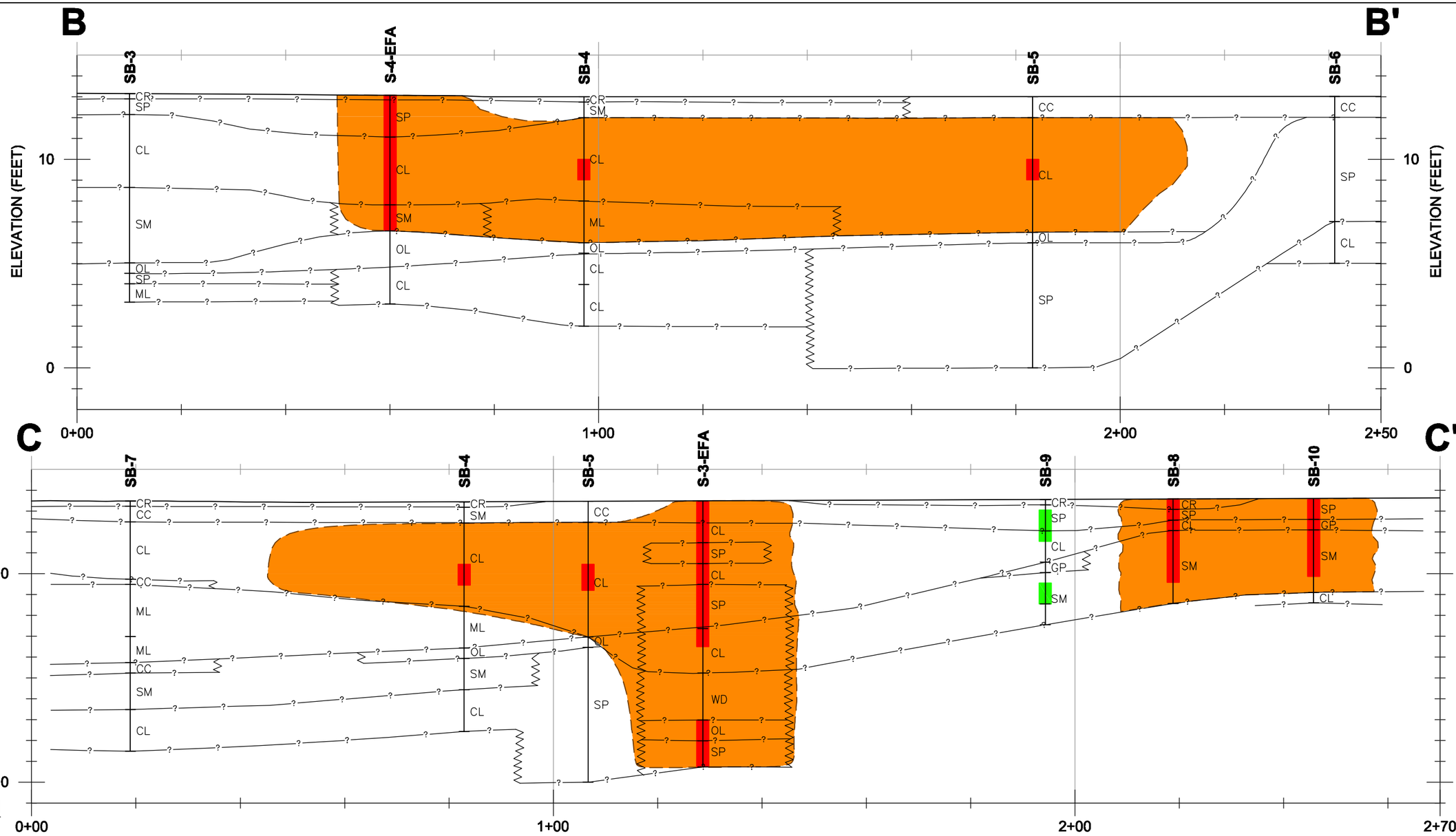
Cross-Sections A-A'

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

GeoEngineers

Figure 11

P:\15\14700605\CAD\TASK 1\15147006051TI Fig 11-12.dwg\TAB:Fig 11 MODIFIED BY TMICHAUD ON JUL 16, 2010 - 14:46



Legend

SB-4 — Sample Name

Inferred Soil Contact

Soil Sample Collected Exceeding Preliminary Cleanup Levels

Soil Sample not Exceeding Preliminary Cleanup Levels

SP—SM — Soil Type

Approximate Extent of Soil Exceeding Preliminary Cleanup Levels

Soil Classifications

GP - Crush Rock
SP-SM - Silty Sand with Debris (Wood, Brick, Tile)
WD - Woody Debris (Saw Dust, Timber)
SP - Gray Fine Sand (Native)
SM- Sand and Gravel
ML - Gray Silt
CL - Brown / Gray Clay
DB - Debris (Brick, Tile, Concrete)
OL - Silt with Organics

HORIZONTAL SCALE: 1"= 20'
VERTICAL SCALE: 1"= 5'
VERTICAL EXAGGERATION: 4X

20 0 20
FEET

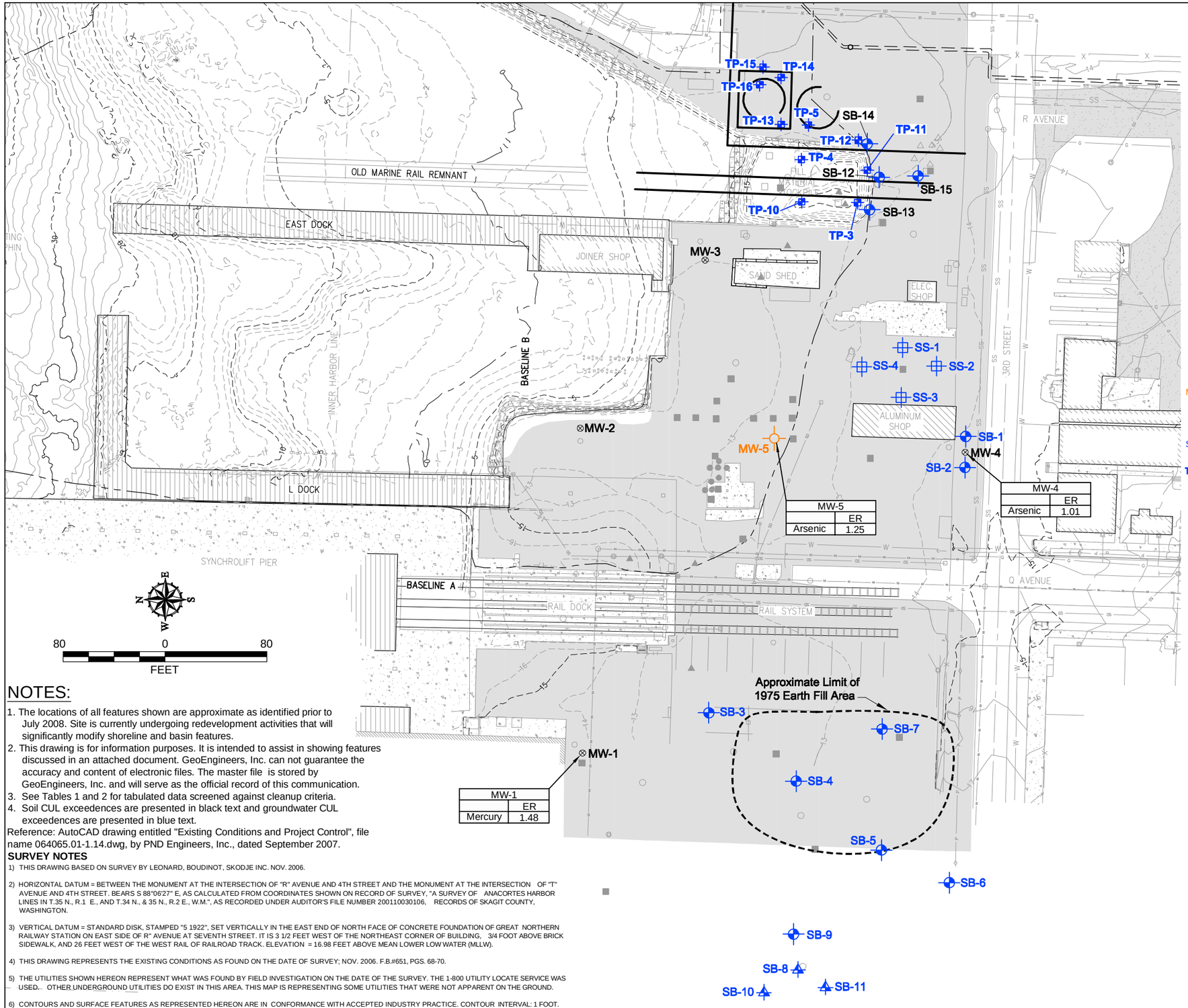
Cross-Sections B-B' and C-C'

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

GeoEngineers

Figure 12

P:\15\14700605\CAD\TASK 1\15147006051 Fig 11-12.DWG\TAB:Fig 12 MODIFIED BY TMICHAUD ON JUL 16, 2010 - 14:52



Legend

Existing and Historical Site Features

- Existing fence
- Gravel
- Concrete
- Rip Rap
- Elevation contour

Historical Soil/Groundwater Sample Location and Type

- Confirmation soil sample (Landau Associates 2002 a)
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ER Ratio of analytical result to preliminary cleanup level

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Summary of Groundwater Preliminary Cleanup Level Exceedances

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

GeoEngineers

Figure 13

P:\15\5\47006\05\CAD\Task 15\47006057 Fig 13.dwg\TAB:Fig 9 Modified by TMichaud on Jul 15, 2010 - 12:27

APPENDICES

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APPENDIX A
Exploration Logs

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% RETAINED ON NO. 200 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	CC	Cement Concrete
	AC	Asphalt Concrete
	CR	Crushed Rock/ Quarry Spalls
	TS	Topsoil/ Forest Duff/Sod

Measured groundwater level in exploration, well, or piezometer

Groundwater observed at time of exploration

Perched water observed at time of exploration

Measured free product in well or piezometer

Graphic Log Contact

Distinct contact between soil strata or geologic units

Approximate location of soil strata change within a geologic soil unit

Material Description Contact

Distinct contact between soil strata or geologic units

Approximate location of soil strata change within a geologic soil unit

Sampler Symbol Descriptions

2.4-inch I.D. split barrel

Standard Penetration Test (SPT)

Shelby tube

Piston

Direct-Push

Bulk or grab

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

A "P" indicates sampler pushed using the weight of the drill rig.

Laboratory / Field Tests

%F	Percent fines
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
OC	Organic content
PM	Permeability or hydraulic conductivity
PP	Pocket penetrometer
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
NT	Not Tested

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

KEY TO EXPLORATION LOGS

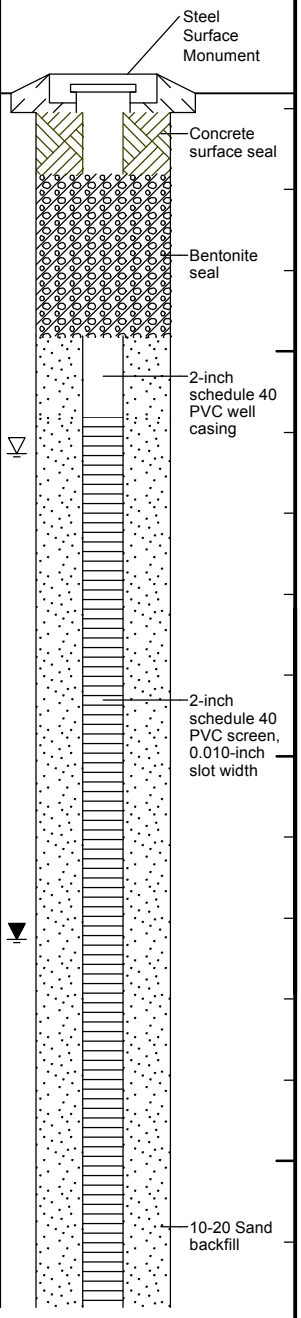
GeoEngineers

FIGURE A-1

Date(s) Drilled	5/27/08	Logged By	SHL	Checked By	RST
Drilling Contractor	Cascade Drilling	Drilling Method	Hollow Stem Auger	Sampling Methods	D&M
Auger Data	4-inch ID	Hammer Data	300 lb hammer/30 in drop automatic	Drilling Equipment	Truck-mounted B-61
Total Well Depth (ft)	19	Top of Casing Elevation (ft)	12.74	Groundwater Elevation (ft)	8.74
Vertical Datum		Datum/ System		Easting(x): Northing(y):	

Elevation feet	Depth feet	SAMPLES Interval	Recovered (in)	Blows/foot	Sub-Sample Sample Number	Testing	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor PID (ppm)
	0							CR	Crushed rock (fill)		
								SP	Brown medium sand with gravel (very dense, moist)		
			12	67	1					NS	<1
	5		18	28	2			SM	Brown/gray silty fine sand with gravel (medium dense, moist)	SS	2
			0	50/0"				CC	Concrete	NT	NT
								SP	Brown/gray fine to medium sand (loose, wet) (native)		
	10		12	9	3					NS	<1
			18	7	4					NS	<1
	15							SM	Gray silty fine sand (medium dense, wet)		

WELL CONSTRUCTION



Notes: See Figure A-1 for explanation of symbols.

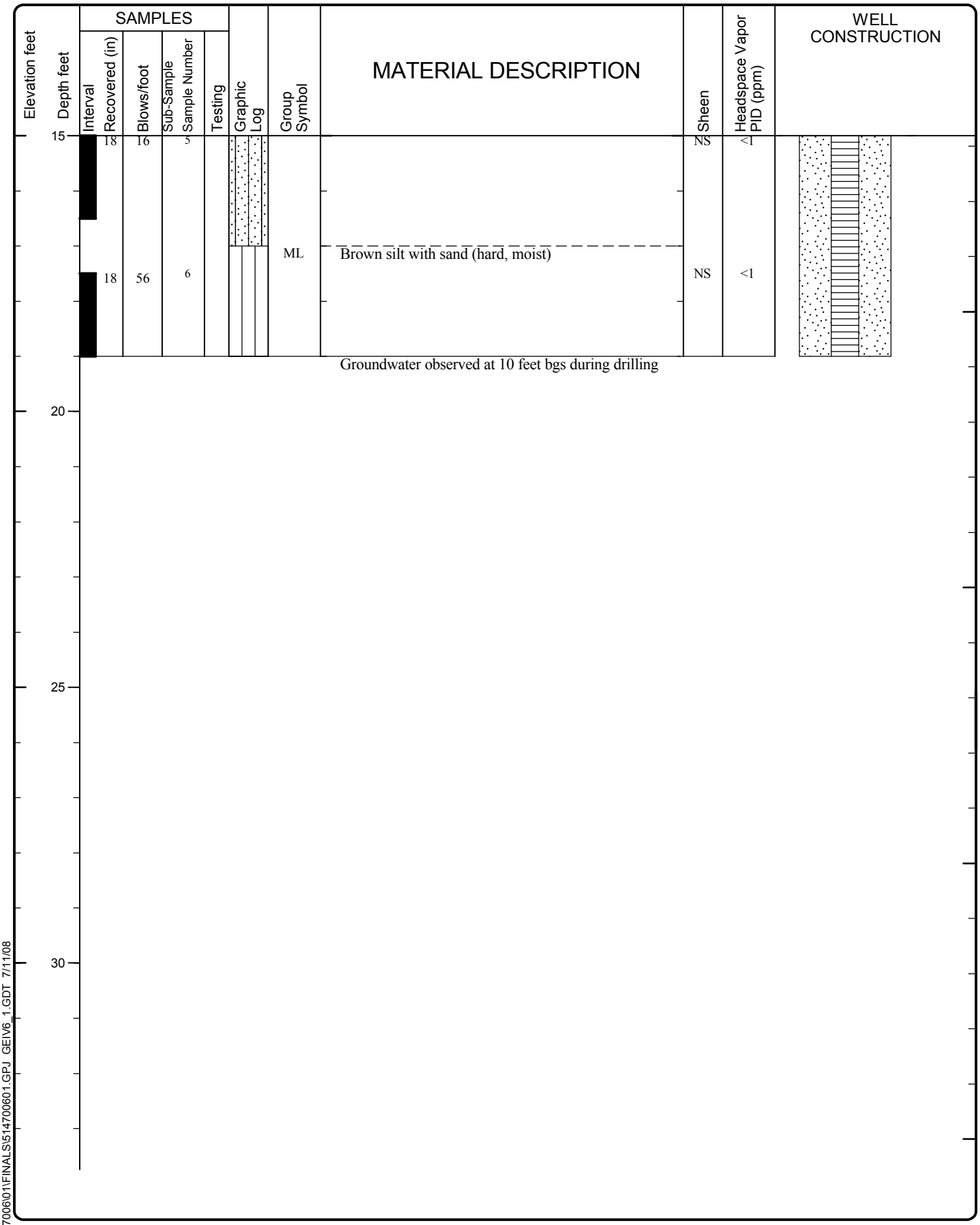
LOG OF MONITORING WELL MW-5

GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-2
Sheet 1 of 2

V6_ENVWELL P:\5\5147006\01FINALS\5147006\01.GPJ GEIV6_1.GDT 7/11/08



V6_ENVWELL P:\5\5147006\01\FINALS\5147006O1.GPJ GEIV6_1.GDT 7/11/08

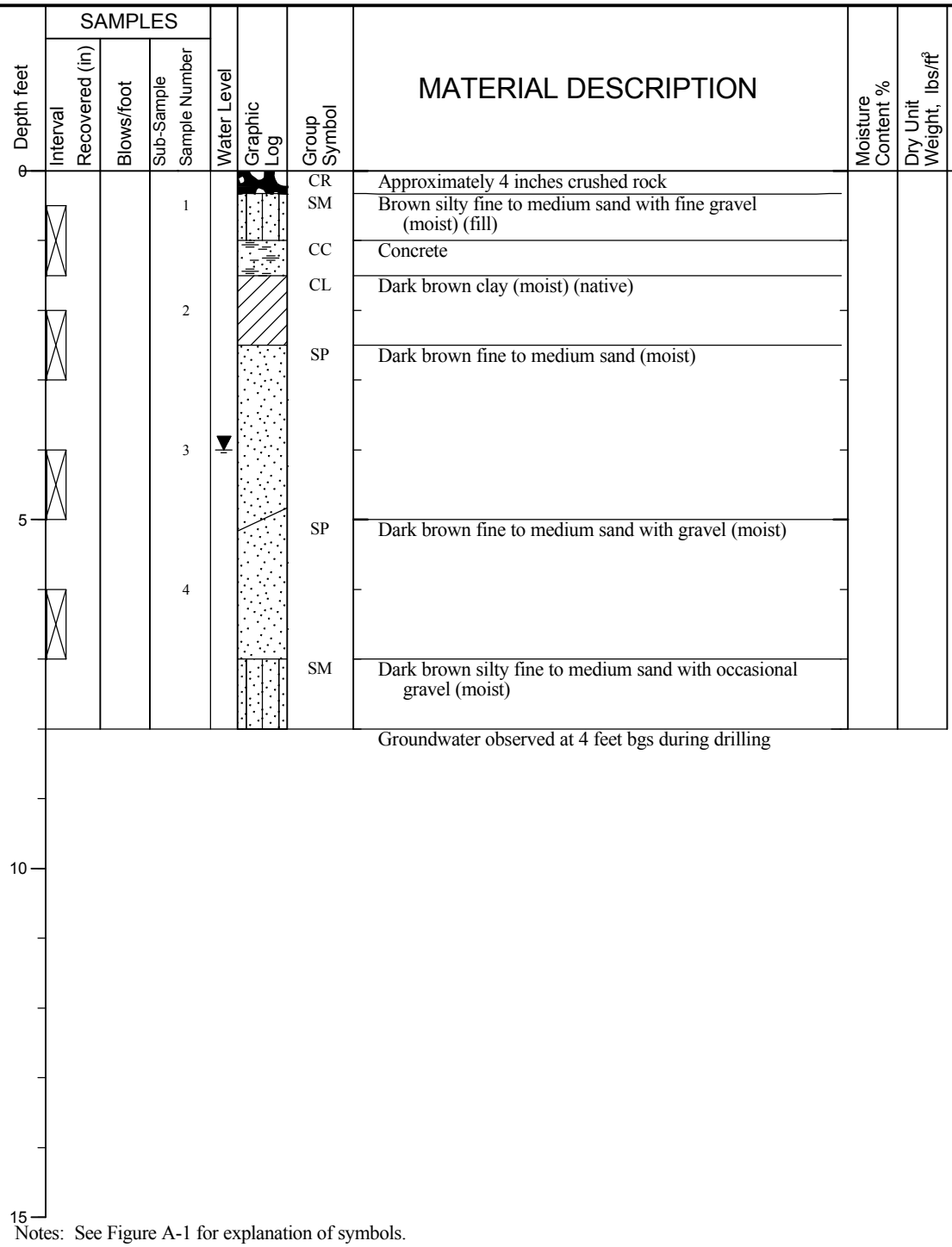
LOG OF MONITORING WELL MW-5 (continued)

GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-3
Sheet 2 of 2

Date(s) Drilled	6/16/08	Logged By	RST	Checked By	
Drilling Contractor	Cascade Drilling	Drilling Method	Direct-Push	Sampling Methods	Sleeved sample
Auger Data		Hammer Data	Pneumatic	Drilling Equipment	Geoprobe
Total Depth (ft)	8	Surface Elevation (ft)		Groundwater Level (ft. bgs)	4
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Notes: See Figure A-1 for explanation of symbols.

LOG OF BORING SB-1

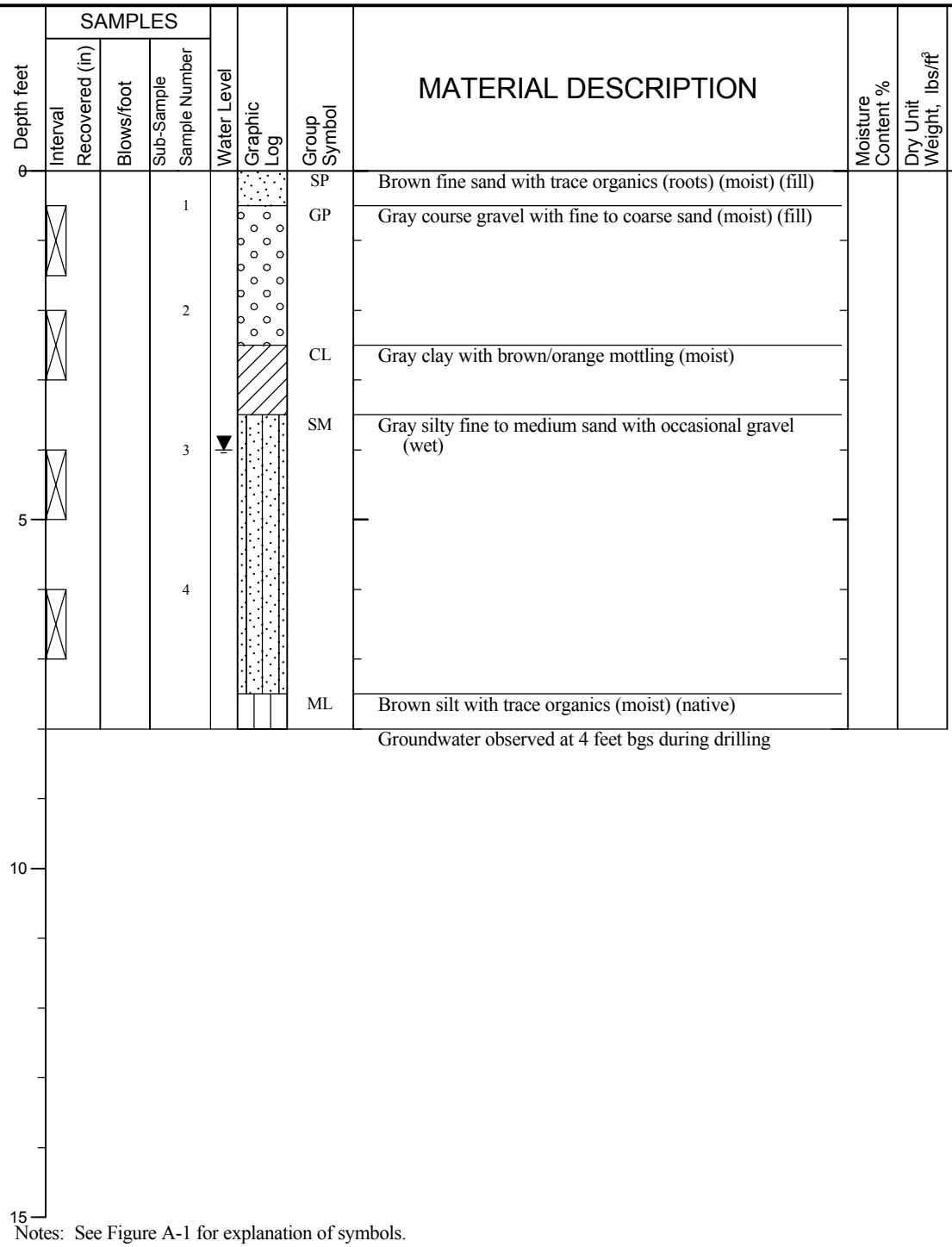
GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-4
Sheet 1 of 1

V6_GTBORING P:\5\5147006\01\FINALS\5147006\01.GPJ GEIV6_1.GDT 7/22/08

Date(s) Drilled	6/16/08	Logged By	RST	Checked By	
Drilling Contractor	Cascade Drilling	Drilling Method	Direct-Push	Sampling Methods	Sleeved sample
Auger Data		Hammer Data	Pneumatic	Drilling Equipment	Geoprobe
Total Depth (ft)	8	Surface Elevation (ft)		Groundwater Level (ft. bgs)	4
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Notes: See Figure A-1 for explanation of symbols.

LOG OF BORING SB-2

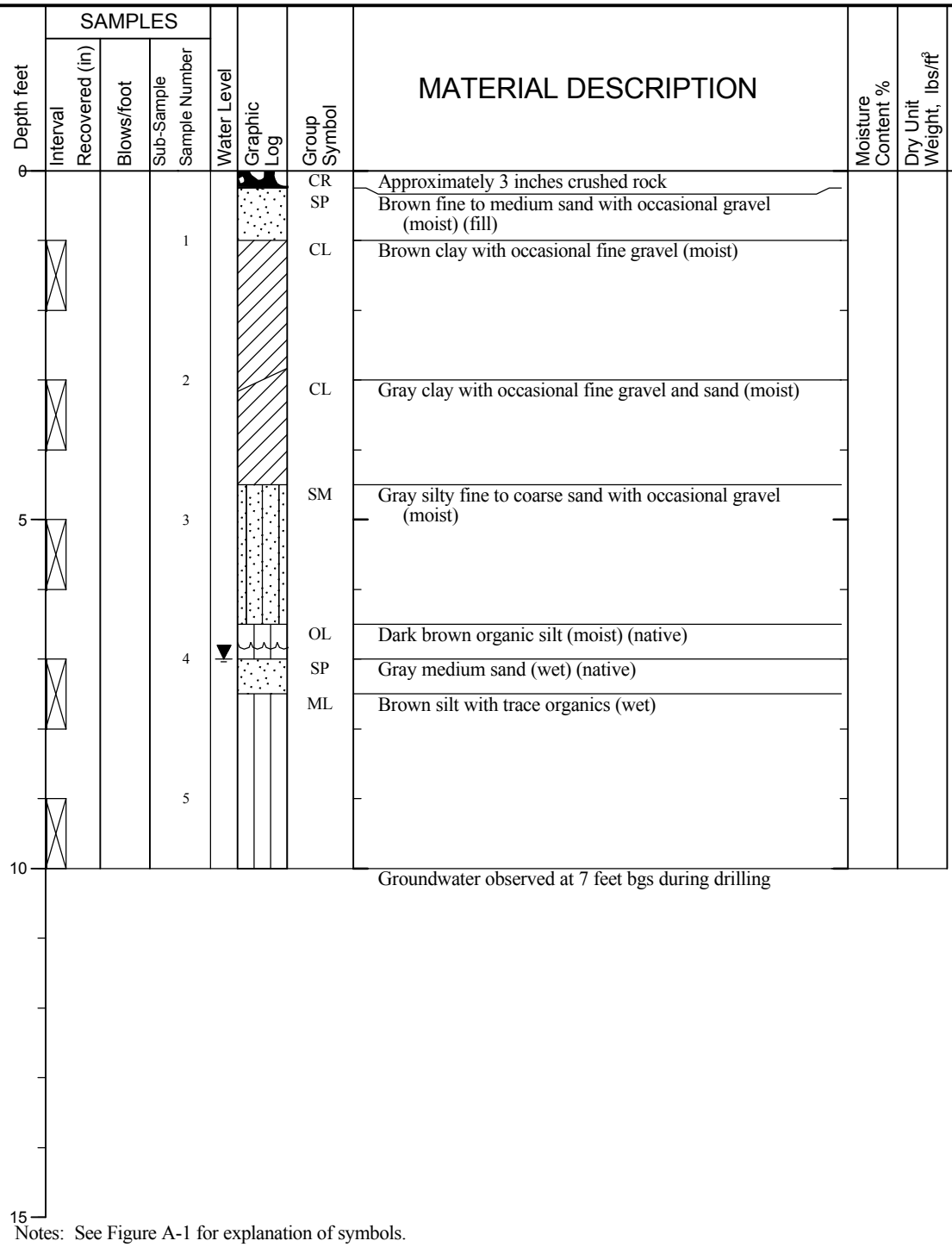
GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-5
Sheet 1 of 1

V6_GTBORING P:\5\5147006\01\FINALS\5147006\01.GPJ GEIV6_1.GDT 7/22/08

Date(s) Drilled	6/16/08	Logged By	RST	Checked By	
Drilling Contractor	Cascade Drilling	Drilling Method	Direct-Push	Sampling Methods	Sleeved sample
Auger Data		Hammer Data	Pneumatic	Drilling Equipment	Geoprobe
Total Depth (ft)	10	Surface Elevation (ft)		Groundwater Level (ft. bgs)	7
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Notes: See Figure A-1 for explanation of symbols.

LOG OF BORING SB-3

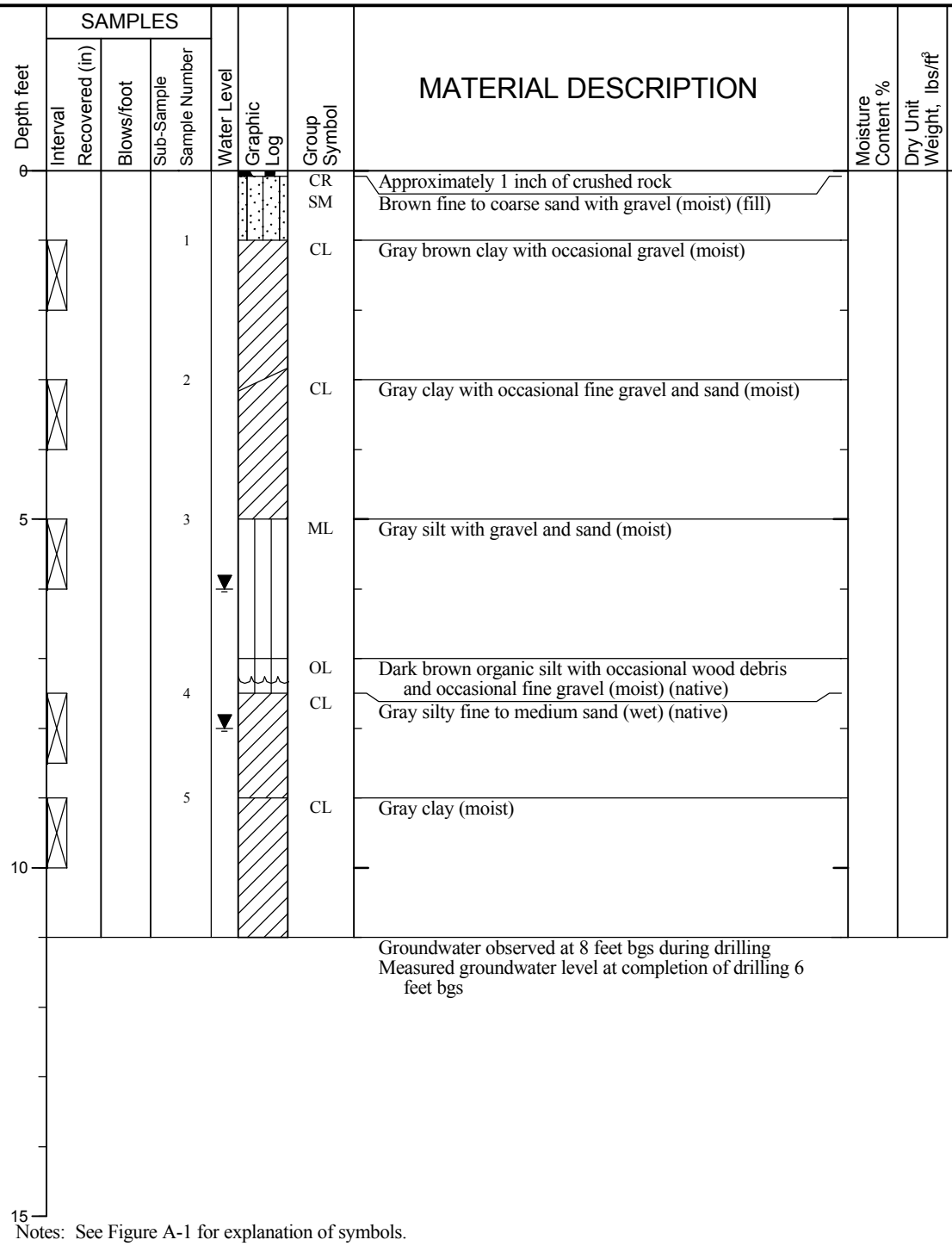
GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-6
Sheet 1 of 1

V6_GTBORING P:\5\5147006\01\FINALS\5147006\01.GPJ GEIV6_1.GDT 7/22/08

Date(s) Drilled	6/16/08	Logged By	RST	Checked By	
Drilling Contractor	Cascade Drilling	Drilling Method	Direct-Push	Sampling Methods	Sleeved sample
Auger Data		Hammer Data	Pneumatic	Drilling Equipment	Geoprobe
Total Depth (ft)	11	Surface Elevation (ft)		Groundwater Level (ft. bgs)	6
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Notes: See Figure A-1 for explanation of symbols.

LOG OF BORING SB-4

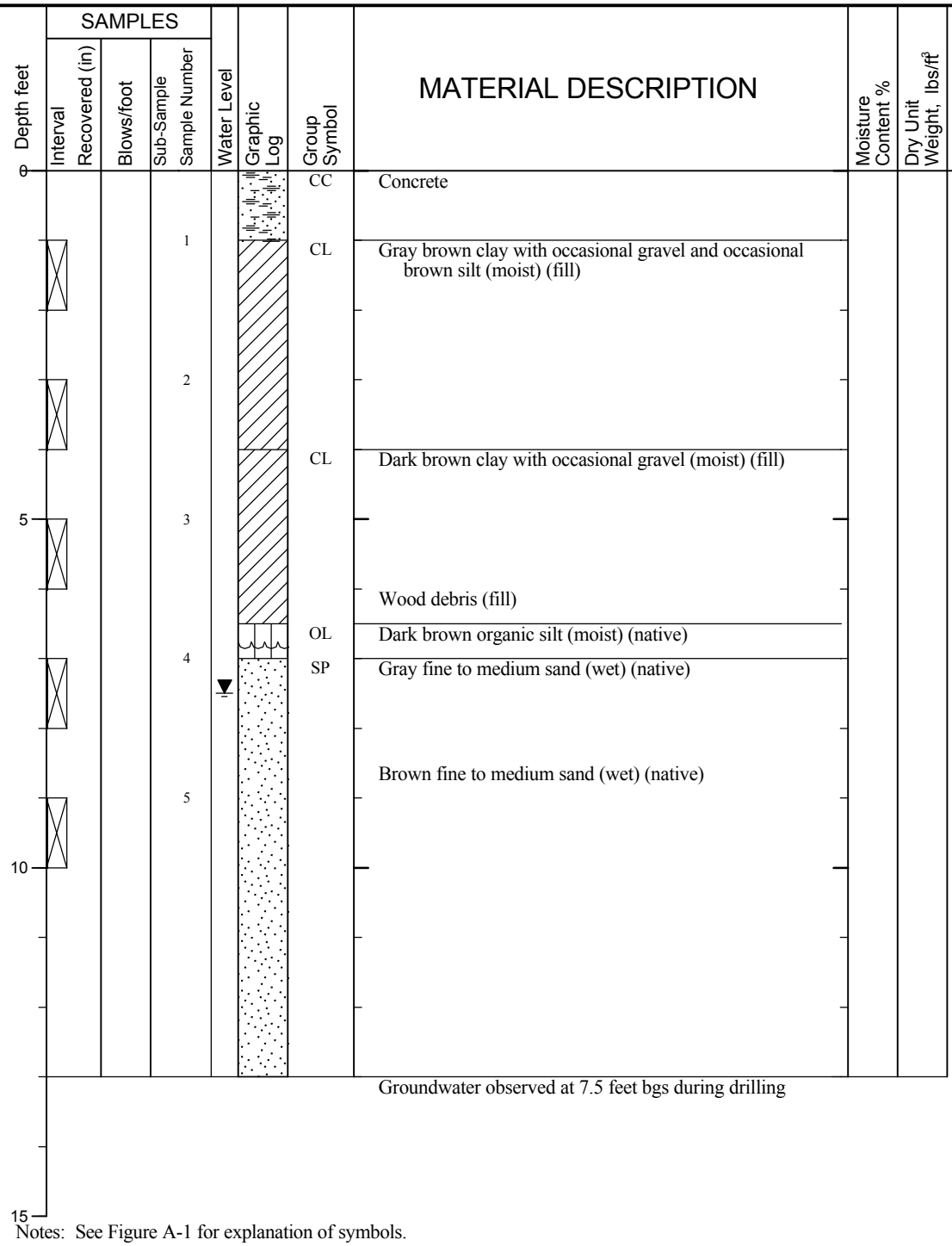
GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-7
Sheet 1 of 1

V6_GTBORING P:\5\5147006\01\FINALS\5147006\01.GPJ GEIV6_1.GDT 7/22/08

Date(s) Drilled	6/16/08	Logged By	RST	Checked By	
Drilling Contractor	Cascade Drilling	Drilling Method	Direct-Push	Sampling Methods	Sleeved sample
Auger Data		Hammer Data	Pneumatic	Drilling Equipment	Geoprobe
Total Depth (ft)	13	Surface Elevation (ft)		Groundwater Level (ft. bgs)	7.5
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Notes: See Figure A-1 for explanation of symbols.

LOG OF BORING SB-5

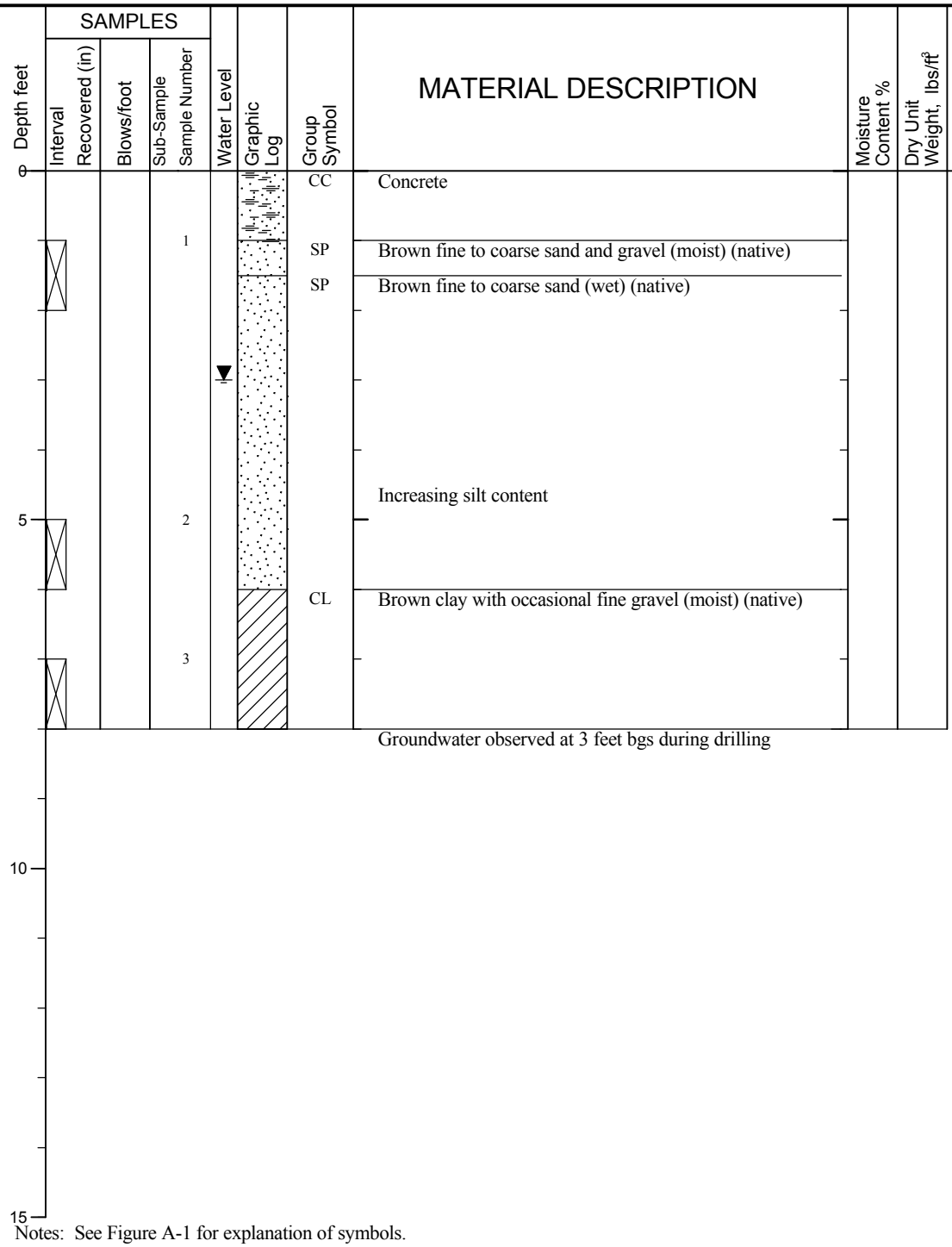
GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-8
Sheet 1 of 1

V6_GTBORING P:\5\5147006\01\FINALS\5147006\01.GPJ GEIV6_1.GDT 7/22/08

Date(s) Drilled	6/16/08	Logged By	RST	Checked By	
Drilling Contractor	Cascade Drilling	Drilling Method	Direct-Push	Sampling Methods	Sleeved sample
Auger Data		Hammer Data	Pneumatic	Drilling Equipment	Geoprobe
Total Depth (ft)	8	Surface Elevation (ft)		Groundwater Level (ft. bgs)	3
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Notes: See Figure A-1 for explanation of symbols.

LOG OF BORING SB-6

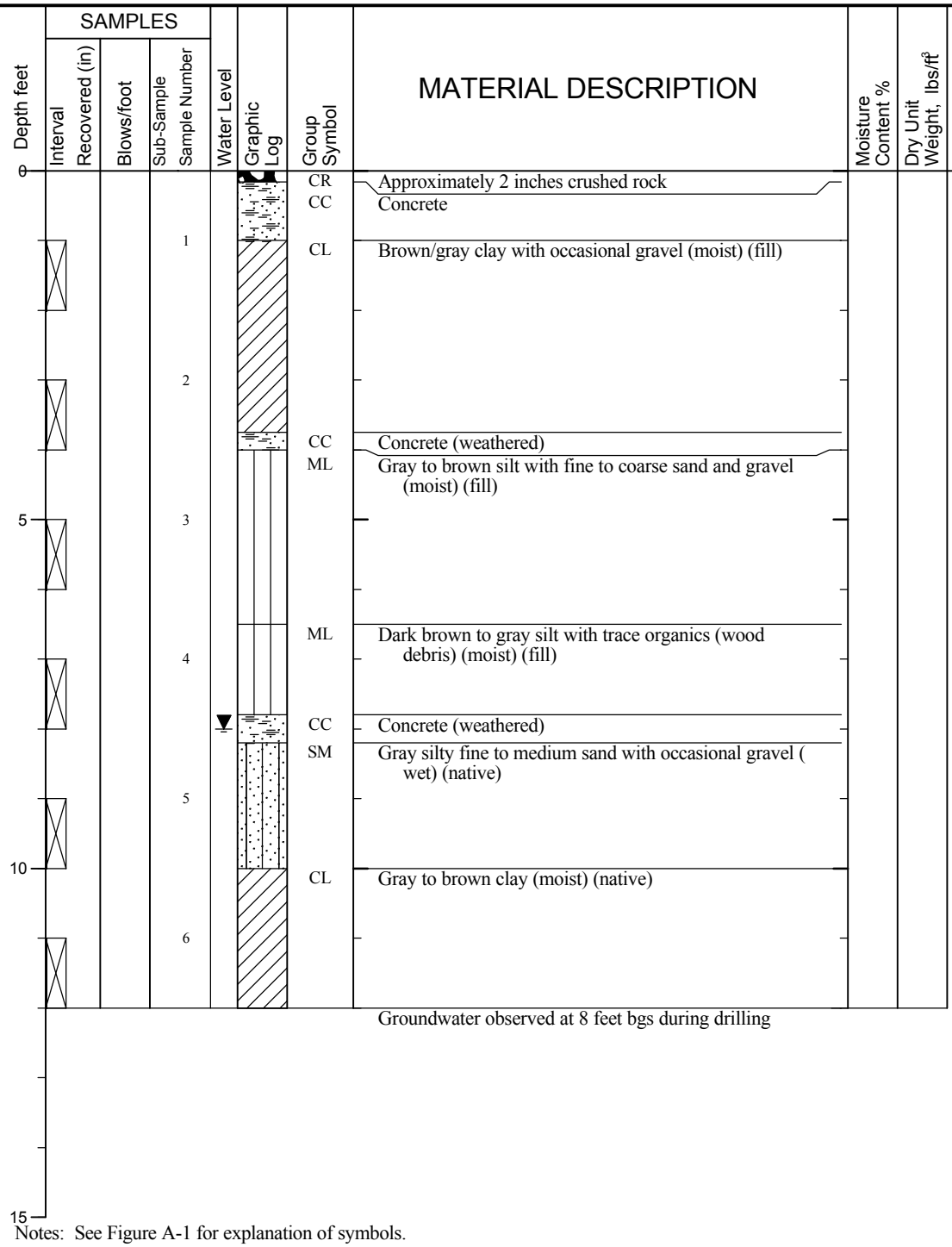
GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-9
Sheet 1 of 1

V6_GTBORING P:\5\5147006\01\FINALS\5147006\01.GPJ GEIV6_1.GDT 7/22/08

Date(s) Drilled	6/16/08	Logged By	RST	Checked By	
Drilling Contractor	Cascade Drilling	Drilling Method	Direct-Push	Sampling Methods	Sleeved sample
Auger Data		Hammer Data	Pneumatic	Drilling Equipment	Geoprobe
Total Depth (ft)	12	Surface Elevation (ft)		Groundwater Level (ft. bgs)	8
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Notes: See Figure A-1 for explanation of symbols.

LOG OF BORING SB-7

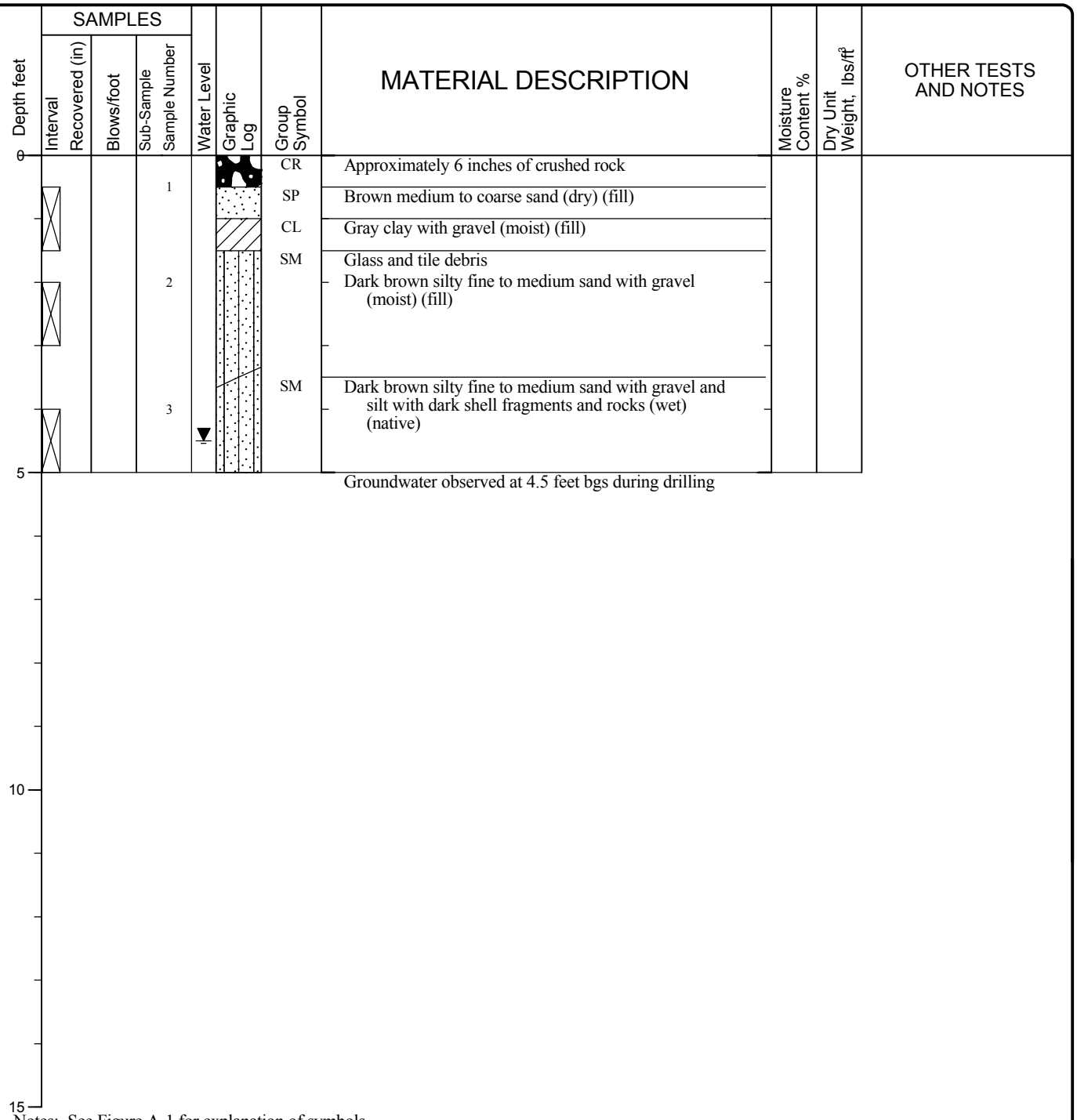
GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-10
Sheet 1 of 1

V6_GTBORING P:\5\5147006\01\FINALS\5147006\01.GPJ GEIV6_1.GDT 7/22/08

Date(s) Drilled	6/17/08	Logged By	RST	Checked By	
Drilling Contractor	Cascade Drilling	Drilling Method	Hand Auger	Sampling Methods	Grab
Auger Data	3-inch ID	Hammer Data		Drilling Equipment	
Total Depth (ft)	5	Surface Elevation (ft)		Groundwater Level (ft. bgs)	4.5
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Notes: See Figure A-1 for explanation of symbols.

LOG OF BORING SB-8

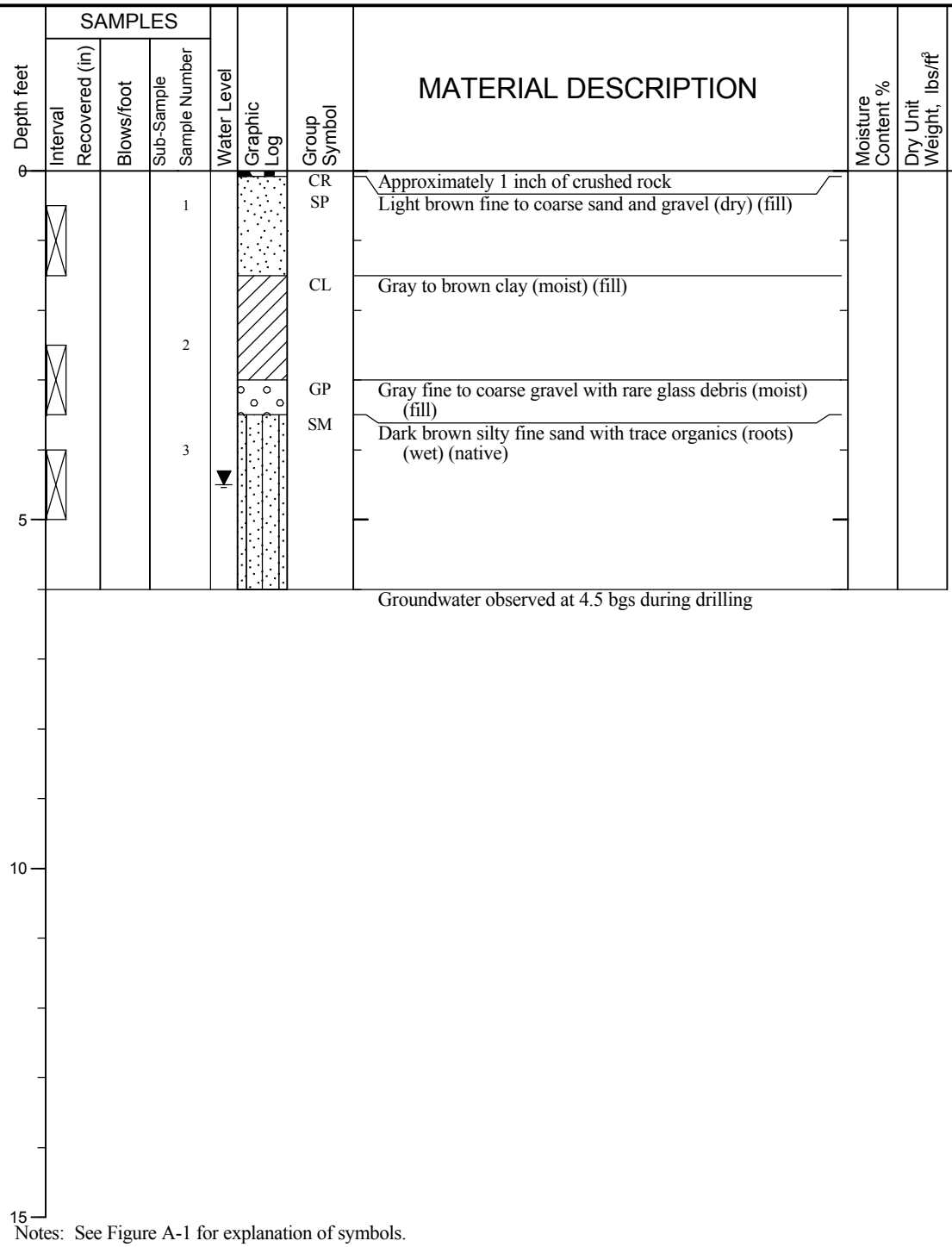
GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-11
Sheet 1 of 1

V6_GTBORING P:\5\5147006\01\FINALS\5147006\01.GPJ GEIV6_1.GDT 7/22/08

Date(s) Drilled	6/16/08	Logged By	RST	Checked By	
Drilling Contractor	Cascade Drilling	Drilling Method	Direct-Push	Sampling Methods	Sleeved sample
Auger Data		Hammer Data	Pneumatic	Drilling Equipment	Geoprobe
Total Depth (ft)	6	Surface Elevation (ft)		Groundwater Level (ft. bgs)	4.5
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Notes: See Figure A-1 for explanation of symbols.

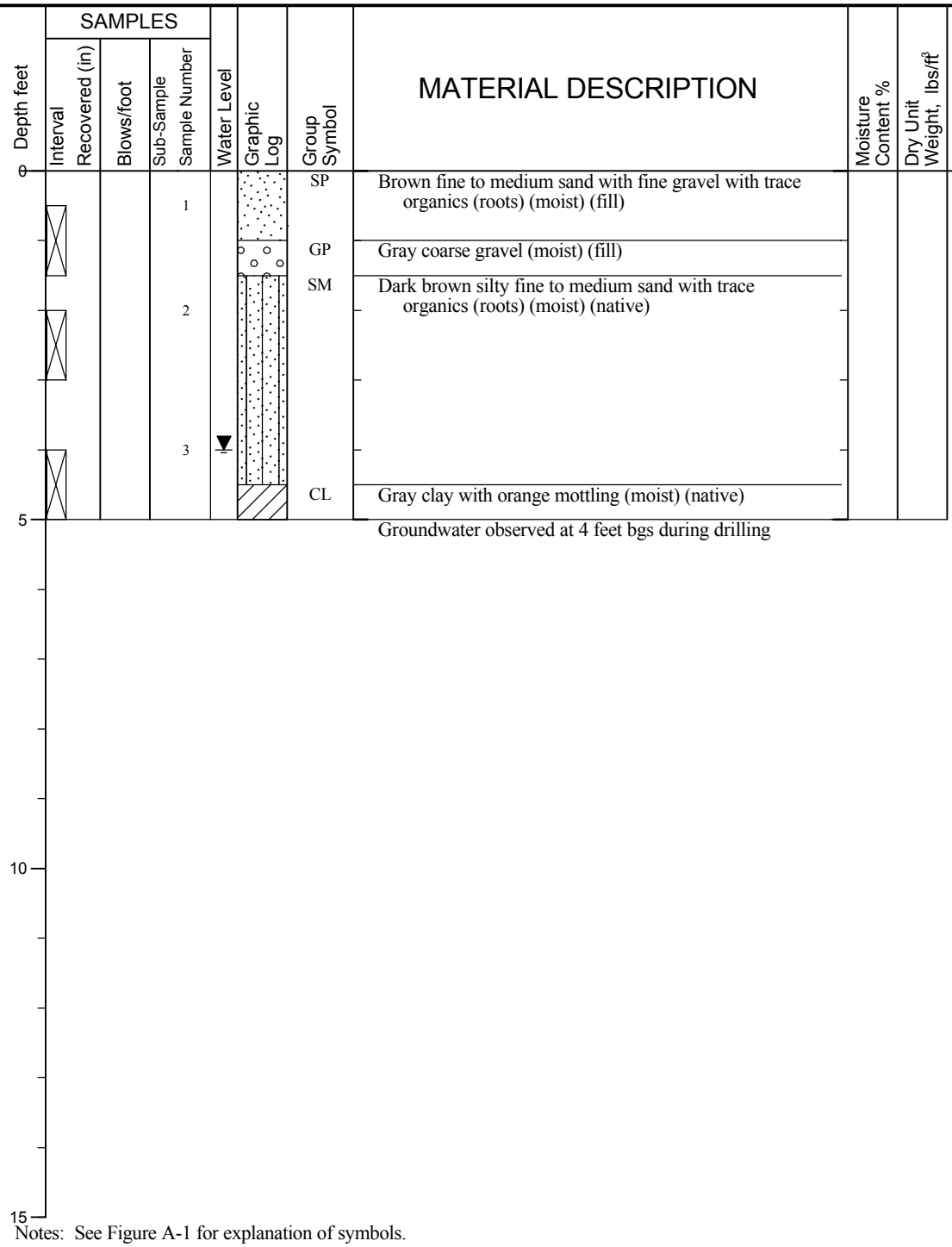
LOG OF BORING SB-9

GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-12
Sheet 1 of 1

Date(s) Drilled	6/17/08	Logged By	RST	Checked By	
Drilling Contractor	Cascade Drilling	Drilling Method	Hand Auger	Sampling Methods	Grab
Auger Data	3-inch ID	Hammer Data		Drilling Equipment	
Total Depth (ft)	5	Surface Elevation (ft)		Groundwater Level (ft. bgs)	4
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Notes: See Figure A-1 for explanation of symbols.

LOG OF BORING SB-10

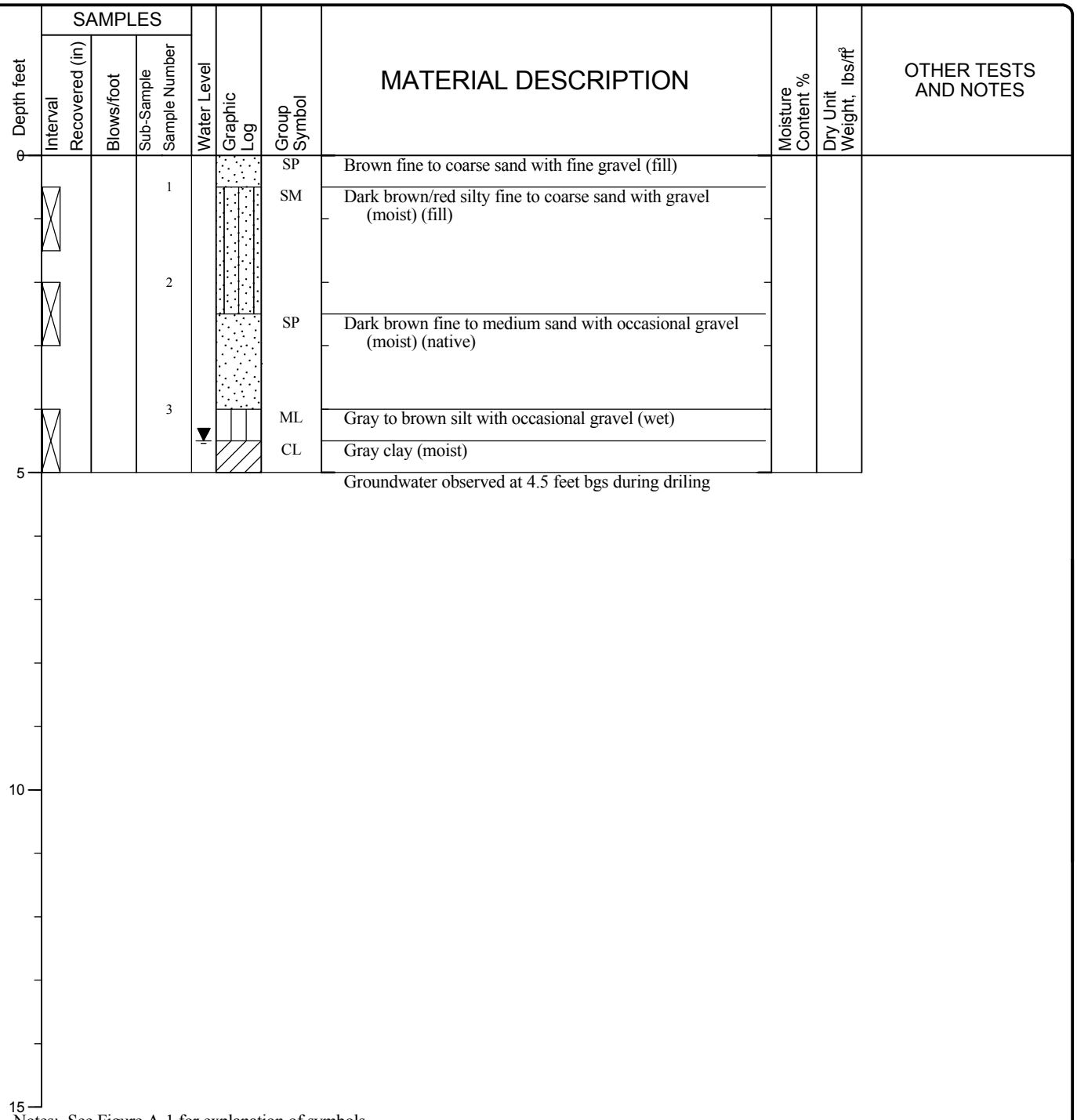
GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-13
Sheet 1 of 1

V6_GTBORING P:\5\5147006\01\FINALS\5147006\01.GPJ GEIV6_1.GDT 7/22/08

Date(s) Drilled	6/17/08	Logged By	RST	Checked By	
Drilling Contractor	Cascade Drilling	Drilling Method	Hand Auger	Sampling Methods	Grab
Auger Data	3-inch ID	Hammer Data		Drilling Equipment	
Total Depth (ft)	5	Surface Elevation (ft)		Groundwater Level (ft. bgs)	4.5
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Notes: See Figure A-1 for explanation of symbols.

LOG OF BORING SB-11

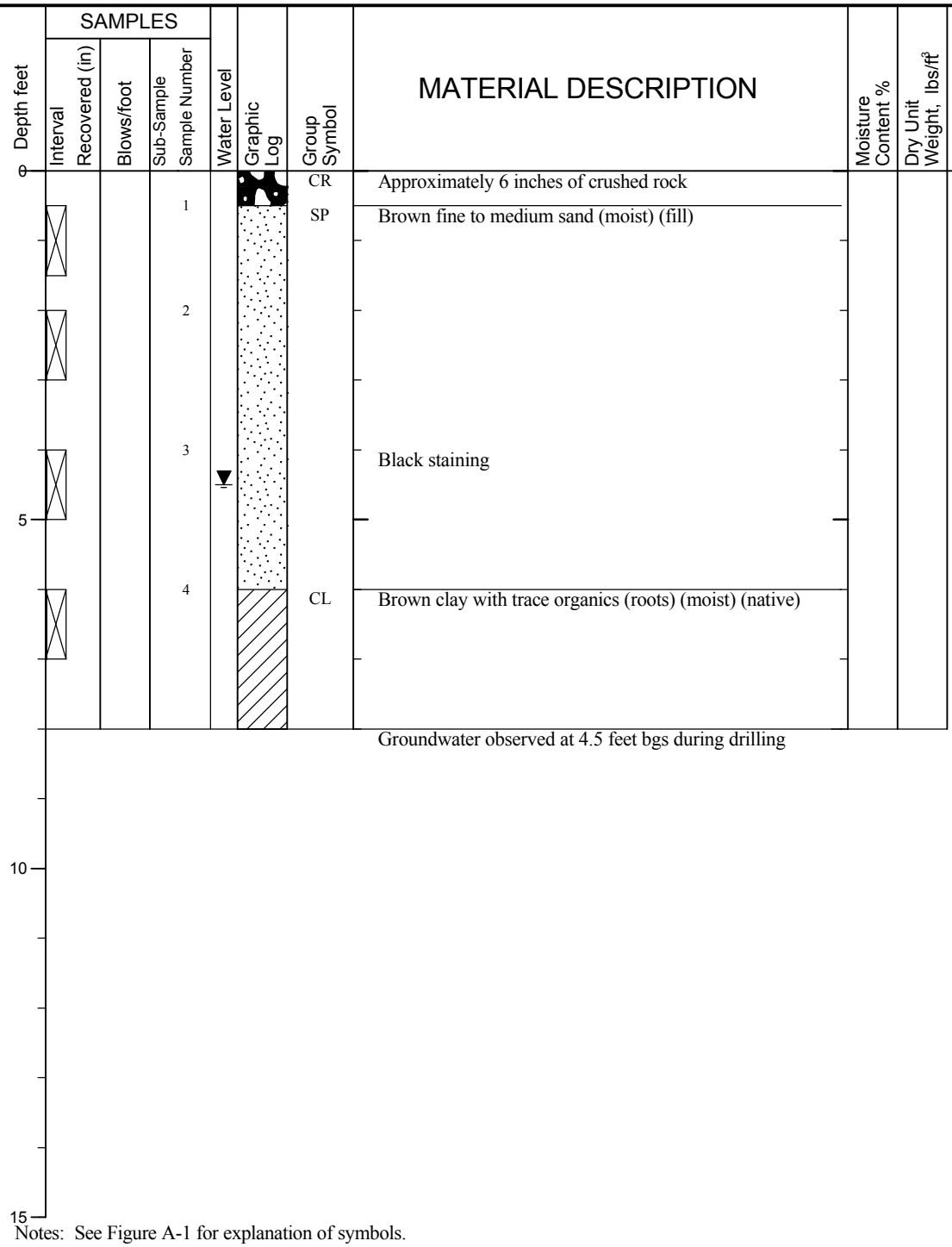
GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-14
Sheet 1 of 1

V6_GTBORING P:\5\5147006\01\FINALS\5147006\01.GPJ GEIV6_1.GDT 7/22/08

Date(s) Drilled	6/16/08	Logged By	RST	Checked By	
Drilling Contractor	Cascade Drilling	Drilling Method	Direct-Push	Sampling Methods	Sleeved sample
Auger Data		Hammer Data	Pneumatic	Drilling Equipment	Geoprobe
Total Depth (ft)	8	Surface Elevation (ft)		Groundwater Level (ft. bgs)	4.5
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Notes: See Figure A-1 for explanation of symbols.

LOG OF BORING SB-12

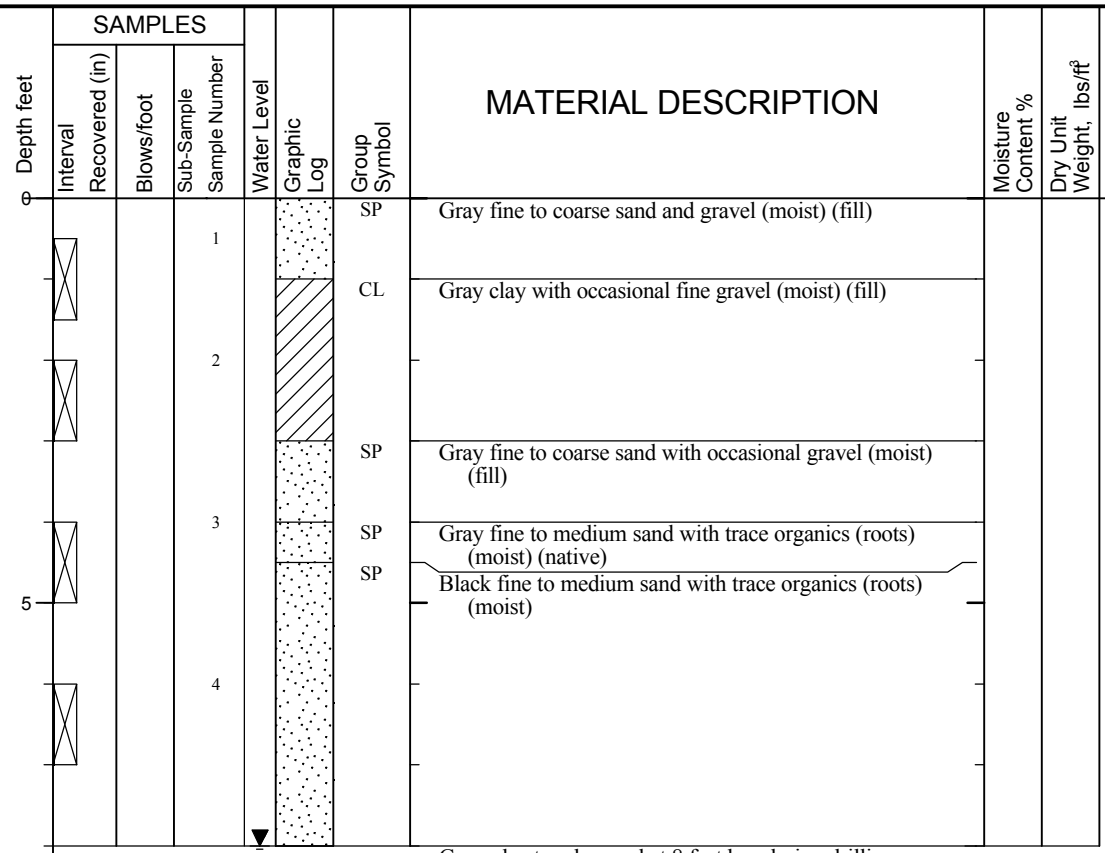
GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-15
Sheet 1 of 1

V6_GTBORING P:\5\5147006\01\FINALS\5147006\01.GPJ GEIV6_1.GDT 7/22/08

Date(s) Drilled	6/16/08	Logged By	RST	Checked By	
Drilling Contractor	Cascade Drilling	Drilling Method	Direct-Push	Sampling Methods	Sleeved sample
Auger Data		Hammer Data	Pneumatic	Drilling Equipment	Geoprobe
Total Depth (ft)	8	Surface Elevation (ft)		Groundwater Level (ft. bgs)	8
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Notes: See Figure A-1 for explanation of symbols.

LOG OF BORING SB-13

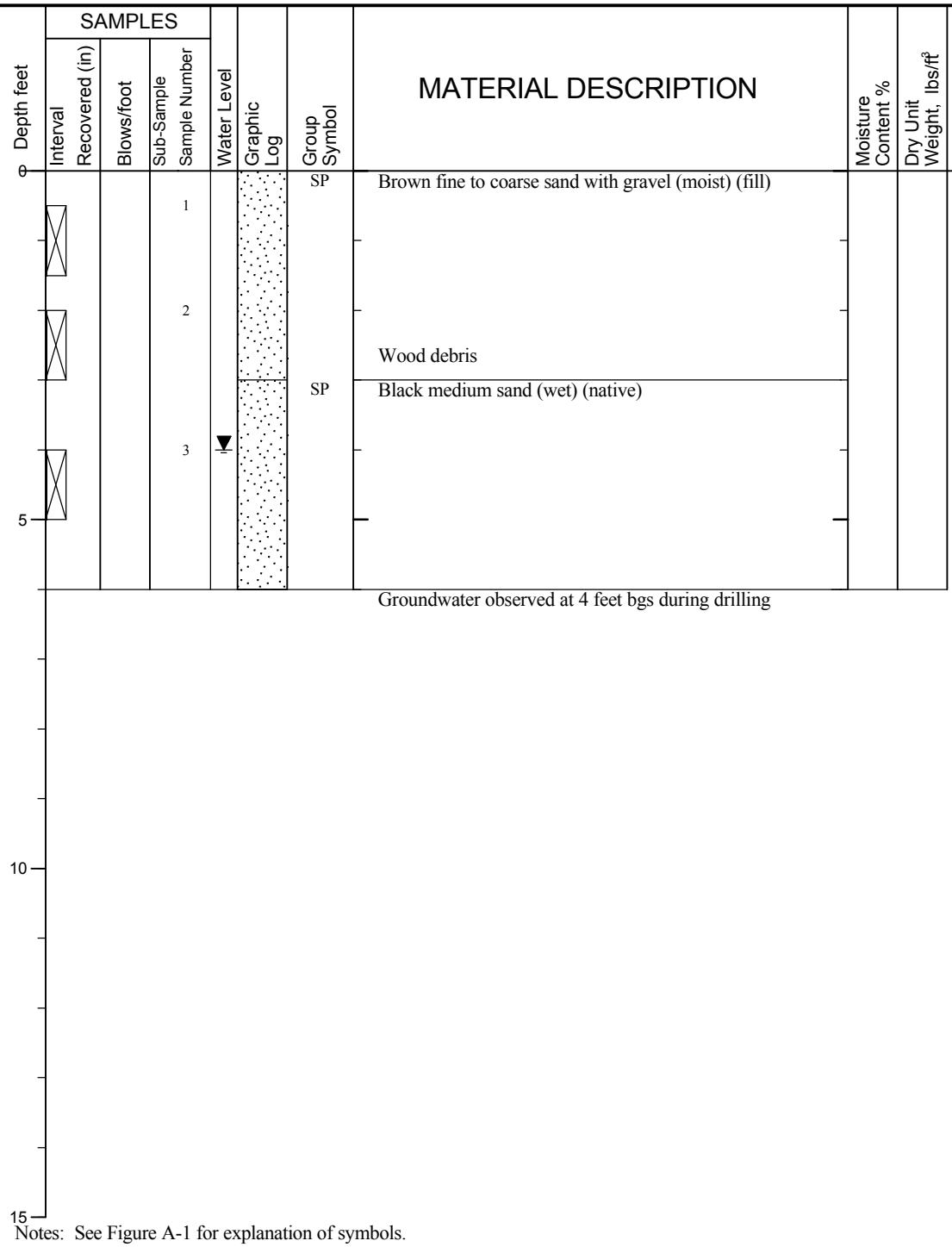
GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-16
Sheet 1 of 1

V6_GTBORING P:\5\5147006\01\FINALS\5147006\01.GPJ GEIV6_1.GDT 7/22/08

Date(s) Drilled	6/16/08	Logged By	RST	Checked By	
Drilling Contractor	Cascade Drilling	Drilling Method	Direct-Push	Sampling Methods	Sleeved sample
Auger Data		Hammer Data	Pneumatic	Drilling Equipment	Geoprobe
Total Depth (ft)	6	Surface Elevation (ft)		Groundwater Level (ft. bgs)	4
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Notes: See Figure A-1 for explanation of symbols.

LOG OF BORING SB-14

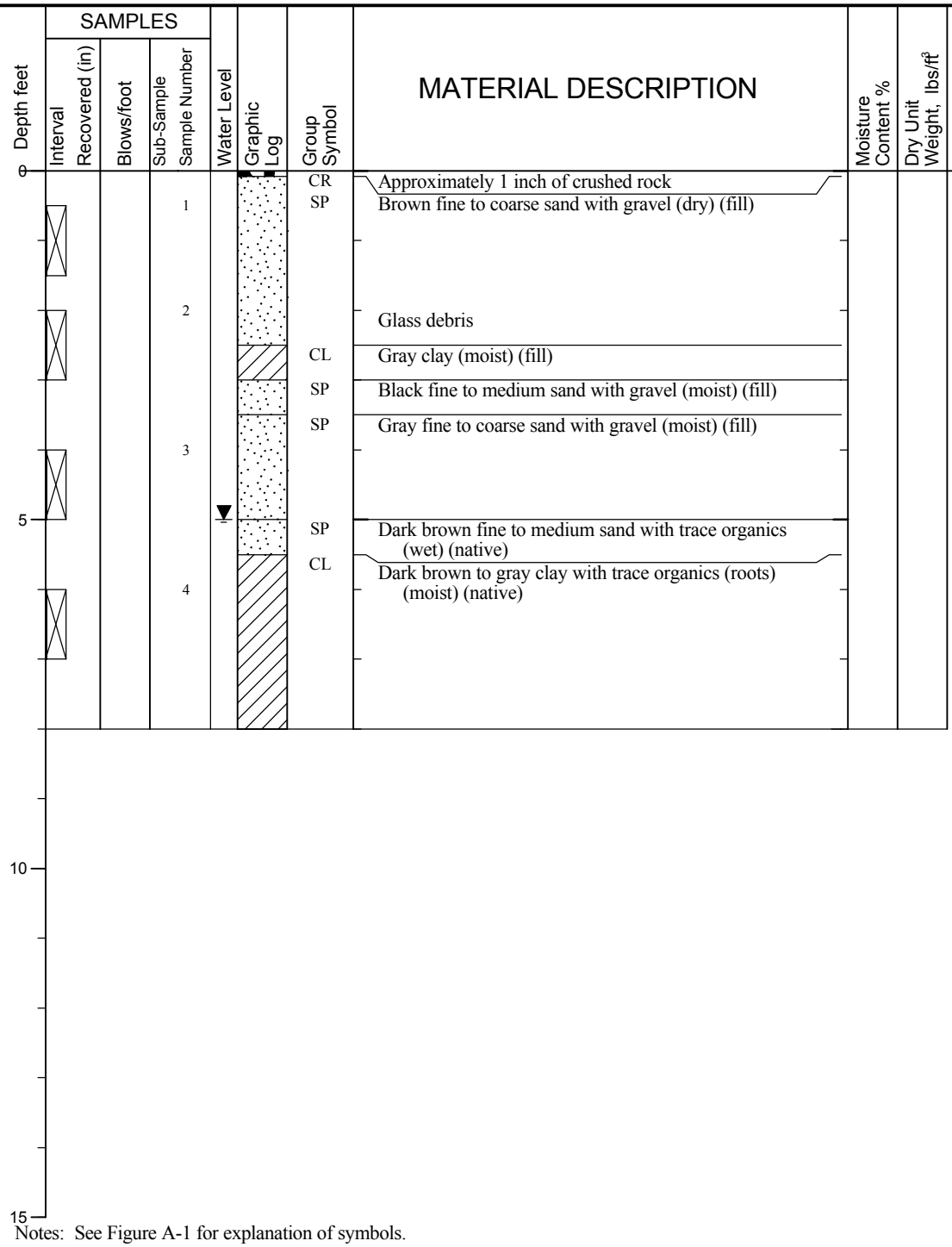
GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-17
Sheet 1 of 1

V6_GTBORING P:\5\5147006\01\FINALS\5147006\01.GPJ GEIV6_1.GDT 7/22/08

Date(s) Drilled	6/16/08	Logged By	RST	Checked By	
Drilling Contractor	Cascade Drilling	Drilling Method	Direct-Push	Sampling Methods	Sleeved sample
Auger Data		Hammer Data	Pneumatic	Drilling Equipment	Geoprobe
Total Depth (ft)	8	Surface Elevation (ft)		Groundwater Level (ft. bgs)	5
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Notes: See Figure A-1 for explanation of symbols.

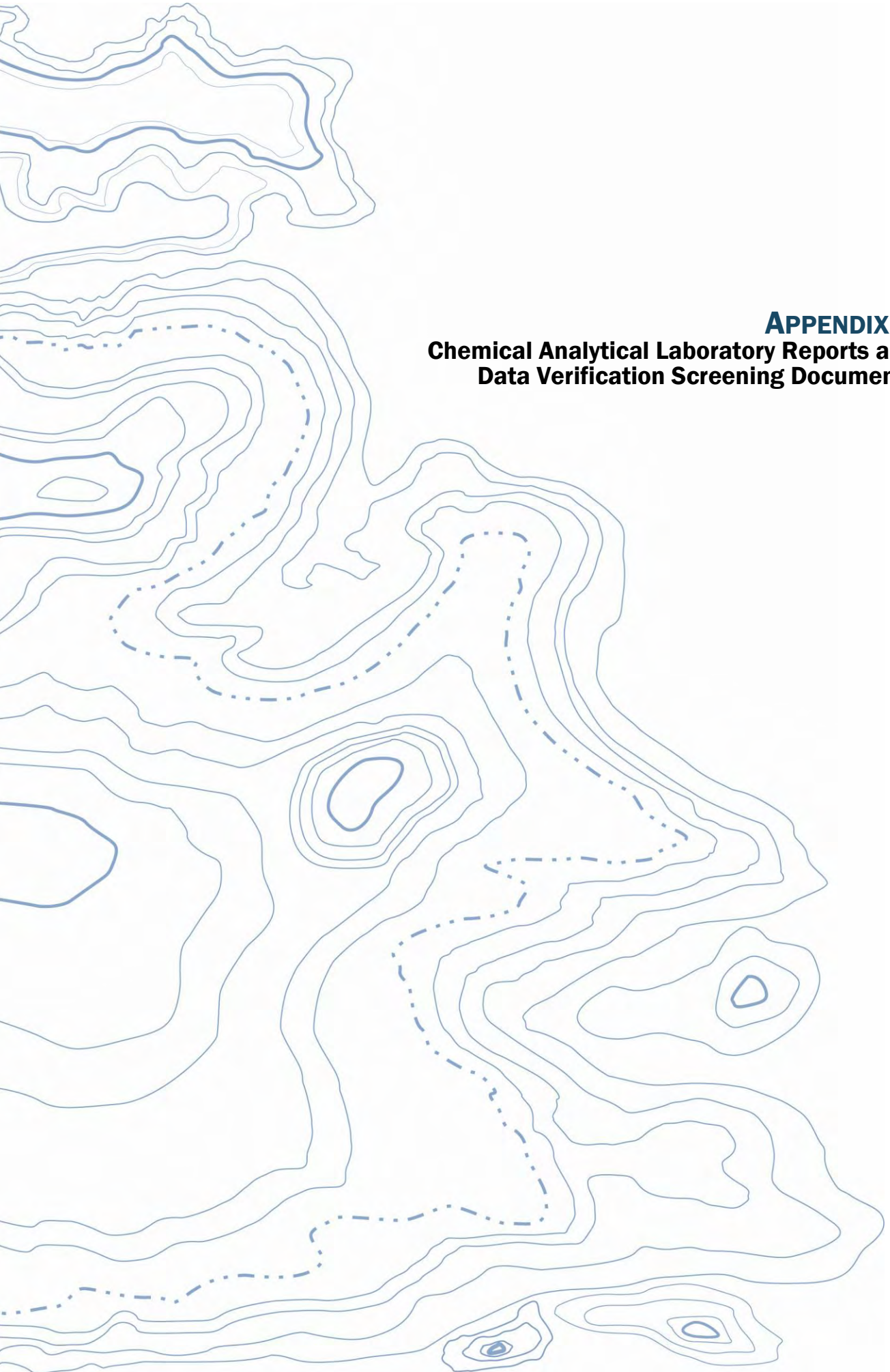
LOG OF BORING SB-15

GeoEngineers

Project: Port of Anacortes - Dakota Creek Industries
Project Location: Anacortes, Washington
Project Number: 5147-006-01

FIGURE A-18
Sheet 1 of 1

V6_GTBORING P:\5\5147006\01\FINALS\5147006\01.GPJ GEIV6_1.GDT 7/22/08



APPENDIX B
Chemical Analytical Laboratory Reports and Data Verification Screening Documents

APPENDIX B
CHEMICAL ANALYTICAL LABORATORY REPORTS AND DATA VERIFICATION SCREENING DOCUMENTS

Chemical Analytical Data Submitted Separately on CD (attached).

GeoEngineers

1101 Fawcett Avenue, Suite 200, Tacoma, WA 98402, Telephone: (253) 383-4940, Fax: (253) 383-4923 www.geoengineers.com

MEMORANDUM

TO: Bob Elsner, Port of Anacortes

FROM: Tonya Kauhi

DATE: December 11, 2008

FILE: 5147-006-05

SUBJECT: Port of Anacortes, Dakota Creek Site - Data Quality Assessment Summary

This memorandum presents a summary of the analytical data quality review for the Port of Anacortes, Dakota Creek Site located in Anacortes, Washington. This review addresses samples collected in March and June, 2008 by GeoEngineers, Inc. (GEI). The samples were submitted to Analytical Resources, Inc. in Tukwila, Washington, CCI Analytical Laboratories in Everett, Washington and Pace Analytical in Minneapolis, Minnesota (dioxins/furans)for chemical analysis. Thirty-six (36) soil samples, eight (8) water samples and twenty-six (26) sediment samples were analyzed by one or more of the following analytical methods:

- Total Solids by EPA 160.3
- Total Organic Carbon by PSEP TOC
- Mercury by EPA 1631E
- Total metals by EPA 6020
- Polychlorinated Biphenyls by EPA 8082
- Semi-volatile Organic Compounds by EPA 8270C
- Polyaromatic hydrocarbons by SW 8270 SIM
- Dioxin/Furans by EPA 8290

PURPOSE AND OBJECTIVES

The objective of this data quality assessment is to review laboratory analytical procedures and quality control results to verify or refute the usability of data with respect to meeting project data quality objectives (DQOs). DQOs define the methods to be used in soil characterization and were developed to ensure the following:

- Samples are analyzed using well defined and acceptable methods that will provide detection limits sufficiently below established clean up criteria.
- The precision and accuracy of data are well defined and adequate to provide defensible data.
- Samples are collected using approved techniques and are representative of existing conditions.
- Quality Assurance/Quality Control (QA/QC) procedures for both field and laboratory methods meet acceptable industry practices and standards.

DATA EVALUATION CRITERIA

The following QC elements were reviewed, as applicable:

- Chain of custody documentation

- Holding times and Preservation
- Duplicates
- Method Blanks
- Laboratory matrix spike/matrix spike duplicate and/or matrix duplicate results
- Laboratory surrogate recoveries
- Laboratory check samples

DATA QUALITY ASSESSMENT SUMMARY

The data quality issues are summarized below. Data review was performed using guidance from *the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (USEPA, 2002) and *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (USEPA, 1999).

Holding Times and Preservation:

All samples were analyzed within appropriate holding times.

Cooler temperatures were recorded between 13.2 and 15.8C, higher then recommended levels in sample delivery group (SDG) NC92. Guidance suggest when temperature exceeds the acceptable range to reject (R flag) the non-detect samples and flag the detected samples as estimated, biased low (J- flag). However, using professional judgment the temperature exceedance does not appear to affect data usability.

Cooler temperature was recorded as 1.6 ºC in SDG K0808184. The temperature was below the recommended limits, however, would not affect data quality.

Method Blanks:

Arsenic was detected in the method blank (KWG08184-MB). Guidance states that if a blank analyte is detected, then any associated sample results for the analyte that are 5 times or less the values of the blank result are re-qualified as not detected and estimated (UJ flag). Arsenic was detected at less than 5 times the blank result in sample SMA5-3 and therefore, was qualified as not detected and estimated (UJ flag). It is possible these results are detects, however, due to the blank contamination there is less reliability in the value.

Arsenic was detected greater than 5 times the blank result in sample SMA5-2 and therefore, was qualified as estimated biased high (J+ flag).

Several dioxin/furan congeners were detected in method blank samples (BLANK-16804 and BLANK-16790). Guidance states that if a blank analyte is detected, then any associated sample results for the analyte that are 5 times or less the values of the blank result are re-qualified as not detected and estimated (UJ flag). It is possible these results are detects, however, due to the blank contamination there is less reliability in the value. See Table 1 Summary Qualification for details.

Several dioxin/furan congeners were detected in the method blank samples (BLANK-16804 and BLANK-16790). The results were greater than 5 times the blank result; therefore, the results were qualified as estimated biased high (J+ flag). See Table 1 Summary Qualification for details.

Surrogate Recoveries:

Surrogates are only evaluated on organic analyses. No surrogate recoveries exceedances were reported.

Matrix Spikes (MS)/Matrix Spike Duplicates (MSD):

Several MS/MSD spike exceedences were reported. Typically, sample results are not qualified based on matrix spike values alone but rather are evaluated in conjunction with other QC criteria. The associated Lab control spike (LCS) was within control limits and therefore no corrective action was taken.

Laboratory Control Spikes (LCS):

The recovery for 2,4-Dimethylphenol was less than the recovery limits (10% to 81%) in samples KWG08080956-3 and KWG0808956-4 (7% and 6%, respectively). 2,4-Dimethylphenol is an analyte that is known to have a poor recovery rate. Guidance suggests if the recovery is less than the lower recovery limit, the associated non-detected target compound should be rejected ("R"). Based on this criteria, we recommend rejecting the non-detected 2,4-Dimethylphenol results in samples SMA5-3 and SMA5-2.

Benzyl alcohol, 2,4-Dimethylphenol and n-Nitrodiphenylamine was detected in batch for samples within SDGs MN24 and MO05. Guidance suggests if the results from a duplicate analysis for an analyte fall outside the control limits, qualify the detected results as estimated (J) and qualify the non-detects as estimated (UJ). Based in these criteria, we recommend qualifying the detected Benzyl alcohol, 2,4-Dimethylphenol and n-Nitrodiphenylamine non-detected results in samples MN24A (G-7(s)), MN24B (G-1(s)), MN24C (G-2(s)) as estimated (UJ flag).

No additional laboratory control spike exceedences were reported.

Laboratory Replicates/Duplicates:

Several laboratory replicate exceedences were reported. Typically, sample results are not qualified based on RPD values alone but rather are evaluated in conjunction with other QC criteria. The associated Lab control spike (LCS) was within control limits and therefore no corrective action was taken.

SUMMARY AND CONCLUSIONS

Overall, the analytical data generated by GeoEngineers, Inc. during the investigation of the Port of Anacortes Dakota Creek Site is useable for intended decision making processes. This data evaluation was performed by GeoEngineers, Inc. using best professional judgment. Data users may review and re-interpret data quality for specific uses.

Attachment: Table 1. Analytical Data Result Qualifications

TABLE 1
ANALYTICAL DATA RESULT QUALIFICATIONS
PORT OF ANACORTES, DAKOTA CREEK SITE

Qualify 2,4-Dimethylphenol for samples SMA5-3 and SMA5-2 as rejected (R) due to recovery exceedance.

Qualify Arsenic for Sample SMA-3 as not detcted and estimated (UJ) and sample SMA-2 as estimated biased high (J+) due to blank contamination.

Qualify the detected Benzyl alcohol, 2,4-Dimethylphenol and n-Nitrodiphenylamine non-detected results in samples MN24A (G-7(s)), MN24B (G-1(s)), MN24C (G-2(s)) as estimated (UJ flag)

Qualify the following samples due to blank contamination or interfering substances:

	Sample Name						
GeoEngineers Sample ID.	**MW-1**	**SB-4-3.0**	**SB-4-9.0**	**SB-5-3.0**	**SB-5-9.0**	**SB-7-3.0**	**SB-7-9.0**
Laboratory Sample ID.	**806108-1L**	**806107-15**	**806107-18**	**806107-20**	**806107-23**	**806107-28**	**806107-30**
Analyte							
2,3,7,8-TCDF		UJ		J+	UJ	UJ	UJ
Total TCDF		J+		J+	UJ	UJ	UJ
1,2,3,7,8-PeCDF		UJ	J	J+	J		J
2,3,4,7,8-PeCDF		J+	J	J+		UJ	J
Total PeCDF		J+	UJ	J+	UJ	UJ	
1,2,3,7,8-PeCDD		UJ		J	UJ	UJ	J
Total PeCDD		J+		J+	UJ	UJ	
1,2,3,4,7,8-HxCDF		UJ	J	J+	J	J	UJ
1,2,3,6,7,8-HxCDF		UJ	J	J+	UJ	J	J
2,3,4,6,7,8-HxCDF		UJ	UJ	J+	UJ	UJ	J
1,2,3,7,8,9-HxCDF		J	J	J+		J	J
Total HxCDF		J+	UJ	J+	UJ	UJ	UJ
1,2,3,4,7,8-HxCDD		UJ	UJ	J+	UJ		UJ
1,2,3,6,7,8-HxCDD		UJ		J+	J		UJ
1,2,3,7,8,9-HxCDD		UJ		J+	UJ		J
Total HxCDD		J+	UJ	J+	UJ	UJ	UJ
1,2,3,4,6,7,8-HpCDF		J+	UJ	J+	UJ	J	UJ
1,2,3,4,7,8,9-HpCDF		J	J	UJ	UJ		UJ
Total HpCDF		UJ	UJ	J+	UJ	UJ	UJ
1,2,3,4,6,7,8-HpCDD	J		UJ	J+	UJ	UJ	UJ
Total HpCDD		J+	J+	J+	UJ	J+	J+
OCDF	J+	J+	J+	J+	UJ	J	UJ
OCDD	J+	J+	J+	J+	UJ	J+	J+

Notes:
See Data Verfication Worksheets for details regarding result qualifications.
Estimated = "J"
Estimated biased high = "J+"
Not Detected and estimated = "UJ"

Screener: Tonya Kauhi
Date: December 3, 2008

DATA QUALITY SCREENING & VERIFICATION WORKSHEET

Project No: 5147-006-05 **SDG: 809103**

Project Name: Port of Anacortes, Dakota Creek Industries

Laboratory: CCI Analytical Laboratories **Methods:** EPA-6010

1.0 Chain-of-Custody

	Y	N	N/A
1.1 Are all Chain-of-Custody (COC) forms included in data package?	X		
1.2 Were COC forms properly signed and dated	X		
1.3 Was sample container temperature recorded on COC form by laboratory?		X	
1.4 Is the recorded temperature within control limits (4ºC ±2ºC)	X		

Comments:

The temperature was recorded on the cooler receipt form. The temperature blank was recorded at 5.0 degrees Celsius.

2.0 Case Narrative/Sample Information

2.1 Is a case narrative present and does it describe analytical problems, discrepancies and corrective actions?	X		
2.2 Are the field ID and corresponding laboratory sample numbers listed in a cross-reference table?	X		
2.3 Are batch QC and associated field samples listed in a cross-reference table?	X		
2.4 Are the samples and analyses reported in the data package consistent with the information on the COC forms?	X		

Comments:

3.0 Holding Times

3.1 Are the holding times within the holding time criteria? (metals 180 days)	X		

Comments:

4.0 Internal Standards

4.1 Are all internal Standard recovery values within the control limits? (ICP-MS 30% - 120%).			X

Comments:

This information is not available in the data package.

5.0 Method Blank

5.1 Are there any positive results (contaminants) for any analyte in any method blank?		X	

Comments:

Screener: Tonya Kauhi
Date: November 3, 2008

6.0 Laboratory Control Sample (Certified Reference Material)

6.1 Are all %R values within the control limits or are concentrations within the manufacturers certified acceptance limits?	X		
6.2 Are all RPD values within control limits (if duplicate analyzed)?	X		

Comments:

The acceptable %R values are 40% to 135% and the acceptable RPD value is less than 20%.

7.0 Matrix Spike/Matrix Spike Duplicate

7.1 Are all %R values within the control limits?	X		
7.2 Are all RPD values within control limits?	X		

Comments:

8.0 Laboratory Duplicate

8.1 Are all RPD values within control limits?	X		

Comments:

9.0 Field Duplicate

9.1 Are all RPD values within control limits?			X

Comments:

A field duplicate was not submitted.

10.0 Field Blank

10.1 Are there any positive results (contaminants) for any analyte in any field blank			X

Comments:

A field blank was not submitted.

Project Number: _____

SDG/Batch: _____

Screener: _____ **Date:** _____

Chemist: _____ **Date:** _____

❑ See attached.

Screener: Tonya Kauhi
Date: December 3, 2008

DATA QUALITY SCREENING & VERIFICATION WORKSHEET

Project No: 5147-006-05 **SDG: 806107**

Project Name: Port of Anacortes, Dakota Creek Industries

Laboratory: Pace Analytical **Methods:** EPA 8290, EPA 6010

1.0 Chain-of-Custody

	Y	N	N/A
1.1 Are all Chain-of-Custody (COC) forms included in data package?	X		
1.2 Were COC forms properly signed and dated	X		
1.3 Was sample container temperature recorded on COC form by laboratory?		X	
1.4 Is the recorded temperature within control limits (4ºC ±2ºC)	X		

Comments:

The temperature was recorded on the cooler receipt form. The temperature blank was recorded at 5.0 degrees Celsius.

2.0 Case Narrative/Sample Information

2.1 Is a case narrative present and does it describe analytical problems, discrepancies and corrective actions?	X		
2.2 Are the field ID and corresponding laboratory sample numbers listed in a cross-reference table?	X		
2.3 Are batch QC and associated field samples listed in a cross-reference table?	X		
2.4 Are the samples and analyses reported in the data package consistent with the information on the COC forms?	X		

Comments:

3.0 Holding Times

3.1 Are the holding times within the holding time criteria? (metals 180 days)	X		

Comments:

4.0 Internal Standards

4.1 Are all internal Standard recovery values within the control limits? (ICP-MS 30% - 120%).	X		

Comments:

This information is not available in the data package.

The internal standard recovery was outside control limits of 40% to 135% for OCDD-13C in sample 806107-15MSD (37%). The data was reanalyzed and correct values were obtained according to the case narrative.

The lab flagged several PCDD and PCDF with an "I" or "E" where interfering substances prohibited the confidence in the result. We recommend qualifying these results as estimated ("J" flag). See Table 1 Summary Qualification for details.

5.0 Method Blank

5.1 Are there any positive results (contaminants) for any analyte in any method blank?	X		

Comments:

Several congeners were detected in the method blank sample (BLANK-16804). Guidance states that if a blank analyte is detected, then any associated sample results for the analyte that are 5 times or less the values of the blank result are re-qualified as not detected and estimated (UJ flag). See Table 1 Summary Qualification for details.

Screener: Tonya Kauhi
Date: November 3, 2008

Several congeners were detected in the method blank sample (BLANK-16804). The results were greater than 5 times the blank result; therefore, the results were qualified as estimated biased high (J+ flag). See Table 1 Summary Qualification for details.

6.0 Laboratory Control Sample (Certified Reference Material)

6.1 Are all %R values within the control limits or are concentrations within the manufacturers certified acceptance limits?	X		
6.2 Are all RPD values within control limits (if duplicate analyzed)?	X		

Comments:

The acceptable %R values are 40% to 135% and the acceptable RPD value is less than 20%.

7.0 Matrix Spike/Matrix Spike Duplicate

7.1 Are all %R values within the control limits?	X		
7.2 Are all RPD values within control limits?		X	

Comments:

The RPD for >C10-C12 Aliphatics, >C12-C16 Aliphatics, >C10-C12 Aromatics, >C12-C16 Aromatics, >C16-C21 Aromatics and Naphtahlene exceeded control limits. Typically, sample results are not qualified based on matrix s RPD values alone but rather are evaluated in conjunction with other QC criteria. The associated Lab control spike (LCS) was within control limits and therefore no corrective action was taken.

8.0 Laboratory Duplicate

8.1 Are all RPD values within control limits?	X		

Comments:

9.0 Field Duplicate

9.1 Are all RPD values within control limits?			X

Comments:

A field duplicate was not submitted.

10.0 Field Blank

10.1 Are there any positive results (contaminants) for any analyte in any field blank			X

Comments:

A field blank was not submitted.

Project Number: _____

SDG/Batch: _____

Screener: _____ **Date:** _____

Chemist: _____ **Date:** _____

❑ See attached.

Screener: Tonya Kauhi
Date: December 3, 2008

DATA QUALITY SCREENING & VERIFICATION WORKSHEET

Project No: 5147-006-05 **SDG: 806108**

Project Name: Port of Anacortes, Dakota Creek Industries

Laboratory: Pace Analytical, CCI Analytical Laboratories

Methods: EPA 8290, NWTPH-GX, NWTPH-DX, EPA-8260SIM, EPA-8260, EPA-8270SIM, EPA-8270, EPA-8081, EPA-8151, EPA-8321B, EPA-200.8, EPA-7470

1.0 Chain-of-Custody

	Y	N	N/A
1.1 Are all Chain-of-Custody (COC) forms included in data package?	X		
1.2 Were COC forms properly signed and dated	X		
1.3 Was sample container temperature recorded on COC form by laboratory?	X		
1.4 Is the recorded temperature within control limits (4ºC ±2ºC)	X		

Comments:

The temperature was recorded on the cooler receipt form. The temperature blank was recorded at 6.8 degrees Celsius. The samples were received by the laboratory in less than 24 hours and were on ice. Guidance suggests when temperature exceeds the acceptable range to reject (R flag) the non-detect samples and flag the detected samples as estimated, biased low (J- flag). However, using professional judgment the temperature exceedance does not appear to affect data usability.

2.0 Case Narrative/Sample Information

	Y	N	N/A
2.1 Is a case narrative present and does it describe analytical problems, discrepancies and corrective actions?	X		
2.2 Are the field ID and corresponding laboratory sample numbers listed in a cross-reference table?	X		
2.3 Are batch QC and associated field samples listed in a cross-reference table?	X		
2.4 Are the samples and analyses reported in the data package consistent with the information on the COC forms?	X		

Comments:

3.0 Holding Times

	Y	N	N/A
3.1 Are the holding times within the holding time criteria? (metals 180 days)	X		

Comments:

4.0 Internal Standards

	Y	N	N/A
4.1 Are all internal Standard recovery values within the control limits? (ICP-MS 30% - 120%).	X		

Comments:

This information is not available in the data package.

The lab flagged several PCDD and PCDF with an "I" where interfering substances prohibited the confidence in the result. We recommend qualifying the result for the isomer 1,2,3,4,6,7,8-HpCDD as estimated ("J" flag).

5.0 Method Blank

	Y	N	N/A
5.1 Are there any positive results (contaminants) for any analyte in any method blank?	X		

Comments:

Several congeners were detected in the method blank sample (BLANK-16790). Guidance states that if a blank analyte is detected, any associated sample results for the analyte that are greater than the reporting limit but

less than the blank result are re-qualified as estimated. If any associated sample results for the analyte are greater than the reporting limit and greater than the blank result then use professional judgement in qualifying the results. We recommend qualifying the non-detect results for Total PeCDF, 1,2,3,4,7,8-HxCDF, Total HxCDF, 1,2,3,4,6,7,8-HpCDF, Total HpCDF, 1,2,3,4,6,7,8-HpCDD and Total HpCDD in sample 806108-1L as estimated (J-flag) and the detected results for OCDF and OCDD as estimated (J-flag).

6.0 Laboratory Control Sample (Certified Reference Material)

6.1 Are all %R values within the control limits or are concentrations within the manufacturers certified acceptance limits?	X		
6.2 Are all RPD values within control limits (if duplicate analyzed)?	X		

Comments:

The acceptable %R values are 40% to 135% and the acceptable RPD value is less than 20%.

7.0 Matrix Spike/Matrix Spike Duplicate

7.1 Are all %R values within the control limits?	X		
7.2 Are all RPD values within control limits?	X		

Comments:

8.0 Laboratory Duplicate

8.1 Are all RPD values within control limits?	X		

Comments:

9.0 Field Duplicate

9.1 Are all RPD values within control limits?			X

Comments:

A field duplicate was not submitted.

10.0 Field Blank

10.1 Are there any positive results (contaminants) for any analyte in any field blank			X

Comments:

A field blank was not submitted.

Project Number: _____

SDG/Batch: _____

Screener: _____ **Date:** _____

Chemist: _____ **Date:** _____

❑ See attached.

Screener: _____ **Date:**_____

DATA QUALITY SCREENING & VERIFICATION WORKSHEET

Project No: 5147-006-05 **SDG: K0808184**

Project Name: Dakota Creek Site

Laboratory: Columbia Analytical Services

Methods: EPA 160.3M, EPA 350.1M, PSEP Sulfide, PSEP TOC, EPA 1631E, EPA 3540, EPA 8082, EPA 8270C, EPA 8270 SIM

1.0 Chain-of-Custody

	Y	N	N/A
1.1 Are all Chain-of-Custody (COC) forms included in data package?	X		
1.2 Were COC forms properly signed and dated	X		
1.3 Was sample container temperature recorded on COC form by laboratory?	X		
1.4 Is the recorded temperature within control limits (4ºC ±2ºC)		X	

Comments: Cooler Temperature was recorded as 1.6 ºC on the cooler receipt form. The temperature was below the recommended limits, however, would not affect data quality.

2.0 Case Narrative/Sample Information

2.1 Is a case narrative present and does it describe analytical problems, discrepancies and corrective actions?	X		
2.2 Are the field ID and corresponding laboratory sample numbers listed in a cross-reference table?	X		
2.3 Are batch QC and associated field samples listed in a cross-reference table?		X	
2.4 Are the samples and analyses reported in the data package consistent with the information on the COC forms?	X		

Comments:

3.0 Holding Times

3.1 Are the holding times within the holding time criteria? (metals 180 days)	X		

Comments:

4.0 Internal Standards

4.1 Are all internal Standard recovery values within the control limits?	X		

Comments:

5.0 Method Blank

5.1 Are there any positive results (contaminants) for any analyte in any method blank?	X		

Comments:

Arsenic was detected in the method blank (KWG08184-MB). Guidance states that if a blank analyte is detected, then any associated sample results for the analyte that are 5 times or less the values of the blank result are re-qualified as not detected and estimated (UJ flag). Arsenic was detected at less than 5 times the blank result in sample SMA5-3 and therefore, was qualified as not detected and estimated (UJ flag).

Arsenic was detected greater than 5 times the blank result in sample SMA5-2 and therefore, was qualified as estimated biased high (J+ flag).

Screener: _____ **Date:**_____

6.0 Laboratory Control Sample (Certified Reference Material)

6.1 Are all %R values within the control limits or are concentrations within the manufacturers certified acceptance limits?	X		
6.2 Are all RPD values within control limits (if duplicate analyzed)?		X	

Comments:

The recovery for 2,4-Dimethylphenol was less than the recovery limits (10% to 81%) in samples KWG08080956-3 and KWG0808956-4 (7% and 6%, respectively). 2,4-Dimethylphenol is an analyte that is known to have a poor recovery rate. Guidance suggests if the recovery is less than the lower recovery limit, the associated non-detected target compound should be rejected ("R"). Based on this criteria, we recommend rejecting the non-detected 2,4-Dimethylphenol results in samples SMA5-3 and SMA5-2.

7.0 Matrix Spike/Matrix Spike Duplicate

7.1 Are all %R values within the control limits?	X		
7.2 Are all RPD values within control limits?		X	

Comments:

The RPD value for Pentachlorophenol the limit of 40 in sample SMA5-3 (RPD 44%).

Typically, sample results are not qualified based on RPD values alone but rather are evaluated in conjunction with other QC criteria. The associated Lab control spike (LCS) was within control limits and therefore no corrective action was taken.

8.0 Laboratory Duplicate

8.1 Are all RPD values within control limits?		**X**	

Comments:

9.0 Field Duplicate

9.1 Are all RPD values within control limits?			**X**

Comments: A field duplicate was not submitted.

10.0 Field Blank

10.1 Are there any positive results (contaminants) for any analyte in any field blank			**X**

Comments: A field blank was not submitted.

Project Number: _____

SDG/Batch: _____

Screener: _____ **Date:** _____

Chemist: _____ **Date:** _____

❑ See attached.

Screener: Tonya Kauhi
Date: November 3, 2008

DATA QUALITY SCREENING & VERIFICATION WORKSHEET

Project No: 5147-006-05 **SDG: K0808300**

Project Name: Port of Anacortes, Dakota Creek Industries

Laboratory: Columbia Analytical Services

Methods: EPA 160.3M, EPA 350.1M, PSEP Sulfide, PSEP TOC, EPA 1631E, EPA 3540, EPA 8082, EPA 8270C, EPA 8270 SIM

1.0 Chain-of-Custody

	Y	N	N/A
1.1 Are all Chain-of-Custody (COC) forms included in data package?	X		
1.2 Were COC forms properly signed and dated	X		
1.3 Was sample container temperature recorded on COC form by laboratory?		X	
1.4 Is the recorded temperature within control limits (4ºC ±2ºC)	X		

Comments:

The temperature was recorded on the cooler receipt form. The temperature blank was recorded at 3.0 degrees Celsius.

2.0 Case Narrative/Sample Information

2.1 Is a case narrative present and does it describe analytical problems, discrepancies and corrective actions?	X		
2.2 Are the field ID and corresponding laboratory sample numbers listed in a cross-reference table?	X		
2.3 Are batch QC and associated field samples listed in a cross-reference table?	X		
2.4 Are the samples and analyses reported in the data package consistent with the information on the COC forms?	X		

Comments:

3.0 Holding Times

3.1 Are the holding times within the holding time criteria? (metals 180 days)	X		

Comments:

4.0 Internal Standards

4.1 Are all internal Standard recovery values within the control limits? (ICP-MS 30% - 120%).	X		

Comments:

5.0 Method Blank

5.1 Are there any positive results (contaminants) for any analyte in any method blank?	X		

Comments:

Benzyl Alcohol was detected in the method blank (KWG0810601-5). Guidance states that if a blank analyte is detected, then any associated sample results for the analyte that are 5 times or less the values of the blank result are re-qualified as estimated. Benzyl alcohol was not detected in sample SMA3-2 and therefore, was no action was taken.

Screener: Tonya Kauhi
Date: November 3, 2008

6.0 Laboratory Control Sample (Certified Reference Material)

6.1 Are all %R values within the control limits or are concentrations within the manufacturers certified acceptance limits?	X		
6.2 Are all RPD values within control limits (if duplicate analyzed)?	X		

Comments:

7.0 Matrix Spike/Matrix Spike Duplicate

7.1 Are all %R values within the control limits?		X	
7.2 Are all RPD values within control limits?		X	

Comments:

The recoveries for acenaphthalene, acenaphthene, dibenzofuran, phenanthrene, anthracene and benzo(k)fluroanthene were less than established control limits in the MSD for sample K0909328-001. The QC sample is not part of this project.

The RPD values for all analytes in sample K0909328-001 exceeded the limit of 40 in QC batch KWG0810602-2. The QC sample is not part of this project.

Typically, sample results are not qualified based on matrix s RPD values alone but rather are evaluated in conjunction with other QC criteria. The associated Lab control spike (LCS) was within control limits and therefore no corrective action was taken.

8.0 Laboratory Duplicate

8.1 Are all RPD values within control limits?		X	

Comments:

The RPD for chromium (38.2%) and lead (21.0%) exceeded the control limit of 20% in sample SMA3-2. Typically, sample results are not qualified based on RPD values alone but rather are evaluated in conjunction with other QC criteria. The associated Lab control spike (LCS) was within control limits and therefore no corrective action was taken.

9.0 Field Duplicate

9.1 Are all RPD values within control limits?			X

Comments:

A field duplicate was not submitted.

10.0 Field Blank

10.1 Are there any positive results (contaminants) for any analyte in any field blank			X

Comments:

A field blank was not submitted.

Project Number: _____

SDG/Batch: _____

Screener: _____ **Date:** _____

Chemist: _____ **Date:** _____

❑ See attached.

Screener: Catalena Cabrera
Date: December 10, 2008

DATA QUALITY SCREENING & VERIFICATION WORKSHEET

Project No: 5147-006-05 **SDG: MN73, MS27, MV68, NC92, MN24, MO05**

Project Name: Port of Anacortes, Dakota Creek Industries

Laboratory: Analytical Resources Incorporated

Methods: SW8270, SIM SW8270D, SW8082, Krone/SIM SW827D, EPA 160.3, EPA 160.4, EPA 350.1M, EPA 376.5, Plumb, 1981NWTPH-HCID, 6010, 6020, 747, SW3510C

1.0 Chain-of-Custody

	Y	N	N/A
1.1 Are all Chain-of-Custody (COC) forms included in data package?	X		
1.2 Were COC forms properly signed and dated	X		
1.3 Was sample container temperature recorded on COC form by laboratory?		X	
1.4 Is the recorded temperature within control limits (4ºC ±2ºC)		X	

Comments:

The temperature was recorded on the cooler receipt form. Cooler temperatures were recorded between 13.2 and 15.8C, higher then recommended levels. Guidance suggest when temperature exceeds the acceptable range to reject (R flag) the non-detect samples and flag the detected samples as estimated, biased low (J- flag). However, using professional judgment the temperature exceedance does not appear to affect data usability.

2.0 Case Narrative/Sample Information

2.1 Is a case narrative present and does it describe analytical problems, discrepancies and corrective actions?	X		
2.2 Are the field ID and corresponding laboratory sample numbers listed in a cross-reference table?	X		
2.3 Are batch QC and associated field samples listed in a cross-reference table?	X		
2.4 Are the samples and analyses reported in the data package consistent with the information on the COC forms?		X	

Comments:

Case narrative reiterates the cooler temperate was outside the control limits.

Samples analyzed are not samples requested for analysis in COC.

3.0 Holding Times

3.1 Are the holding times within the holding time criteria? (metals 180 days)	X		

Comments:

Case narrative indicated holding times were within holding time criteria.

4.0 Internal Standards

4.1 Are all internal Standard recovery values within the control limits? (ICP-MS 30% - 120%).	X		

Comments:

This information was not available in the lab package. The case narrative did not indicate limits were not met.

5.0 Method Blank

5.1 Are there any positive results (contaminants) for any analyte in any method blank?		X	

Comments:

Screener:
Date: December 10, 2008

6.0 Laboratory Control Sample (Certified Reference Material)

6.1 Are all %R values within the control limits or are concentrations within the manufacturers certified acceptance limits?		X	
6.2 Are all RPD values within control limits (if duplicate analyzed)?		**X**	

Comments:

Benzyl alcohol was detected in the lab control spike (LCS-032108).

Benzyl alcohol, 2,4-Dimethylphenol and n-Nitrodiphenylamine was detected in batch for samples within MN24 & MO05.

Guidance suggests if the results from a duplicate analysis for an analyte fall outside the control limits, qualify the detected results as estimated (J) and qualify the non-detects as estimated (UJ). Based in these criteria, we recommend qualifying the detected Benzyl alcohol, 2,4-Dimethylphenol and n-Nitrodiphenylamine non-detected results in samples MN24A, MN24B, MN24C as estimated (UJ flag).

7.0 Matrix Spike/Matrix Spike Duplicate

7.1 Are all %R values within the control limits?		X	
7.2 Are all RPD values within control limits?	X		

Comments:

The percent recovery in Mercury for sample G-4-2-3 exceeded the percent recovery levels

Matrix Spike RPD % Recovery has either control limits not met or recover not applicable, sample concentrations too high for Copper, Lead, Mercury and Zinc.

The matrix duplicate for sample G-3-0-1 control limit was not met

The matrix duplicate for sample G-2 (1.5-2.5) control limit was not met

The matrix spike for duplicate G-2 (1.5-2.5) Percent recovery exceeded recovery limits

The matrix spike for G-7 (s) control limit was not met for zinc

RPD values were low for Benzyl for MN24 & MO05

High RPD values was detected for Dimethyl Phalate. A second prep batch was analyzed which detected Dibenz(a,h) Anthracene. Butylbenzylphthalate had a high RPD value. (MN24 & MO05)

MN24 & MO05 MS exceeded limits in Zinc.

Typically, sample results are not qualified based on matrix spike or RPD values alone but rather are evaluated in conjunction with other QC criteria. The associated Lab control spike (LCS) was within control limits and therefore no corrective action was taken.

8.0 Laboratory Duplicate

8.1 Are all RPD values within control limits?		X	

Comments: Sample G-7 (S) duplicate control limit was not met. For analyte arsenic, copper, lead and zinc

Samples within MN24 & MO05 had RPD outside limits for Arsenic, Copper, Lead and Zinc.

Typically, sample results are not qualified based on matrix s RPD values alone but rather are evaluated in conjunction with other QC criteria. The associated Lab control spike (LCS) was within control limits and therefore no corrective action was taken.

9.0 Field Duplicate

9.1 Are all RPD values within control limits?			X

Comments:

A field duplicate was not submitted

10.0 Field Blank

10.1 Are there any positive results (contaminants) for any analyte in any field blank			X

Comments:

A field blank was not submitted

Project Number: _____

SDG/Batch: _____

Screener: _____ **Date:** _____

Chemist: _____ **Date:** _____

❑ See attached.

APPENDIX C
Groundwater Evaluation

APPENDIX C
GROUNDWATER EVALUATION

The groundwater evaluation at the Dakota Creek Industries (DCI) shipyard facility (Site) was completed between June 16 and June 20, 2008. The evaluation included development of the newly installed monitoring well MW-5, an aquifer slug/hydraulic conductivity test and a 72-hour tidal study. The groundwater evaluation was conducted in general accordance with the procedures and methodology described in ASTM- D 4044-96 (2002) and the "Remedial Investigation/Feasibility Study and Interim Action Work Plan, Dakota Creek Industries" dated April 1, 2008 (GeoEngineers, Inc.).

Monitoring Well Development

Monitoring well MW-5 was developed on June 16, 2008, by surging and bailing with a dedicated poly-bailer. At the completion of development activities, the purged water from MW-5 was visibly silty, but did not contain significant quantities of sand. A total of 14 gallons (equivalent to six well casing volumes) were bailed from MW-5 during the development activities.

Aquifer Slug Tests

Falling-head and rising-head aquifer slug tests were completed in monitoring wells MW-1 through MW-5 on June 16, 2008 to estimate the hydraulic conductivity (permeability) of the aquifer at the Site. The aquifer slug tests were completed in general accordance with ASTM D 4044-96 (2002). The aquifer slug test results are summarized in Table C-1.

Initial groundwater levels were measured in the monitoring wells using an electric water level indicator before the slug rod was placed into the well. After the initial groundwater levels were measured, the slug tests were performed in each monitoring well using the following procedure:

1. After being cleaned with a Liqui-Nox® solution wash and distilled water rinse, a pressure sensor (Instrumentation Northwest PT2X, 15 pounds per square inch [psi] range, vented, with built-in data logger) was inserted in the well casing and suspended near the bottom of the well.
2. After being cleaned with a Liqui-Nox® solution wash and distilled water rinse, a slug rod (weighted 5-foot length of sealed PVC casing) of known volume was quickly lowered into the well with a length of dedicated cord. Two slug rods were used at MW-5.
3. The pressure sensor recorded the water level in the well at 1- to 15-second intervals as the water level dropped after insertion of the slug rod. Measurements continued until the water table returned to the approximate initial water level.
4. The slug rod was then rapidly removed from the well.
5. The pressure sensor recorded the water level in the well at 1- to 15-second intervals as the water level rose after removal of the slug rod. Measurements continued until the water table returned to the approximate initial water level.
6. The pressure sensor was removed from the well.

The Bouwer-Rice method, as presented by Kruseman and deRidder (1990), was used with the aquifer slug test data to estimate the horizontal hydraulic conductivity. Graphs showing the water level recovery during each aquifer slug test are presented in Figures C-1 through C-5. The position and slope of the selected straight line used in the Bouwer-Rice analysis of each aquifer slug test is also provided in the graphs.

The Bouwer-Rice method, as applied for this project, is based on the following assumptions:

- The aquifer is homogeneous, isotropic and fully penetrated by the monitoring wells.
- The aquifer and initial water table (piezometric surface) are horizontal and extend infinitely in the radial direction.
- Groundwater density and viscosity are constant.
- Groundwater flow can be described by Darcy's Law.
- A slug of known volume is inserted or extracted instantaneously from the well at the start of each test.
- Head losses through the well screen and filter material are negligible.
- The aquifer is incompressible.
- Changes in the piezometric surface are small compared to the saturated aquifer thickness.

The estimated hydraulic conductivity values ranged from 5.2 x 10-4 centimeters per second (cm/s) at MW-2 to 5.4 x 10-3 cm/s at MW-1, as summarized in Table C-1. The (geometric) mean value from the five tested wells is 9.1 x 10-4 cm/s. These values of hydraulic conductivity are consistent with the stratified soil types (sand, gravel, silt and clay) observed at the monitoring wells.

Tidal Study

A three-day tidal study was conducted from June 17 to June 20, 2008 to characterize the response of groundwater levels in monitoring wells MW-1 through MW-5 to tidal fluctuations in the basin. A graph of the measured water levels is presented in Figure C-6.

Initial water levels in the wells and basin were measured relative to surveyed points with an electric water level indicator. After being cleaned with a Liqui-Nox® solution wash and distilled water rinse, pressure sensors (Instrumentation Northwest PT2X, 15 or 30 psi range, vented, with built-in data loggers) were then placed in the inner basin (DCI Basin location, attached to the east dock) and in monitoring wells MW-1 through MW-5. The DCI Basin location is shown on Figure C-7. The pressure sensors recorded water levels at five minute intervals throughout the tidal study. Erratic measurements recorded by the pressure sensor at MW-5 on June 18, 2008 (Figure C-5) are not presented. Electrical and/or mechanical interference/disturbance in the vicinity of MW-5 may have caused these erratic measurements.

Data from the tidal study indicate that the influence of tidal fluctuations in the basin on groundwater levels is dissipated relatively quickly with increasing distance from the basin. The average fluctuation between the daily maximum and minimum tides was 10.0 feet during the three-day study period. The corresponding average groundwater fluctuations at MW-2 and MW-3 were 1.6 feet and 0.5 feet, respectively. Groundwater fluctuations at MW-5 and MW-4 were less

than 0.1 feet, and there was no significant fluctuation at MW-1 (less than 0.02 feet). The tidal efficiency, which is the ratio of groundwater level amplitude to tidal amplitude, diminishes very quickly from 16 percent at MW-2 and 5 percent at MW-3, to less than 1 percent at MW-5, MW-4 and MW-1. Tidal efficiencies are summarized in Table C-1.

Groundwater contour maps generated with data obtained during the tidal study are presented as Figures C-1 through C-3. The average groundwater levels measured at the times of the maximum daily high tides (June 17 at 7:20 PM, June 18 at 7:40 PM and June 19 at 8:30 PM) are shown in Figure C-7. The average groundwater levels measured at the times of the minimum daily low tides (June 18 at 10:55 AM, June 19 at 11:50 AM and June 20 at 12:15 PM) are shown in Figure C-8. The average groundwater levels measured during two complete tidal cycles (between June 17 at 7:40 PM and June 19 at 8:30 PM) are shown in Figure C-9. The data presented in Figure C-9 represent the average groundwater levels and flow directions between June 17 and 19, 2008.

REFERENCES

ASTM International. 2002. Standard Test Method (Field Procedure) for Instantaneous Change in Head (Slug) Tests for Determining Hydraulic Properties of Aquifers. ASTM D 4044-96 (Reapproved 2002).

Kruseman, G.P. and N.A. deRidder. 1990. Analysis and Evaluation of Pumping Test Data, second edition. International Institute for Land Reclamation and Improvement, The Netherlands. 377pp.

TABLE C-1
SUMMARY OF AQUIFER SLUG TESTS AND TIDAL STUDY
DAKOTA CREEK SHIPYARD
ANACORTES, WASHINGTON

Monitoring Well[1]	Soil Type[2]	Aquifer Slug Tests[3]			Tidal Efficiency[4]
			Estimated Hydraulic Conductivity, K (cm/s)		
		Type of Test	From Individual Tests	Geometric Mean	
MW-1	SP,CL	Falling-head	5.2E-03	5.4E-03	0.0%
		Rising-head	5.7E-03		
MW-2	SP,SM,ML,CL	Falling-head	4.4E-04	5.2E-04	16%
		Rising-head	6.1E-04		
MW-3	GP,ML,CL	Falling-head	9.1E-04	7.7E-04	5.1%
		Rising-head	6.5E-04		
MW-4	SM,ML,CL	Falling-head	4.2E-04	5.4E-04	0.37%
		Rising-head	7.0E-04		
MW-5	SP,SM,ML	Falling-head	6.2E-04	5.4E-04	0.59%
		Rising-head	4.7E-04		

Notes:

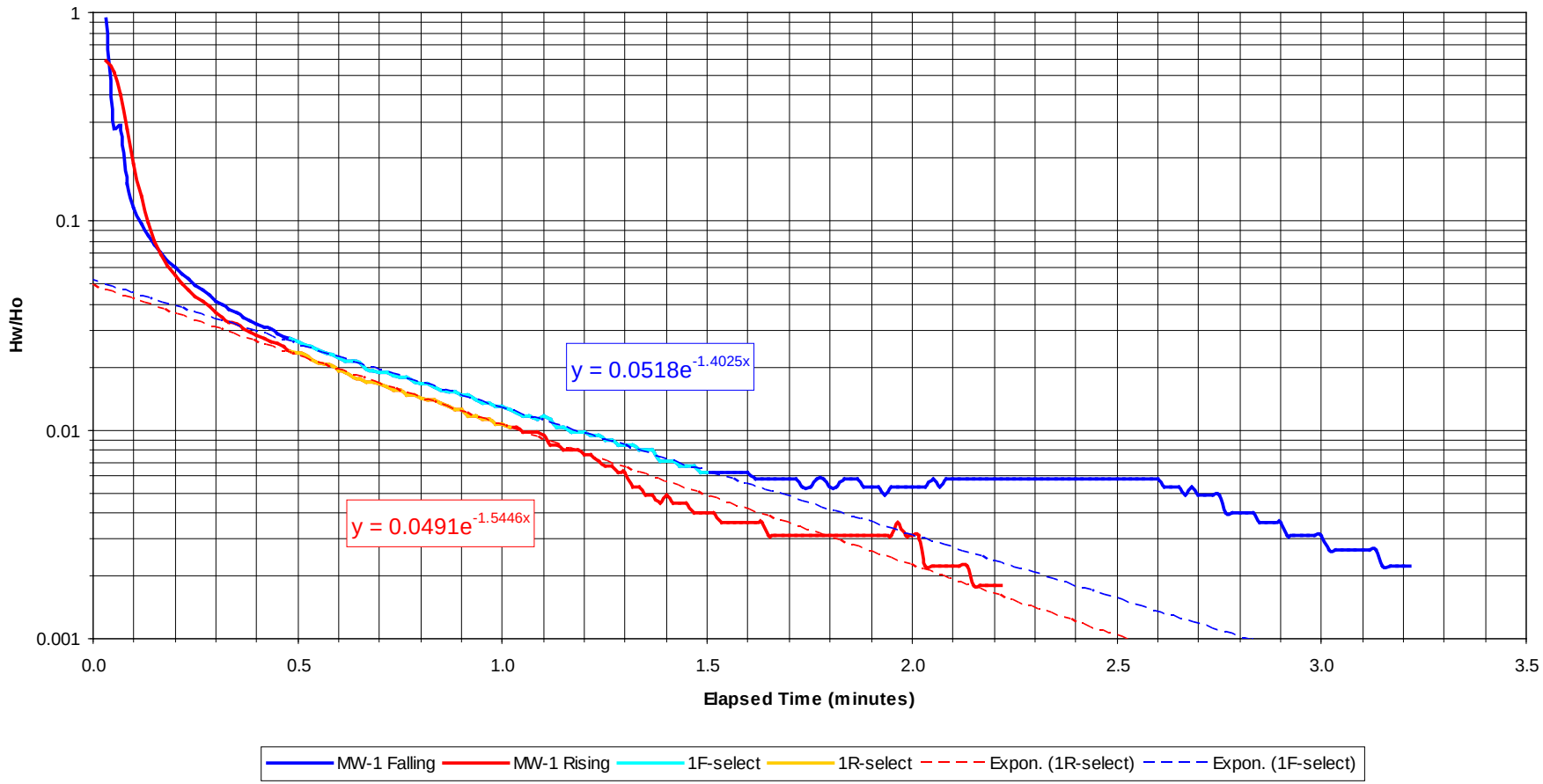
[1]Monitoring well locations are shown in Figure C-7.

[2]Soil types exposed within the saturated portion of the monitoring well.

[3]Aquifer slug testing procedures are described in Appendix C.

[4]Tidal efficiency is defined as the ratio of groundwater level amplitude to tidal amplitude.

cm/s = centimeters per second.

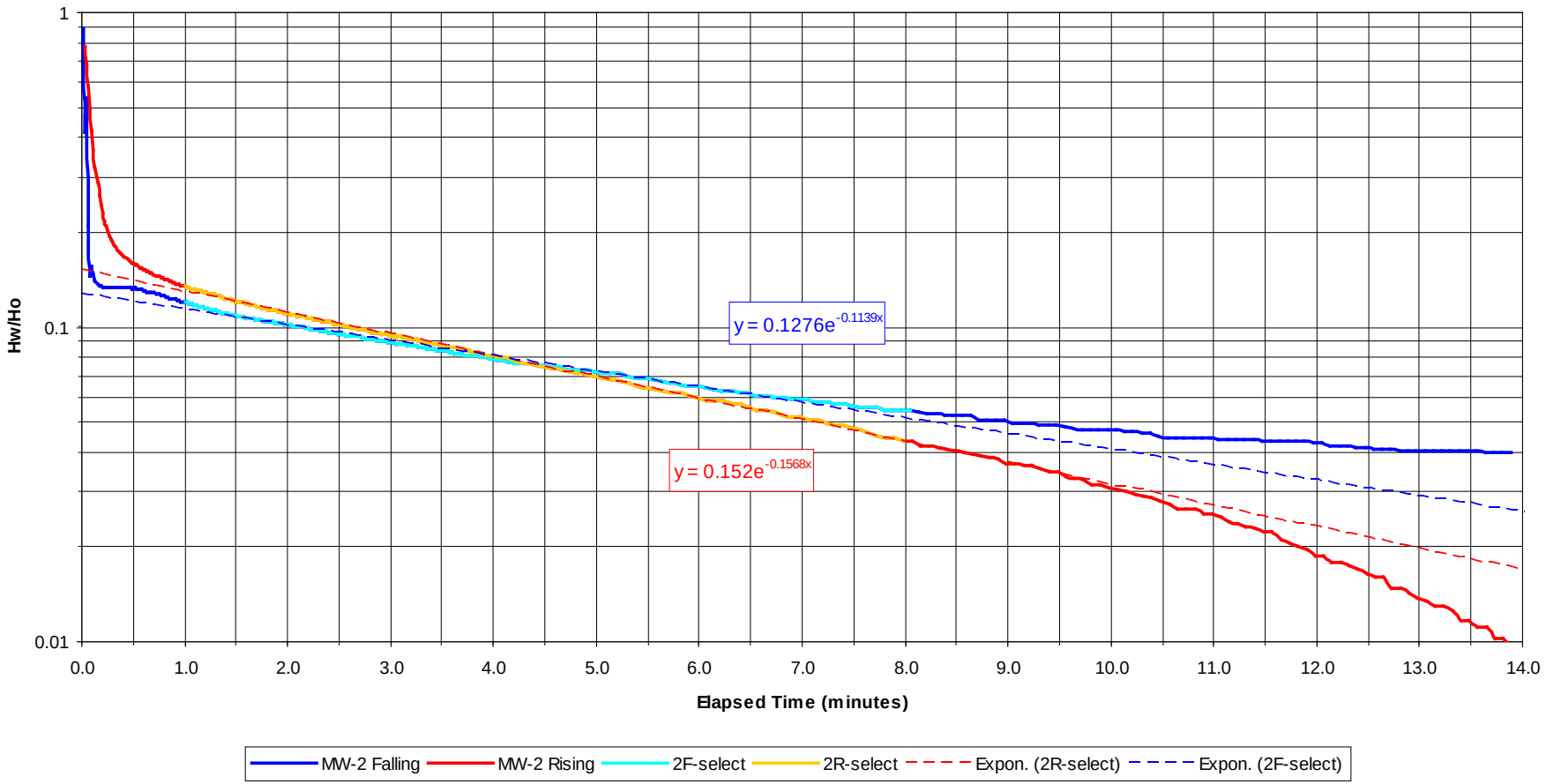


Aquifer Slug Testing at MW-1

Dakota Creek Shipyard
Anacortes, Washington

GeoEngineers

Figure C-1

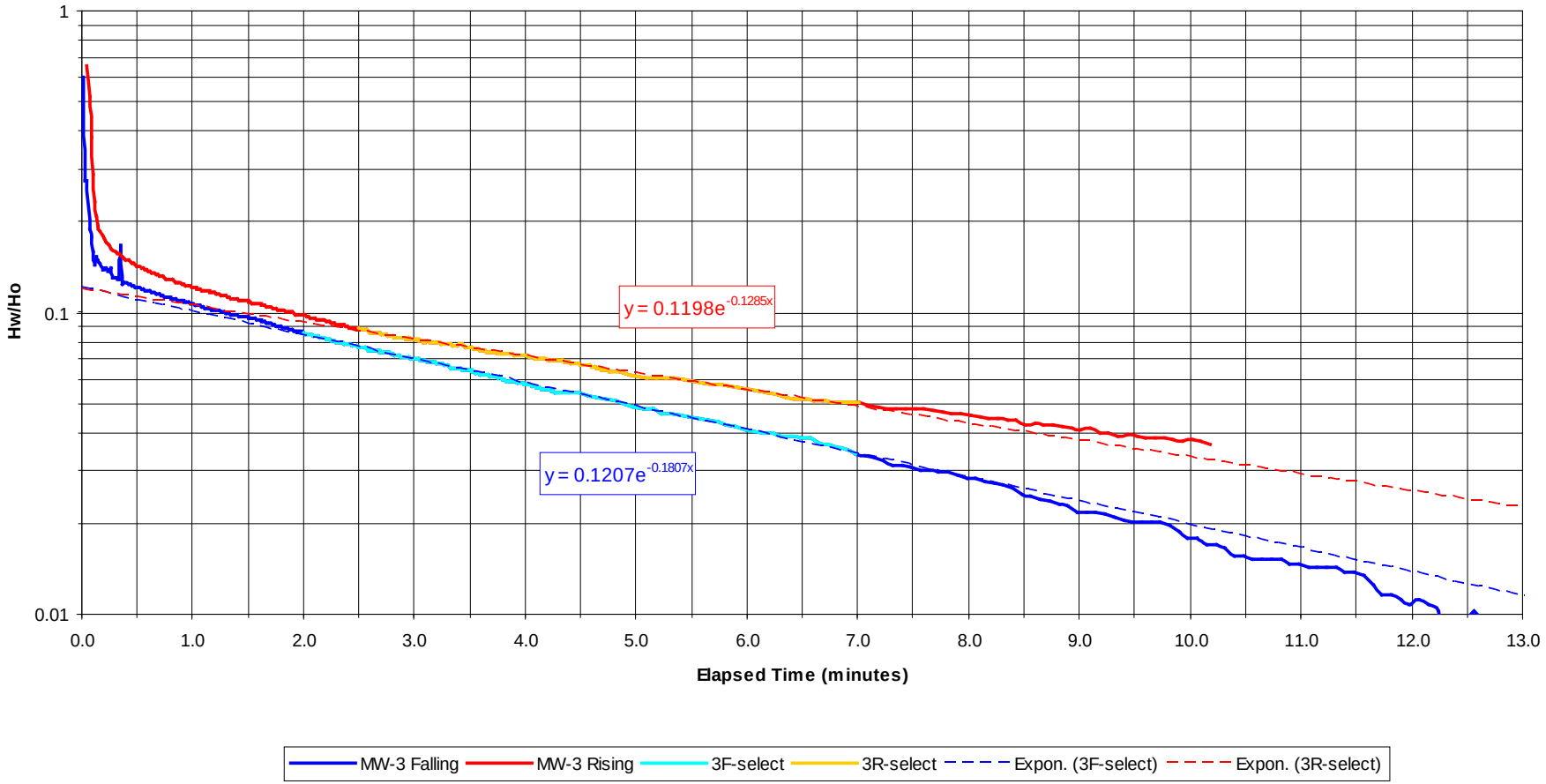


Aquifer Slug Testing at MW-2

Dakota Creek Shipyard
Anacortes, Washington

GeoEngineers

Figure C-2

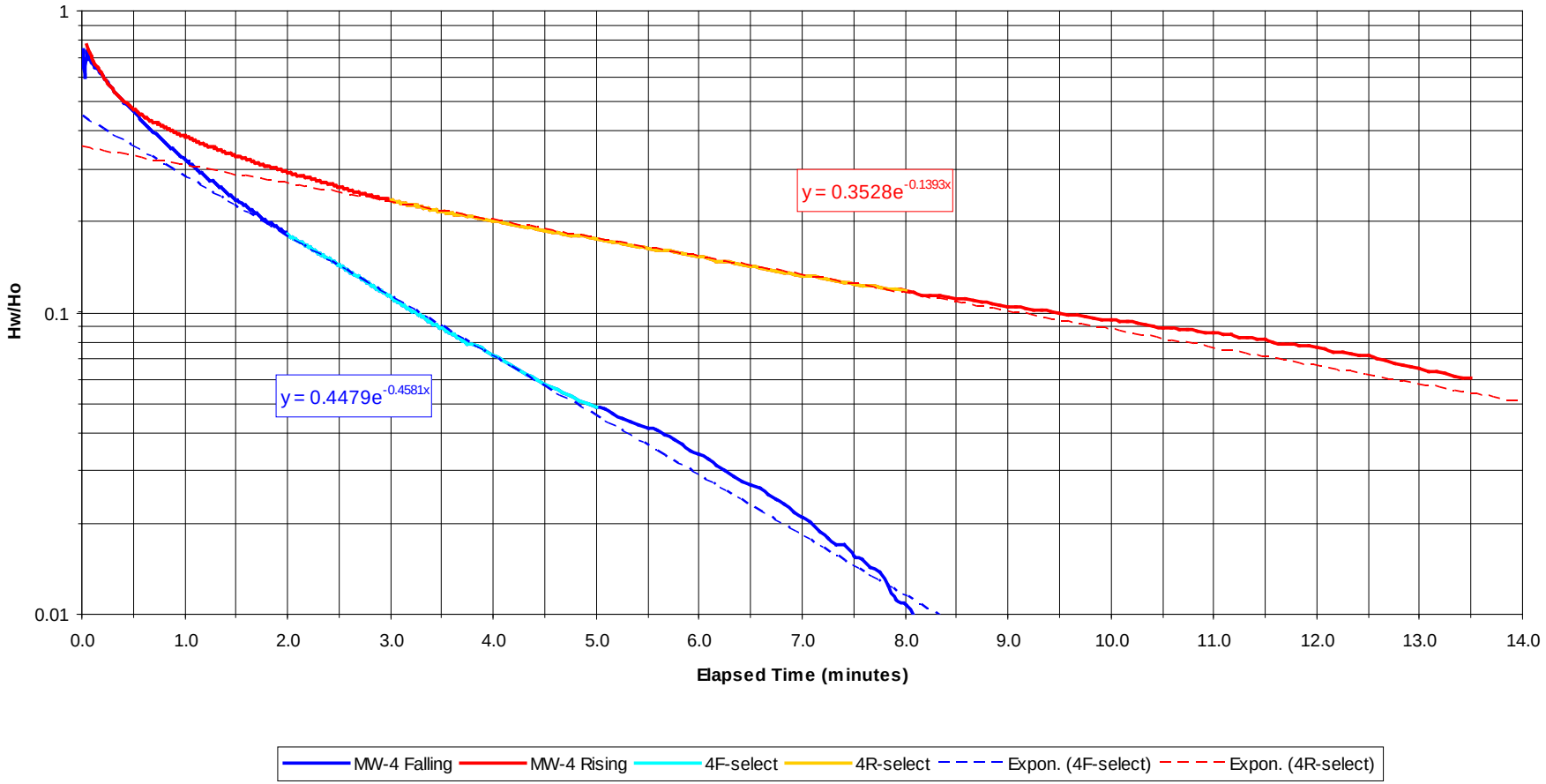


Aquifer Slug Testing at MW-3

Dakota Creek Shipyard
Anacortes, Washington

GeoEngineers

Figure C-3

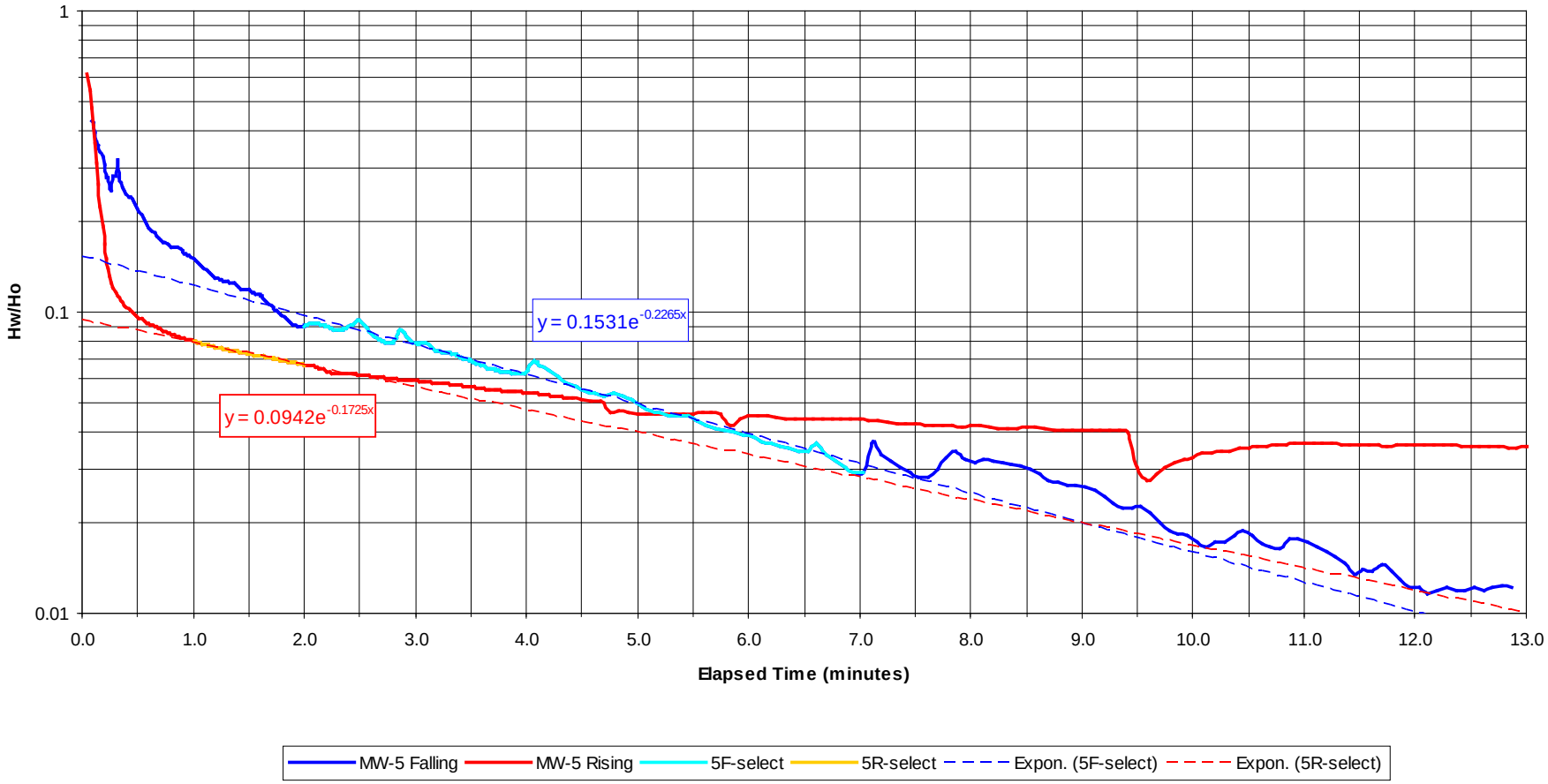


Aquifer Slug Testing at MW-4

Dakota Creek Shipyard
Anacortes, Washington

GeoEngineers

Figure C-4



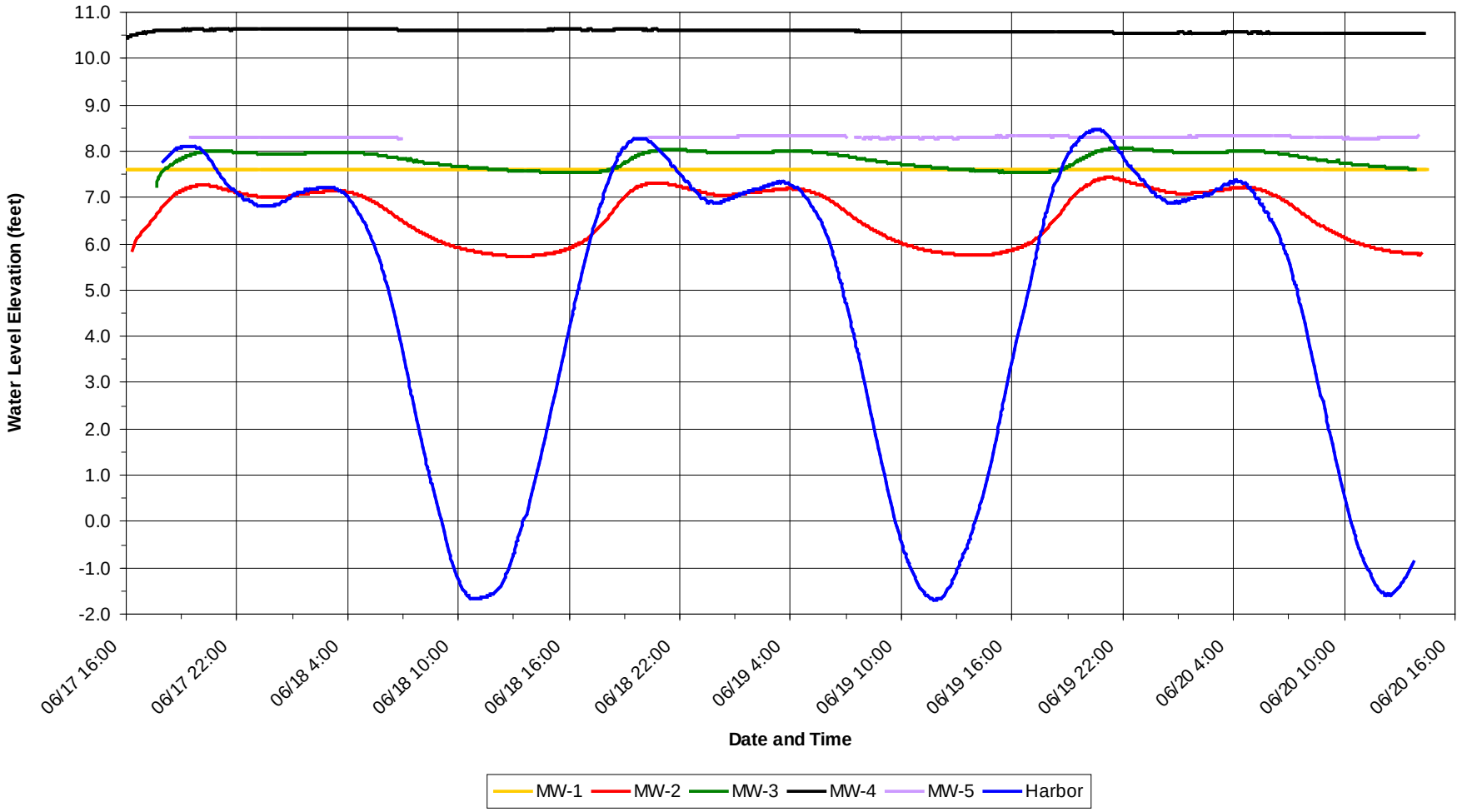
Aquifer Slug Testing at MW-5

Dakota Creek Shipyard
Anacortes, Washington

GeoEngineers

Figure C-5

SEAT\P:\514700601GW-Figures 07/11/08

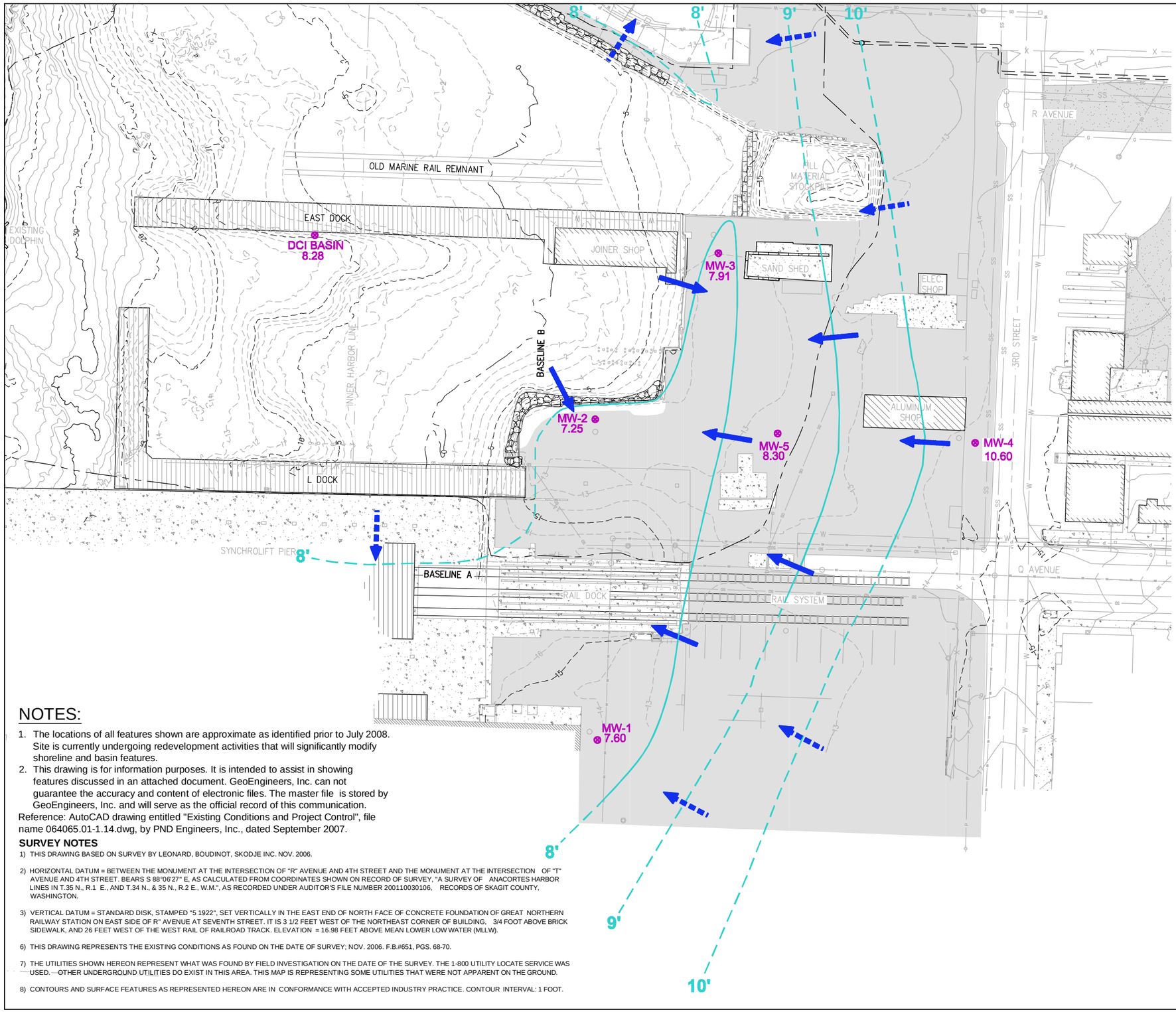


Tidal Study

Dakota Creek Shipyard
Anacortes, Washington

GeoEngineers

Figure C-6



Legend

Existing and Historical Site Features

- Existing fence
- CB — Catch Basin
- Sewer manhole
- Storm manhole
- Gravel
- Concrete
- Rip Rap
- 4 — Elevation contour
- MW-5 8.30 — Monitoring Well (groundwater elevation in feet)
- Groundwater Elevation Contour (dashed where inferred)
- Groundwater Flow Direction (dashed where inferred)

NOTES:

1. The locations of all features shown are approximate as identified prior to July 2008. Site is currently undergoing redevelopment activities that will significantly modify shoreline and basin features.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: AutoCAD drawing entitled "Existing Conditions and Project Control", file name 064065.01-1.14.dwg, by PND Engineers, Inc., dated September 2007.

SURVEY NOTES

1) THIS DRAWING BASED ON SURVEY BY LEONARD, BOUDINOT, SKODJE INC. NOV. 2006.

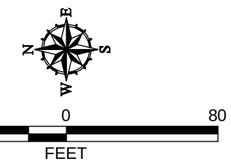
2) HORIZONTAL DATUM = BETWEEN THE MONUMENT AT THE INTERSECTION OF "R" AVENUE AND 4TH STREET AND THE MONUMENT AT THE INTERSECTION OF "T" AVENUE AND 4TH STREET. BEARS S 88°06'27" E, AS CALCULATED FROM COORDINATES SHOWN ON RECORD OF SURVEY, "A SURVEY OF ANACORTES HARBOR LINES IN T.35 N., R.1 E., AND T.34 N., & 35 N., R.2 E., W.M.", AS RECORDED UNDER AUDITOR'S FILE NUMBER 200110030106, RECORDS OF SKAGIT COUNTY, WASHINGTON.

3) VERTICAL DATUM = STANDARD DISK, STAMPED "5 1922", SET VERTICALLY IN THE EAST END OF NORTH FACE OF CONCRETE FOUNDATION OF GREAT NORTHERN RAILWAY STATION ON EAST SIDE OF R" AVENUE AT SEVENTH STREET. IT IS 3 1/2 FEET WEST OF THE NORTHEAST CORNER OF BUILDING, 3/4 FOOT ABOVE BRICK SIDEWALK, AND 26 FEET WEST OF THE WEST RAIL OF RAILROAD TRACK. ELEVATION = 16.98 FEET ABOVE MEAN LOWER LOW WATER (MLLW).

6) THIS DRAWING REPRESENTS THE EXISTING CONDITIONS AS FOUND ON THE DATE OF SURVEY; NOV. 2006. F.B.#651, PGS. 68-70.

7) THE UTILITIES SHOWN HEREON REPRESENT WHAT WAS FOUND BY FIELD INVESTIGATION ON THE DATE OF THE SURVEY. THE 1-800 UTILITY LOCATE SERVICE WAS USED. OTHER UNDERGROUND UTILITIES DO EXIST IN THIS AREA. THIS MAP IS REPRESENTING SOME UTILITIES THAT WERE NOT APPARENT ON THE GROUND.

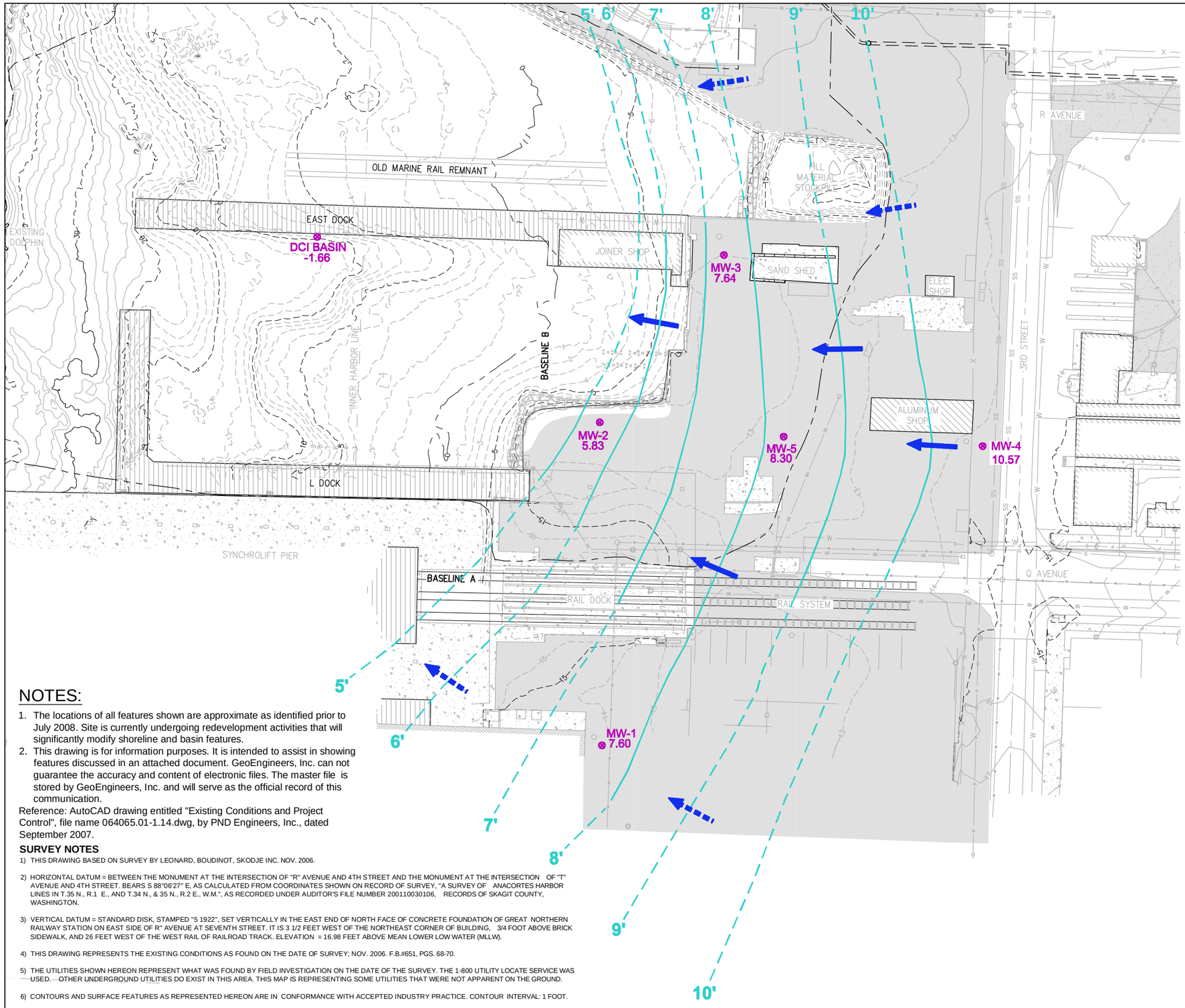
8) CONTOURS AND SURFACE FEATURES AS REPRESENTED HEREON ARE IN CONFORMANCE WITH ACCEPTED INDUSTRY PRACTICE. CONTOUR INTERVAL: 1 FOOT.



Average Water Level Elevations at High Tide (June 17-19, 2008)

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

GeoEngineers | Figure C-7



Legend

Existing and Historical Site Features

- Existing fence
- CB — Catch Basin
- Sewer manhole
- Storm manhole
- Gravel
- Concrete
- Rip Rap
- 4 — Elevation contour
- MW-5 8.30 — Monitoring Well (groundwater elevation in feet)
- Groundwater Elevation Contour (dashed where inferred)
- Groundwater Flow Direction (dashed where inferred)

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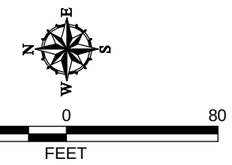
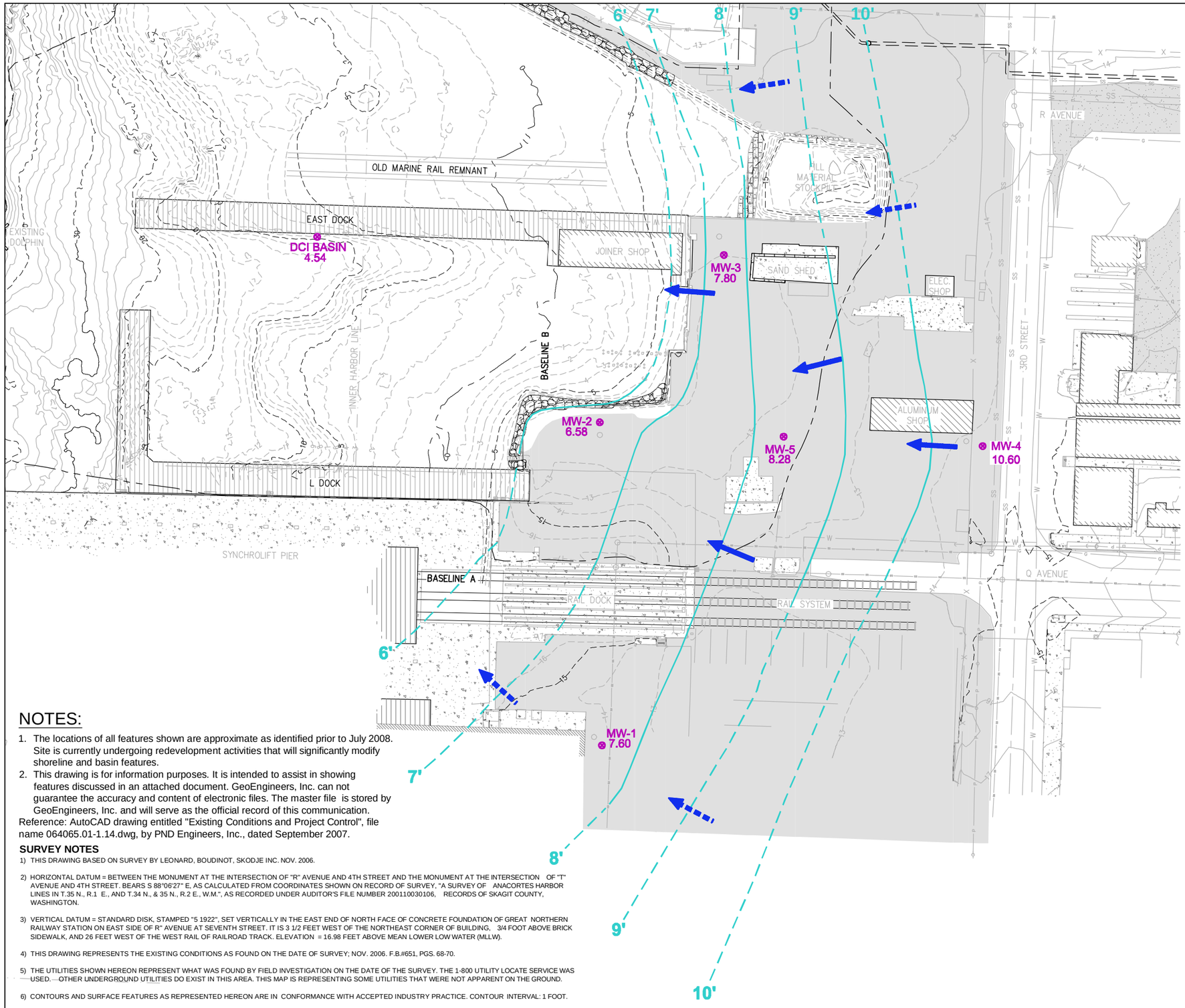


Average Water Level Elevations at Low Tide (June 18-20, 2008)

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

GeoEngineers | **Figure C-8**



Legend

Existing and Historical Site Features

- Existing fence
- CB — Catch Basin
- Sewer manhole
- Storm manhole
- Gravel
- Concrete
- Rip Rap
- 4 — Elevation contour
- MW-5 8.28 — Monitoring Well (groundwater elevation in feet)
- Groundwater Elevation Contour (dashed where inferred)
- Groundwater Flow Direction (dashed where inferred)

NOTES:

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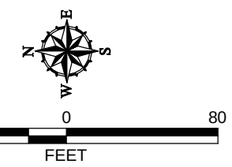

Average Water Level Elevations (June 17-19, 2008)

Port of Anacortes - Dakota Creek Industries
Anacortes, Washington

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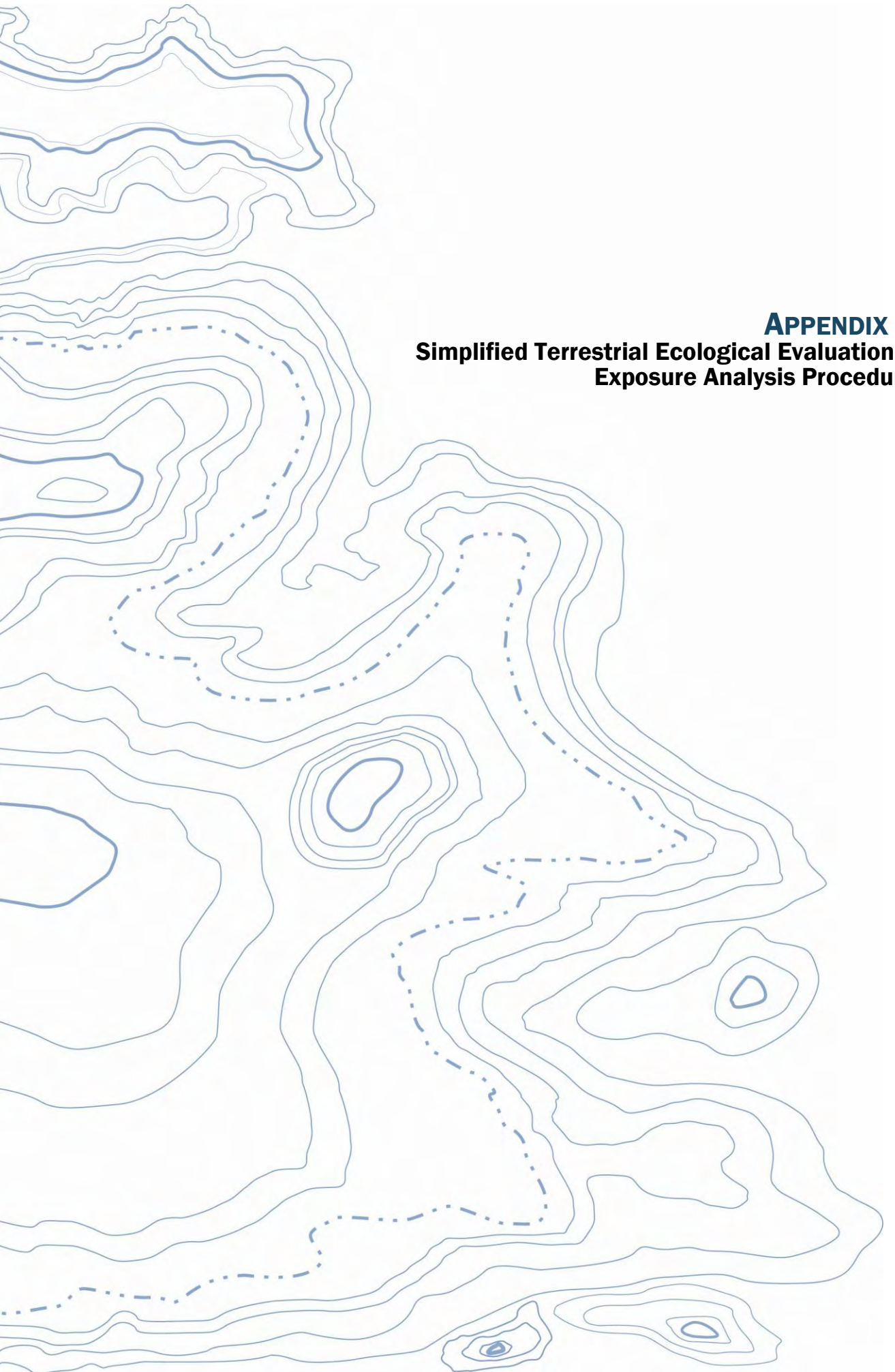
Figure C-9



APPENDIX D
Simplified Terrestrial Ecological Evaluation – Exposure Analysis Procedure

APPENDIX D
SIMPLIFIED TERRESTRIAL ECOLOGICAL EVALUATION – EXPOSURE ANALYSIS PROCEDURE

TABLE D-1. SIMPLIFIED TERRESTRIAL ECOLOGICAL EVALUATION – EXPOSURE ANALYSIS PROCEDURE UNDER WAC 173-340-7492(2)(A)(II).

Analysis	Score
1. Estimate the area of contiguous (connected) undeveloped land on the site or within 500 feet of any area of the site to the nearest 1/2 acre (1/4 acre if the area is less than 0.5 acre). "Undeveloped land" means land that is not covered by existing buildings, roads, paved areas or other barriers that will prevent wildlife from feeding on plants, earth-worms, insects or other food in or on the soil.	
Area (acres) / Points 0.25 or less — 4 0.5 — 5 1.0 — 6 1.5 — 7 2.0 — 8 2.5 — 9 3.0 — 10 3.5 — 11 4.0 or more — 12	4
2. Is this an industrial or commercial property? See WAC 173-340-7490(3)(c). If yes, enter a score of 3 in the box to the right. If no, enter a score of 1.	3
3. Enter a score in the box to the right for the habitat quality of the site, using the rating system shown below. (High = 1, Intermediate = 2, Low = 3)	3
4. Is the undeveloped land likely to attract wildlife? If yes, enter a score of 1 in the box to the right. If no, enter a score of 2.	2
5. Are there any of the following soil contaminants present: DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene? If yes, enter a score of 1 in the box to the right. If no, enter a score of 4.	1
6. Add the numbers in the boxes on lines 2 through 5 and enter this number in the box to the right. If this number is larger than the number in the box on line 1, the simplified terrestrial ecological evaluation may be ended under WAC 173-340-7492 (2)(a)(ii).	9

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