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DRAFT WORK PLAN FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY AND DRAFT CLEANUP ACTION PLAN

PORT OF EVERETT
BAY WOOD PRODUCTS SITE
200 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON 98201

Prepared by:

SLR International Corp

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ACRONYMS AND ABBREVIATIONS

ARARs	applicable or relevant and appropriate requirements
AST	above ground storage tank
bgs	below ground surface
BNAs	semi-volatile organic compounds (sediment)
BTEX	benzene, toluene, ethylbenzene, total xylenes
CAP	Cleanup Action Plan
CFR	Code of Federal Regulations
COPC	contaminants of potential concern
CSL	cleanup screening level
DQO	data quality objective
Ecology	Washington State Department of Ecology
EIS	environmental impact statement
EPA	Environmental Protection Agency
FS	feasibility study
HASP	health and safety plan
HCID	hydrocarbon identification
ICP	inductively coupled plasma-atomic emission spectroscopy
mg/Kg	milligrams per kilogram
mg/L	milligrams per liter
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
MCL	maximum contaminant level
MSDS	material safety data sheet
MTCA	Model Toxics Control Act
MW	monitoring well
NRCS	National Resource Conservation Service
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCP	Pentachlorophenol
ppm	parts per million
PPMETS	Priority pollutant metals, antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, zinc
PPP	Public Participation Plan
PQL	practical quantitation limit
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
RI	remedial investigation
SAP	sampling and analysis plan
SAPA	sediment sampling plan appendix
SEPA	State Environmental Policy Act
SHA	site hazard assessment
SLV	screening level values
SMS	Sediment Management Standards

SQS	Sediment Quality Standards
SVOC	semi volatile organic compounds
TEE	Terrestrial Ecological Evaluation
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TPH-Gx	total petroleum hydrocarbons as gasoline
TPH-Dx	total petroleum hydrocarbons as diesel
TVS	total volatile solids
UST	underground storage tank
VOC	volatile organic compound
WAC	Washington Administrative Code
WARM	Washington Ranking Method
WQC	water quality criteria

1. INTRODUCTION

This Work Plan has been prepared to describe the proposed work scope for completing the Remedial Investigation (RI), Feasibility Study (FS) and draft Cleanup Action Plan (CAP) at the Port of Everett Bay Wood Products Site (Site) located at 200 West Marine View Drive, Everett, Washington, 98201 (Bay Wood Site). The Bay Wood Site location is shown on Figure 1.

1.1 PURPOSE

This Work Plan is intended to describe the work scope that will be performed to meet the objectives in the Agreed Order for RI/FS Study and draft CAP dated October 3, 2008. The RI work scope has been developed to assess areas identified as potential environmental concerns based on historical activities to identify and quantify the contaminants of potential concern (COPCs) that may be present in soil, groundwater, surface water and sediments. The FS will evaluate potential alternatives and a preferred alternative for the cleanup of the identified contaminants. A detailed description of the cleanup of site contaminants will be provided in the draft CAP.

1.2 OBJECTIVES

The overall objective of the RI/FS is to identify the hazardous substances which have been released to the environment; assess the nature, extent and distribution of these substances; identify the potential migration pathways and receptors; assess the theoretical risk to human health and the environment; and generate or use data of sufficient quality for site characterization, risk assessment, and the subsequent analysis and selection of remedial alternatives.

1.3 GENERAL BACKGROUND

The Site consists of a 41.32-acre tract of land owned by the Port of Everett (Port) dating back to at least 1948. A Metsker's Atlas of Snohomish County published in 1936 indicated the Site was owned by Parker Lumber and Mill Company at that time. Historical Sanborn maps, reverse index city directories, and City of Everett building permits indicate the Site was occupied by a sawmill operation run by Washington Wood Products (also known as Washington Timber Products, Limited) through 1970. The Washington Wood Products operating areas were primarily located on the eastern approximately 1/3 of the Site. The operations included a sawmill, pre-fab shop, dry kilns, re-saw and planer shed, sorting shed, and numerous lumber storage and transfer sheds. In addition, a dip tank is depicted at the south end of the drying kiln on a 1968 Sanborn map. The western approximately 2/3 of the Site was primarily used for lumber and log storage. A log way was located on the southern portion of the Site and large log rafts were located to the northwest and north of the Site. The Site was subsequently occupied by Publishers Forest Products Company from 1970 to 1976, West Coast Orient Lumber Mills, Inc. from 1976 through 1978, and West Coast Lumber Operations Company from 1978 to 1979. Several additional buildings were constructed on the Property between 1970 and 1979, although the operations appeared to remain substantially the same.

In 1979 the Property was leased by Bay Wood Products, Inc., who dismantled the sawmill and began using the Site as a log storage and processing yard. By 1985 the main operations buildings had been removed from the Site, with the exception of an office/shop building, a large covered shed, and a

shop building with three large truck bays. Several small outbuildings also remained on the northern portion of the Site. In 1994 Bay Wood Products concluded their lease of the Site and the remaining buildings were razed.

Between August and October 1995 contractors working on behalf of the Port removed approximately 140,000 cubic yards (yd^3) of bark, rock, and wood chips from the Site. A dike constructed of rock and soil was built around the western approximately 2/3 of the Site with the top of the dike approximately 50 feet from the shoreline. Following removal of the wood debris and rock, the area was filled with approximately 200,000 cubic yards of dredge sediment from maintenance dredging of the Snohomish River Federal Navigation Channel.

The Site has remained vacant since the removal activities in 1995. Sometime between 2005 and 2006 soil and sediment from construction of the Port's 14th Street Bulkhead was placed onto the Site.

1.4 GENERAL SITE INFORMATION

Site Name: Port of Everett Bay Wood Products Site

Site Address: 200 West Marine View Drive

City and State: Everett, WA 98201

County: Snohomish

Township/Range/Section: Section 7, Township 29N, Range 5E of the Willamette Meridian

Latitude: 48º 00' 49.5"

Longitude: 122º 12' 34.5"

Washington State Department of Ecology (Ecology) Facility Site ID Number: 2757

Ecology Region: Northwest Region

Ecology Project Manager: Andy Kallus, Ecology, Toxics Cleanup Program

Ecology Project Coordinator: Isaac Standen, Ecology, Toxics Cleanup Program

Port of Everett Project Coordinator: Larry Crawford, Port of Everett

Project Coordinator for the Port of Everett: Scott Miller, SLR

2. PROJECT MANAGEMENT PLAN

The project management plan for completing the RI/FS and draft CAP consists of the work scope described in this Work Plan, project communications plan, project schedule, Sampling and Analysis Plans (SAP), Quality Assurance Project Plan (QAPP), and the project specific Health & Safety Plan (HASP).

2.1 PROJECT COMMUNICATIONS

The primary contacts, roles, and contact information for the work scope described in this Work Plan is summarized in the following table:

Ecology	SLR	Port of Everett
Ecology Project Coordinator Mr. Isaac Standen **Role:** Primary Site Contact Washington State Department of Ecology, Toxics Cleanup Program 300 Desmond Drive Lacey, WA 98503 Phone: 360/407-6776 Email Address: ista461@ECY.WA.GOV	Project Coordinator for the Port Mr. Scott Miller **Role:** Project Manager SLR International Corp 1800 Blankenship Road, Suite 440 West Linn, OR 97068 Phone: 503/723-4423 Fax: 503/723-4436 Email Address: smiller@slrcorp.com	Port of Everett Representative Mr. Larry Crawford **Role:** Port Contact / Coordinator Port of Everett P.O. Box 538 Everett, WA 98206 Phone: 425/259-3164 Fax: 425/212-2158 Email Address: LCrawford@portofeverett.com

2.2 RI/FS AND DRAFT CAP SCHEDULE

The following table presents the proposed schedule for completing the RI/FS and draft CAP at the Site. The schedule may change based on the availability of subcontractors, weather conditions, or other factors. Any schedule modifications will be submitted for approval by SLR to the Ecology Project Coordinator.

Task	Proposed Schedule
Port of Everett submits Final RI/FS Work Plan to Ecology:	March 29, 2009
Start RI/FS field work:	April 28, 2009
Receipt of laboratory results from RI/FS study field work:	August 26, 2009
Port of Everett submittal of validated study results to Ecology:	September 25, 2009
Port of Everett Submits 1st Draft RI/FS Report to Ecology:	December 24, 2009
Ecology Review period ends for the 1st Draft RI/FS Report:	January 23, 2010
Port of Everett submits 2nd Draft RI/FS Report to Ecology:	March 24, 2010
Ecology Review period ends for the 2nd Draft RI/FS Report:	April 23, 2010
Port of Everett submits the Draft Final RI/FS Report to Ecology:	May 8, 2010
Port of Everett submits the Draft CAP to Ecology:	June 7, 2010

2.3 SAMPLING AND ANALYSIS PLANS (SAPS)

The upland SAP details the proposed sample collection methods, sampling locations, assessment and sample collection depths, sample analysis, and equipment decontamination procedures. The upland SAP is provided in Appendix A. The sediment SAP details the proposed sediment sampling locations, sample collection methods, sampling equipment, and decontamination procedures. The sediment SAP will be provided in Appendix B. Please note that the sediment SAP is not included with this draft work plan submittal. The sediment SAP will be submitted under separate cover once sediment assessment data from Port Gardner Bay sampling and sampling locations near the Bay Wood Products site becomes available from Ecology.

2.4 QUALITY ASSURANCE PROJECT PLAN (QAPP)

The QAPP contains the Quality Assurance/Quality Control (QA/QC) procedures for both field and laboratory procedures. The QAPP is provided in Section 3 of the upland and sediment SAP, which are provided in Appendix A and Appendix B.

2.5 SITE HEALTH AND SAFETY PLAN (HASP)

The Site HASP contains procedures, tools, and equipment that will be used during field activities to monitor and protect worker health and safety. The HASP is provided in Appendix C.

3. SITE DESCRIPTION AND ENVIRONMENTAL BACKGROUND

3.1 SITE LOCATION

The Site is located at the confluence of the Snohomish River to the north and Port Gardner Bay (Possession Sound) to the west (Figure 1). The Site consists of three adjoining parcels (29050700100300, 29050700100500, and 29050700101000) with a combined land area (both in-water and upland) of approximately 41.32 acres, which includes approximately 13 acres above the tidal mudflats (Figure 2). The northerly 100 feet of the Site are encumbered by an easement to the U.S. Army Corps of Engineers for dike maintenance, encompassing a total of 4.12 acres. Copies of the three Snohomish County Assessor's parcel maps of the Site are included in Appendix D. The Site is bound to the north by vacant land owned by the Kimberly-Clark Worldwide, Inc., to the south by the former Nord Door site (JELD-WEN, inc.), to the east by West Marine View Drive and land owned by the Port of Everett, beyond which is the BNSF railway and vacant marshland (Maulsby Marsh), the western portion of which is owned by BNSF, and to the west by Port Gardner Bay.

The Site lies on an area of fill that extends into Port Gardner Bay. The Site is relatively flat, with a maximum elevation of approximately 15-feet above mean sea level. A portion of the Site lies within the 100-year flood plain.

3.2 SITE HISTORY

Historical activities at the Site have consisted primarily of sawmill, log processing, and lumber storage activities dating back to 1946. Areas on the eastern, northern, and southern portions of the Site were filled in various stages beginning in the late 1800s or early 1900s when the adjacent BNSF railroad, formerly Great Northern Railroad, was laying tracks along Port Gardner Bay. In 1946 the eastern portion of the subject property was occupied by a sawmill operated by Washington Wood Products (later known as Washington Timber Products). At this time the eastern portion of the Site was separated from the western portion of the Site by a channel running roughly through the center of the Site. No activities were apparent on the western portion of the Site. The eastern portion of the Site appeared to be occupied by a series of large buildings in the northeastern corner of the Site, and a smaller building in the southeastern portion of the Site. A rail spur was present along the far southeastern border of the Site. Lumber storage piles were visible across the Site. By the time of a 1955 aerial photograph, several additional large buildings had been constructed on the Site to the south and southwest of the previously existing buildings; including the main sawmill structures in the southwestern corner of the Site. A 1957 Sanborn map identifies on-site buildings to include large lumber sheds and dry kilns on the northeastern portion of the Site; an office building in the southeastern corner of the Site; a saw mill, sorting sheds, pre-fab shop, and hogged fuel bin in the southwestern portion of the Site; and a lumber transit shed located adjacent to the rail spur on the far southern portion of the Site. The western portion of the Site still appeared to be separated from the eastern portion by a channel. By at least 1965 the channel running through the center of the Site had been filled and the western approximately 2/3 of the Site was being used for lumber and log storage. The existing buildings on the eastern portion of the Site remained, although several had been expanded in size. A 1968 Sanborn map depicts a dip tank located on the south end of the dry kiln

building located on the east-central portion of the Site. The Site continues to be occupied by Washington Timber Products at this time.

The Site was subsequently operated by Publishers Forest Products Company from 1970 to 1976, West Coast Orient Lumber Mills from 1976 through 1978, and West Coast Lumber Operations Company from 1978 through 1979. During this time period, operations at the Site appeared to have remained substantially the same, although several additional small storage buildings were visible in aerial photographs to the west of the previously existing buildings. Building permits reviewed at the City of Everett indicate a new boiler building was constructed in the central portion of the Site in 1971. These features are shown on Figure 2 (Site Map with Historical Site Features) and Figure 3 (Site Map – Eastern Portion of the Site).

In 1979 Bay Wood Products, Inc. began occupying the Site for use as a log processing yard. Bay Wood Products dismantled the sawmill operation and removed the majority of the buildings from the Site, including the boiler building, several of the dry kilns, and several of the lumber sheds. Prior to Bay Wood Products commencing operations at the Site there is evidence that the previous tenants applied a geo-textile fabric to stabilize rock fill. The rock fill was reportedly applied to working surface of the Site to allow the heavy log handling equipment to have a stable base for operation. At the time of a 1984 aerial photograph the only buildings which remained on the Site included the office building, one dry kiln building, and one storage building. The dry kiln building and storage buildings were razed in 1991. Bay Wood Products' lease of the Site was discontinued in approximately 1994.

In 1994 Landau Associates (Landau) was contracted by the Port to estimate the amount of bark, rock, and wood debris material located on the upland portion of the Site, both above and below the geo-textile fabric layer. Material above the geo-textile fabric was attributed to activities conducted on-site by Bay Wood Products, while material below was attributed to the former lessees. The initial estimated volume of this log yard wood waste material was approximately 100,000 yd^3, including approximately 79,000 yd^3 which was attributed to Bay Wood Products. Given the quantity of material present on the Site, it was determined that the material needed to be managed in a manner consistent with wood waste provisions, including WAC 173-304, which provides guidance for handling solid waste and wood waste.

Between August and October 1995, contractors working on behalf of the Port removed approximately 140,000 yd^3 of bark, rock, and wood chips from the Site. The material was removed from the upland areas of the Site. A dike constructed of rock and soil was built around the western approximately 2/3 of the Site with the top of the dike approximately 50 feet from the shoreline. Following removal of the wood debris and rock, the area was filled with approximately 200,000 cubic yards of dredge sediment from the maintenance dredging of the Snohomish River Federal Navigation Channel.

The Site has remained vacant since the removal activities in 1995. Sometime between 2005 and 2006 soil and sediment from construction of the Port's 14th Street Bulkhead Replacement project was placed onto the Site. This material was characterized in accordance the Puget Sound Dredged Disposal Analysis (PSDDA) Program for suitability for open-water disposal. This characterization is documented in the *Everett Marian PSDDA Sediment Characterization Report, 14th Street Bulkhead*

Replacement, Everett, Washington, dated February 24, 2005. This report was prepared by The RETEC Group, Inc. and prepared for the Port of Everett.

3.3 ENVIRONMENTAL SETTING

The Site is located at the confluence of the Snohomish River to the north and Port Gardner Bay to the west. The Site is located on an area of fill which extends into Port Gardner Bay. No structures are present on the Site. The Site is adjoined by waterways and/or tidal mudflats to the north, south, and west. A narrow channel separates the Site from the adjacent property to the south. The Site is relatively flat, with a maximum elevation of approximately 15-feet above mean sea level.

According to the Soil Survey of Snohomish County Area, Washington (National Resource Conservation Service [NRCS], dated 1983) soils at the Site are classified as Urban Land. Urban Land is defined as areas that are covered by streets, buildings, parking lots, and other structures that obscure or alter the soils so that identification is not possible. Soils at the Site are likely classified as Urban Land as a result of the historic filling activities. In 1995, approximately 140,000 yd^3 of rock and wood debris were removed from the Site and replaced with dredge soils from the Snohomish River. According to a report summarizing the removal of PCB impacted soils on the eastern portion of the Site, soils encountered in the excavation were comprised of asphalt, crushed rock, wood debris, silt, and sand. No past groundwater sampling has been conducted at the Site. Groundwater flow is inferred to be generally toward Port Gardner Bay to the west.

The Snohomish River in the vicinity of the Site is a low salinity estuary, with flow velocities highly influenced by both tides and river discharges. Tides are diurnal, with two high tides and two low tides in each 24-hour period. Maximum annual flows in the Snohomish River occur from November through February as a result of winter precipitation and in May and June as a result of mountain snowmelt. Low flows occur in August and September. The geology of the lower Snohomish estuary in the vicinity of the Site generally consists of alluvial sand and gravel that may contain silt, clay, and organics.

The western and southern edges of the Site are covered by riprap and logs which slopes moderately down toward the shoreline. Pockets of dune grass are located between the rubble. Lower rubble supports barnacles and mussels and the shore crab. The riparian zone is composed principally of blackberry with a few willow trees. A wooden sea wall extends along the northeastern shoreline of the Site.

According to the Everett Shoreline Master Program dated May 3, 2002 and last updated November 17, 2005, the Snohomish River supports seven species of anadromous salmonids: chinook, coho, chum, pink, steelhead, cutthroat, and Dolly Varden/bull trout. Chinook salmon and bull trout were listed as threatened with extinction under the Endangered Species Act in 1999. Coho salmon are listed as a candidate species for federal protection. Other non-salmonid fish species include juvenile flounder, chub, and sculpin. Sticklebacks, perch, juvenile smelts, and lampreys are also found in the Site area. Less abundant species include candlefish, herring, and pumpkinseed.

The Snohomish River and estuary also provide wildlife habitats for birds (hawks, herons, bald eagles, bulls, kingfishers, turns, and sea ducks), mammals (harbor seals, sea lions, river otters, mink, muskrats, weasels, beavers, coyotes, raccoons, and deer), and invertebrates (barnacles, mussels,

clams, snails, shrimp, crab, isopods, and anemones). In July 2007, the U.S. Fish and Wildlife Service removed the bald eagle from the list of federal endangered and threatened wildlife. The bald eagle became a federal species of concern that no longer warranted protection under the Endangered Species Act (ESA). The bald eagle is currently a State Threatened species in Washington (WAC 232-12-292). The bald eagle is still federally protected under U.S. Codes including the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

Site-specific receptors will be evaluated as part of the RI through the completion of Terrestrial Ecological Evaluation (TEE), which will be completed in accordance with WAC 173-340-7490 to 7494. Current information on endangered species will be obtained directly from U.S. Fish and Wildlife and/or Washington State Department of Fish and Wildlife.

The Site is located in the west-central portion of Snohomish County. The climate of Snohomish County area is greatly tempered by winds from the Pacific Ocean. Summers are relatively warm, and winters are cool, but snow and freezing temperatures are uncommon. The average daily temperature in Everett in the summer is 62 degrees Fahrenheit and in the winter is 40 degrees Fahrenheit. During summer, rainfall is extremely light. During the rest of the year, rains are frequent, especially late in fall and in winter. The average annual precipitation in Everett is 36 inches (NRCS, 1983).

3.4 REGULATORY HISTORY AND PREVIOUS INVESTIGATIONS

Since 1989, several environmental assessment events have been completed at the Site to evaluate soil conditions. Activities associated with these investigations and their general findings, including regulatory compliance, are summarized in this section. Where appropriate and available, the analytical results from soil sampling have been included in the summary table (Table 1 – Soil Analytical Summary Table - PCBs). Refer to Figure 2 and Figure 3 for the locations of site features described in the paragraphs below.

September 25, 1989 Phase I Environmental Site Assessment (ESA), Existing Log Yard, Everett, WA, prepared by GeoEngineers for Bay Wood Products, Inc. – The Phase I included an assessment of the Bay Wood Products site, which included approximately two acres of fee land owned by Bay Wood Products, and an additional 11 acres owned by the Port of Everett and leased to Bay Wood Products. The two acres of land owned by Bay Wood Products consisted of a narrow waterway on the south edge of the property. At the time of the assessment the majority of the Site was covered by logs and several large piles of wood and bark residue. Three main buildings were located on the southeastern portion of the Site, which consisted of an office building with an attached shop area, a large covered shed, and an unused shop building with three large truck bays. All of the buildings were observed to have concrete floor slabs. Gravel was present over the concrete slabs in the shop buildings. Several small outbuildings were reported to be scattered across the property. Several aboveground tanks (ASTs) and drums were reported to be located in and around the buildings. No figures were included with the report depicting the location or size of the tanks. The tanks reportedly contained diesel fuel and waste oil. Staining was noted on the gravel and the concrete slab surfaces beneath the tanks. Several 55-gallon drums containing motor oil and hydraulic oil were observed in the covered shop area attached to the office building. Staining was observed on the gravel and concrete floor surface beneath the drums.

A portion of the concrete slab, roughly circular and approximately 10 feet in diameter, had been removed along the south edge of the covered shed. The concrete was reportedly removed during an EPA-mandated PCB cleanup in 1985, which resulted from a release from an on-site electrical transformer. General Electric (GE) removed the transformer and approximately 10 yd^3 of PCB-contaminated soil. GeoEngineers was not provided documentation of the PCB cleanup at the time of the Phase I ESA. Soil staining was observed in the surface gravel in the area where the concrete slab had been removed. The oil stains were suspected to be the result of vehicles parked in the area.

No evidence of current or former underground storage tanks (USTs) was identified at the Site. Based on a review of regulatory agency databases, GeoEngineers found no evidence that the Site or the immediate vicinity had a known environmental pollution incident. The adjacent property to the south (E.A. Nord Company) was identified as a UST site having five USTs. According to an interview with a representative of the E.A. Nord Company, three of the USTs were no longer in service. The GeoEngineers report made no conclusions about the environmental condition of the Site and provided no recommendations.

June 12, 1992 Letter from GeoEngineers regarding the Bay Wood Products Site –
This letter report appears to be a follow-up to the 1989 Phase I ESA. The letter addresses several issues which were not investigated further following the 1989 report, as well as discussing a recent review of state and federally listed sites, interviewing Bay Wood site personnel regarding current activities at the Site, reviewing representatives of the adjacent property to the south (E.A. Nord Company) regarding the current status of their USTs, a visual reconnaissance of the Site and surrounding properties to identify visible signs of contamination, and additional research regarding the 1986 removal of PCB waste from the Site by GE.

The issues of concern that were not further evaluated as part of the 1989 study included: staining on surface gravel and underlying concrete slab in the vicinity of two unused diesel ASTs and in several other areas of the large covered shed; evidence of spillage from a waste oil AST; the absence of documentation pertaining to the removal of the PCB-contaminated transformer, concrete slab, and associated contaminated soil; and oil stains observed in the surface gravel in the area where the transformer had been removed. According to interviews with Bay Wood personnel, the large covered shed and unused shop building were demolished in August 1991. Stained areas of gravel were removed and the concrete was cleaned when the shed and shop were demolished. GeoEngineers did not observe evidence of staining in the areas of the former buildings. The two former diesel ASTs were removed in early 1990, and the waste oil AST was emptied in early 1990 and has been unused since that time. Two 250-gallon motor oil ASTs and several 10 and 55-gallon drums containing hydraulic oil and waste oil were observed in the covered shed adjacent to the office. The waste oil was reportedly removed regularly by a waste oil contractor. Gravel staining was observed in the covered shop in the vicinity of the drums and ASTs. The gravel staining was approximately 4 to 6 inches thick and was located over a concrete slab. Limited areas of stained wood debris were observed in the

equipment maintenance area west of the covered shop. The wood debris was located over asphalt pavement. The staining appeared to be the result of leaks or drips from equipment parked in the area.

GeoEngineers reviewed records regarding the removal/disposal of PCB transformers and PCB waste from the Bay Wood Site which were obtained from the EPA and GE. The leaking transformer was located along the south edge of the covered shed. An EPA inspector visited the Site in February 1986 and noted dark staining on the soil in front of the transformer, behind the transformer, and at the lower part of the transformer casing. A sample of the transformer oil was collected, and the transformer was confirmed to be PCB-containing. An area of soil approximately 10 feet square and 10 inches deep was removed. No sampling associated with the removal was identified.

The GeoEngineers report recommended the area of the former leaking transformer and PCB-contaminated soil be identified, and shallow soil samples be collected for analysis of PCBs. The report further recommended removal of stained gravel in the covered shop, removal of the limited areas of stained wood debris in the equipment maintenance area, and recommended procedures be put in place to improve housekeeping in the vicinity of oil storage in the covered shop area.

September 1, 1992 Letter from GE Industrial Systems & Services to GeoEngineers regarding Port of Everett, Bay Wood Products Site – The letter was prepared in response to an inquiry from GeoEngineers concerning PCB cleanup activities at the Bay Wood Site. According to the letter, GE assisted Bay Wood Products in the removal of PCB-impacted soils at their site. The letter states that according to GE's field engineer an area 10 feet by 10 feet by 10 inches deep was removed, which included the area of high concentration PCBs. The letter stated that visual evidence was used to determine the spill area and the limit of the excavation. Sampling was not conducted as part of GE's investigation.

February 3, 1993 Environmental Site Assessment and Remedial Excavation, Bay Wood Products Log Yard, Everett, WA, prepared by GeoEngineers for Bay Wood Products, Inc. – At the time of the ESA the Site was operating as a sorting and storing yard for export logs. No milling, planning, cutting, preserving, dipping, painting, or other industrial-type operations were performed at the Site. The office building with attached covered shop area and three outbuildings were present on the Site. Equipment maintenance including lubrication, waste oil removal, and replacement of antifreeze was performed on-site in the vicinity of the covered shop area. Fueling of the on-site equipment was conducted by an outside contractor. The large covered shed and unused shop building with large truck bays described in the 1989 report had been demolished. No evidence of staining was observed in the vicinity of the former buildings, although some of the areas were obscured by logs or wood debris during the site visit.

An investigation of surface soils in the vicinity of the former area of PCB-contaminated soils was conducted as part of the ESA. In September 1992, four soil samples were collected from the boundaries of the former excavation at approximately 0.5 feet below

ground surface (bgs) for analysis of PCB. PCBs were identified in all four samples, with concentrations ranging from 0.75 milligrams per kilogram (mg/kg) to 1.18 mg/kg. The concentrations were above the MTCA Method A residential soil cleanup level of 1 mg/kg, but less than the industrial cleanup level of 10 mg/kg. Additional sampling was conducted in October 1992 to identify the lateral and vertical distribution of soil with PCB concentrations greater than 1 mg/kg. Eleven additional soil samples were collected from depths of 0.5 and 1 foot bgs. PCBs were not detected at concentrations above 1 mg/kg in the six samples collected from 1 foot bgs. Three samples from a depth of 0.5 feet bgs identified PCB concentrations in soil ranging from 1.27 mg/kg to 2.32 mg/kg. Based on this analysis approximately 45 cubic yards of soil was excavated from the area where PCB concentrations were above 1 mg/kg. Confirmation samples collected from the base of the excavation identified PCB concentrations raging from 0.068 mg/kg to 0.49 mg/kg, below the MTCA Method A cleanup residential soil cleanup value. These soil sampling results are summarized in Table 1 (attached). No further investigation in the vicinity of the former PCB transformer was recommended.

GeoEngineers concluded that based on their research, site visit, and review of available information, the only significant potential environmental issues observed at the Site was surface staining and storage of petroleum products in the equipment maintenance areas. However, the surface staining, apparently related to equipment maintenance activities at the Site, appeared limited in extent. Based on their observations and experience, it was not considered significantly different from typical surface conditions for industrial type properties. GeoEngineers stated that in their opinion the conditions observed did not pose a significant threat or potential threat to human health and the environment.

July 22, 1994 Letter Report from Landau Associates, Inc. regarding Bay Wood Products Log Yard, Everett, WA, prepared for the Port of Everett – Landau Associates was contracted by the Port to conduct an exploration of site conditions (specifically the depth of bark and wood debris on the uplands portion of the Site), prepare a volume estimate of the bark, wood, and rock debris in the upland portion of the Site which was associated with Bay Wood Products activities, and review the Port lease and selected environmental regulations related to log yard cleanup responsibilities. The Bay Wood Products Site was described to consist of approximately 20 acres total, with approximately 13 acres of upland (above the tidelands) areas. The Site had reportedly been leased by the Port to several different operators dating back to 1959. The operators used the Site for various log handling activities. The most recent tenant was Bay Wood Products, who least the property from 1980 through 1994. It was understood that prior to commencing log handling activities, Bay Wood Products placed a geo-textile fabric and a layer of coarse rock to prepare the Site surface. Based on the excavation of test pits, the volume of bark, rock, and wood debris material in the upland area of the Site (above the geo-textile fabric) was estimated to be approximately 79,000 yd^3. This material was attributed to Bay Wood Products former activities at the Site. A total of 25 test pits were excavated during this assessment. The approximate locations of these test pits are shown on Figure 3.

Landau reviewed information associated with environmental cleanup responsibilities identified in Bay Wood Products' lease, as well as environmental regulations applicable to wood waste. Landau concluded that lease provisions appeared to require Bay Wood Products to comply with solid waste regulations. These regulations include WAC 173-304, which provides guidance for handling solid waste and wood waste.

November 8, 1995 Letter from Landau Associates, Inc. regarding Estimated Wood Waste Volume, Preston Point Site, Everett, WA, prepared for the Port of Everett – Landau field personnel monitored wood waste excavation activities at the Site from August 25, 1995 through September 26, 1995, and collected elevation measurements to support development of a volume estimate of wood waste located above the geo-textile fabric. The upper layer of fill material at the Site was determined to include significant portions of bark and wood fragments, which were consistent with the Ecology's *Minimum Functional Standards for Solid Waste Handling* (MFS) definition of wood waste. Wood waste is defined by the MFS (WAC 173-304-100[91]) as a "…solid waste consisting of wood pieces or particles generated as a by-product or waste from…handling and storage of raw (forest product) materials…This includes, but is not limited to…log sort yard waste…" Landau determined that the volume of wood waste excavated from the Site during 1995, attributable to Bay Wood Products' activities was approximately 61,000 yd^3.

December 29, 1995 Engineers Report on Observations & Analysis of Excavation of Material from Bay Wood Log Yard, prepared by Forest Industries Engineering Systems (FIES) for Coast Pacific Trading, Inc. – FIES was contracted on behalf of Coast Pacific Trading, Inc. (the parent company of Bay Wood Products) to observe the dike construction and excavation of wood waste material from the Site and prepare an analysis of the types and volumes of materials excavated. The inspections were conducted between August 30, 1995 and October 20, 1995. The report estimated that approximately 85,000 to 90,000 yd^3 of material was removed from the central areas of the Site and 45,000 to 50,000 yd^3 of material was removed from the perimeter areas. The total material removed was estimated to be as much as 140,000 yd^3 of material.

February 24, 2005 Everett Marian PSDDA Sediment Characterization Report, 14th Street Bulkhead Replacement, Everett, Washington, prepared by The RETEC Group, Inc. for the Port of Everett – This report concludes that the sediment from the 14th Street Bulkhead Replacement project was evaluated according Puget Sound Dredge Disposal Analysis (PSDDA) guidelines, and that this material did not contain chemicals detected at a level greater than any of the PSDDA criteria and was suitable for unconfined, open-water disposal.

3.5 CURRENT AND FUTURE LAND AND WATER USE

The Site consists of approximately 41.32 acres of combined in-water and upland areas. The northerly 100 feet of the Site are encumbered by an easement to the U.S. Army Corps of Engineers for dike maintenance, encompassing a total of 4.12 acres (Figure 2).

There are no current operations at the Site. Surface water in the Site vicinity is utilized both commercially and recreationally. The Tulalip Tribes Reservation is located approximately one mile north of the Site, on the north side of the Snohomish River. Tulalip tribal members living on the Tulalip Reservation are engaged in both commercial and subsistence fishing near the confluence of Port Gardner Bay and the Snohomish River. There is no current or proposed future use for groundwater in the Site vicinity.

In June 2006 the Port of Everett and JELD-WEN (adjacent property owner to the south) submitted a joint request for a Comprehensive Plan Map Change and Rezone to the City of Everett. The proposal requested a change to the comprehensive plan designation of the respective properties from their current designation of Maritime Service to Waterfront Commercial. The proposal also requested the zone district be changed from its current designation as Maritime Services (M-S) and Heavy Manufacturing (M-2) to Waterfront Commercial with a Planned Development Overlay Zone allowing for a mix of residential, recreational, and commercial uses. The proposed changes to the Comprehensive Plan Map and Zone District require that the Shoreline Master Program be amended for the area from Urban Maritime Interim, Aquatic and Aquatic Conservancy to Urban Multi-Use. In July 2007 the City of Everett amended the comprehensive plan map as requested. The Port of Everett and JELD-WEN are still working with the City of Everett to achieve the requested changes to the Shoreline Master Program and Zoning Map. Future uses at the Site may include residential, recreational, and/or commercial uses depending on the outcome of the requested changes to the Shoreline Master Program, Comprehensive Plan Map, and Zone District.

3.6 CONCEPTUAL SITE MODEL

A conceptual site model (CSM) incorporates physical and chemical information to understand potential fate and transport mechanisms at the Site. The CSM considers contaminant sources, release mechanisms, transport and exposure pathways, and potential receptors. The CSM developed for the Port of Everett Site (Figure 4) describes the potential release mechanisms from the potential primary sources of hazardous substances to potential secondary and tertiary sources, the exposure media and routes, and the potential human receptors. This model reflects current conditions and possible future development in assessing exposure pathways. The CSM is based on available historical information and site-specific information gathered during historical sampling activities. A summary of the CSM including potential primary sources, release/transport mechanisms, primary exposure media and routes of exposure, and potential receptors are presented below.

- **Potential Primary Sources Of Contamination** – Potential primary sources of contamination identified for the Site include the following:

    - Former Aboveground Storage Tanks – Former ASTs that contained various petroleum fuels (gasoline and diesel), motor oils, and used motor oils. The potential primary release mechanisms from the ASTs may include historic releases to soil from overfilling, releases from the tanks, or drips/spills during transfer of fluids to/from the tanks.
    - Former Drum Storage Area – A former drum storage area was located in the covered shop connected to the office (Figure 3). Drums of motor oils, lubricating oils, waste oil, antifreeze, and hydraulic fluids were likely stored in

this former shop area. The potential primary release mechanisms from drum storage may include past overtopping, leaks, or spills.

- Former Stained Soil Area – Soil staining was observed on the wood debris gravel in the covered equipment area (former lumber shed). The stains were suspected to be the result of vehicles parked in the area. Stains were reportedly removed.
- Former Shop Areas – The pre-fab shop and filing room are located north of the former sawmill building. Potential primary release mechanisms associated with former shop activities could include historic spills or releases of hydraulic fluids, cutting oils, fuels (diesel and/or gasoline), and/or solvents to soil or surface pavement.
- Former Oil Shed – A former oil storage shed was identified north of the pre-fab shop on the 1968 Sanborn map. Potential primary release mechanisms associated with the former oil shed could include historic spills or releases of hydraulic fluids, cutting oils, and fuels (diesel and/or gasoline) to soil or surface pavement.
- General Site Operations – Past activities included a hog fuel burner which was formerly used to convert saw dust and wood waste from the sawmill activities into steam. The steam was used in the wood drying kilns. Boiler water treatment chemicals, ash disposal practices, and hydraulic equipment usage have the potential to result in environmental impairment. Potential primary release mechanisms from past activities include; ash disposal, leaks or spills to soil, surface pavement, or stormwater at the Site.

- **Release mechanisms** – A summary of the release mechanisms identified for the Site are provided below.

  - Primary Release Mechanisms – One of the primary means in which contaminants may have been released to the Site includes leaks and spills from primary sources to on-site soil and/or pavement during the Site's historical sawmill operations. Other primary release mechanisms may include stormwater runoff including runoff which would discharge into Port Gardner Bay.

  - Secondary Release/Transport Mechanisms – From on-site soil, secondary release mechanisms may include fugitive dust generation, runoff/overland flow, and leaching, all of which can contribute to the spread of contaminants (if present) in soil across the Site and have the potential to impact Port Gardner Bay. If present, contaminants in on-site soil may also volatilize into air, leach into on-site groundwater, and or be absorbed into on-site plants and animals through bioaccumulation. For on-site groundwater, secondary release mechanisms may include volatilization of contaminants into air and groundwater migration/seepage, which can be a source for potential surface water and sediment contamination in Port Gardner Bay. Contaminants in Port

Gardner Bay, if present, may be further released through the displacement and mixing of sediment particles by aquatic animals or plants (i.e., bioturbation) and through tidal currents. In addition, contaminants in Port Gardner Bay, if present, may be absorbed into aquatic organisms through bioaccumulation.

- **Primary Exposure Media And Routes Of Exposure** – The exposure media are the environmental media through which human or ecological receptors could be exposed to hazardous substances (if present). As depicted in Figure 4, the primary exposure media affected by potentially released hazardous substances at the Bay Wood Site include the following:

    - On-site soil
    - Air
    - On-site groundwater
    - Port Gardner Bay Sediment and Surface Water
    - Terrestrial (e.g., plants and animals) and Aquatic (e.g., fish and invertebrates such as shellfish) Prey Species

  Ingestion and dermal contact with soil, sediment, and surface water, in addition to inhalation and dietary ingestion, are the major routes of exposure through which human receptors may potentially contact contaminated media associated with the Bay Wood Site. The primary means in which terrestrial ecological receptors may potentially come into contact with contaminants are through direct contact with soil, sediment, and surface water, and through dietary ingestion. The primary means in which aquatic ecological receptors may potentially come into contact with contaminants are through direct contact with sediment and surface water and through dietary ingestion.

  Groundwater at the Site does not meet the definition of potable water as outlined in WAC173-340-720(2) based on the following factors: (a) the ground water does not serve as a current source of drinking water; and (b) the ground water is not a potential future source of drinking water given the Site's proximity to surface water that is not suitable as a domestic water supply.

- **Receptors** – Receptors are the human and ecological populations that may be potentially exposed to hazardous substances, considering current and future site land and water use. The potential human and ecological receptors identified for the Bay Wood Products Site on Figure 4 are as follows: future child and adult residents, future industrial workers, future construction workers, tribal subsistence fishers, and terrestrial/aquatic ecological receptors.

3.7 PRELIMINARY CLEANUP LEVELS

The preliminary cleanup levels (PCLs) will be used to verify the COPCs for soil, sediment, and groundwater at the Site as part of the RI. PCLs for soil and groundwater are presented in Tables 1

through 7. PCLs for sediment are presented in Table 1 of the Sediment SAP included as Appendix A. PCLs were obtained as defined below:

- **Groundwater** – Because on-site groundwater is non-potable in accordance with WAC 173-340-720(2), groundwater PCLs are based on the most restrictive level between protection of marine and freshwater surface water. The Site is located within an estuary and may contain both freshwater and marine species. The most restrictive cleanup level between MTCA Method A (WAC 173-340-730[2]) and Method B (WAC 173-340-730[3]) was used. If a PCL was not available from the aforementioned sources, then the most restrictive PCL between MTCA Method A (WAC 173-340-720[3]) and Method B (WAC 173-340-720[4]) for potable groundwater was used. PCLs for groundwater are presented in Attachment 2. Attachment 2 provides a summary of the methodology used to generate these groundwater PCLs.
- **Soil** – Soil PCLs were calculated by selecting the most stringent value based on protection of human health (under a future residential scenario), protection of terrestrial ecological receptors, and protection of groundwater. The most restrictive cleanup level between MTCA Method A (WAC 173-340-740[2]) and Method B (WAC 173-340-740[3]) for unrestricted land use was used. MTCA Cleanup Regulations, Priority Contaminants of Ecological Concern for Sites that Qualify for the Simplified TEE Procedure, Table 749-2 for unrestricted land use were used. The Simplified TEE cleanup levels were used for the RI, however a Site Specific TEE may be conducted as part of the FS.

  Soil PCLs were calculated using Ecology's three phase partitioning model as described in WAC 173-340-747 to generate soil concentrations which are protective of surface water. The chemical physical parameters were obtained from the CLARC tables. In the event that the calculated PCLs were below the laboratory PQLs, the PCL defaulted to the laboratory PQL. PCLs for soil are presented in Attachment 2. Attachment 2 provides a summary the calculations used to generate the soil PCLs.

- **Sediment –** Sediment PCLs will be based on Sediment Quality Standards (SQS) and Cleanup Screening Levels (CSLs) identified in the Sediment Management Standards (SMS) (Chapter 173-204 WAC). Sediment PCLs will be outlined in the sediment SAP; the sediment SAP will be submitted under separate cover and will be included as Appendix B on the Final Draft version of this Work Plan.

3.8 PURPOSE AND OBJECTIVES

The scope of the field investigation presented in this Work Plan has been developed to allow for completing the RI/FS and development of a draft CAP. The purpose of the field investigation is to collect and analyze adequate samples such that the Site will be sufficiently characterized for completing the RI/FS and developing the draft CAP.

Table 1 summarizes previous PCB soil sampling results and the calculated PCLs for PCBs in soil as presented in Attachment 2. Additional site characterization is needed to evaluate identified data gaps and to help define potentially complete exposure pathways and the extent of impacts. The objective of this section is to describe the work scope and methods for completing the environmental field investigation to meet these stated objectives.

3.9 INVESTIGATION AREAS

Potential contaminant migration pathways and specific areas of interest will be assessed to complete the site characterization. Potential pathways/areas, investigation rational, and proposed sampling is discussed in the following sections. The proposed sampling locations are shown on Figure 5. The upland and sediment SAPs (Appendices A and B, respectively) detail the proposed sample collection methods, sample handling, chain-of-custody procedures, sampling equipment, and decontamination procedures.

The removal of 140,000 cubic yards of material removed from the Site resulted in an average of 4 to 6 feet of material depth removed across the approximately 13 acre upland portion of the Site. This removal activity resulted in the removal of Site structures, surface features, and near surface soil from identified areas of environmental interest. Removed material was replaced with approximately 200,000 cubic feet of dredged sand from the Snohomish River Federal Navigation Channel. Accordingly, soil sampling in the locations presented below target the soil below the imported dredged sand placed on the Site following the material removal in 1995.

3.9.1 FORMER COVERED SHOP ATTACHED TO THE FORMER OFFICE BUILDING

Data Gap: The former covered shop attached to the former office building (Figure 2) was indentified in previous environmental assessment reports as the location for ASTs and drum storage. Areas of surface staining were also noted in previous assessment reports. Approximately one to two feet of soil was removed and replaced with dredge sediment from the maintenance dredging of the Snohomish River Federal Navigation Channel. Surface features and surface soil were removed from nearly the entire Site, including this area.

Proposed Assessment: Two Geoprobe borings (proposed borings PB-1A and PB-1B) will be advanced at the location of the former covered shop as shown on Figure 5. A total of two soil samples will be collected from the soil below the dredge fill from the Geoprobe borings (one from each boring location). The soil samples will be submitted for TPH-HCID (NWTPH methods) analysis with follow-up analysis for TPH-Dx and/or TPH-Gx, priority pollutant metals (PPMETS) using EPA 6000/7000 series methods, Polynuclear Aromatic Hydrocarbons (PAHs) by EPA method 8270, and volatile organic compounds (VOCs) by EPA method 8260 if the HCID shows the presence of this range of hydrocarbons in the sample. Groundwater grab samples will be collected from each of the two boring locations (PB1-A-GW and PB1-B-GW) and analyzed for TPH-HCID with follow-up analysis for TPH-Dx and/or TPH-Gx. The groundwater samples will also be submitted for PAH and VOC analysis. Groundwater samples from each boring will be collected and held by the laboratory for possible total metals analysis, pending the results of the metals analysis of soil.

3.9.2 FORMER PCB TRANSFORMER AREA

Data Gap: An investigation of surface soils in the vicinity of the former area of PCB-contaminated soils was conducted. Two soil removal events were completed. Confirmation samples collected from the base of the second excavation identified PCB concentrations raging from 0.068 mg/kg to 0.49 mg/kg, below the MTCA Method A cleanup residential soil

cleanup value. Approximately one to two feet of soil was removed and replaced with dredge sediment from the maintenance dredging of the Snohomish River Federal Navigation Channel. Surface features and surface soil were removed from nearly the entire Site, including this area. Soil sampling was not completed for total petroleum hydrocarbons and groundwater sampling was not conducted.

Proposed Additional Assessment: One Geoprobe boring (PB-2A) will be advanced in the vicinity of the former transformer area. One soil sample will be collected from the soil below the dredge fill from the Geoprobe boring. The soil sample will be submitted for PCBs by EPA method 8082 and for TPH-HCID (NWTPH methods) analysis with follow-up analysis for TPH-Dx and/or TPH-Gx. A groundwater grab sample (PB-2A-GW) will be collected and analyzed for TPH-HCID with follow-up analysis for TPH-Dx and/or TPH-Gx. A groundwater sample will be collected and held by the laboratory for possible PCB analysis, pending the results of the PCB analysis of soil.

3.9.3 FORMER MILL OPERATION AREAS

Data Gap: Historical activities at the Site have consisted primarily of sawmill, log processing, wood fired boiler(s), lumber drying (drying kilns), and lumber storage activities. The location of the mill buildings and support structures are shown on Figure 3. Former mill operations would have included equipment for log debarking, lumber sawing, boiler(s), conveying equipment, maintenance shop(s), and equipment repair. These operations areas are areas of chemical storage and usage with the potential to release chemicals to the environment.

Proposed Assessment: Four Geoprobe borings (PB-3A, PB-3B, PB-3C, and PB-3D) will be advanced at the location of the former mill operations areas. PB-3A will be advanced at the location of the former boiler building identified in the 1957 and 1968 Sanborn maps. PB-3B will be advanced at the location of the boiler room building identified in the building department records. PB-3C will be advanced at the location of the former pre-fab shop attached to the former sawmill building. PB-3D will be advanced at the location of the former filing room that was also attached to the former sawmill building. These proposed sampling locations are shown on the Figure 5. A total of four soil samples will be collected from the soil below the dredge fill from the Geoprobe borings (one sample from each boring location). The soil samples will be submitted for TPH-HCID (NWTPH methods) analysis with follow-up analysis for TPH-Dx and/or TPH-Gx if the HCID shows the presence of this range of hydrocarbons in the sample. The soil samples will also be submitted for PCBs, priority pollutant metals (PPMETS) using EPA 6000/7000 series methods, and PAHs by EPA method 8270. Groundwater grab samples will be collected from each of the four boring locations (PB-3A-GW, PB-3B-GW, PB-3C-GW, and PB-3D-GW) and analyzed for TPH-HCID with follow-up analysis for TPH-Dx and/or TPH-Gx. The groundwater samples will also be submitted for PPMETS, PAHs, and VOC analysis.

3.9.4 FORMER SURFACE STAIN AREA AT DRY STORAGE

Data Gap: A Phase I assessment completed prior to the 1995 removal of materials at the Site identified an area of surface soil stains. All surface material was removed from this area.

Assessment at this area will be performed to assess if the chemicals that caused the reported surface stains may have resulted in deeper soil and/or shallow groundwater impacts.

Proposed Assessment: One Geoprobe boring (PB-4A) will be advanced at the location of the former dry storage area (lumber storage sheds). The proposed boring location is shown on Figure 5. One soil sample will be collected from the soil below the dredge fill from the Geoprobe boring. The soil sample will be submitted for TPH-HCID (NWTPH methods) analysis with follow-up analysis for TPH-Dx and/or TPH-Gx. The soil samples will also be submitted for PCBs, PPMETS, PAHs, and VOCs. A groundwater grab sample will be collected (PB-4A-GW) and analyzed for TPH-HCID with follow-up analysis for TPH-Dx and/or TPH-Gx. The groundwater sample will also be submitted for PPMETS, PAHs, and VOC analysis.

3.9.5 FORMER DIP TANK

Data Gap: The 1968 Sanborn map identifies a dip tank located south of one of the dry kiln buildings (Figure 3). Historical lumber treating using a dip tank has the potential to release wood treating chemicals into the environment. Environmental sampling of this former dip tank location is proposed to assess deeper soil and shallow groundwater for potential impacts from the former wood treating operations. Approximately one to two feet of soil was removed and replaced with dredge sediment from the maintenance dredging of the Snohomish River Federal Navigation Channel.

Proposed Assessment: Two Geoprobe borings (PB-5A and PB-5B) will be advanced in the southeastern portion of the Site, in the vicinity of the former dip tanks identified in a 1968 Sanborn map. One soil sample will be collected from the soil below the dredge fill from each of the two Geoprobe borings (two soil sample total). The soil samples will be submitted for TPH-HCID (NWTPH methods) analysis with follow-up analysis for TPH-Dx and/or TPH-Gx if the HCID shows the presence of this range of hydrocarbons in the sample. The two samples will be analyzed for metals, SVOCs by EPA method 8270 (including pentachlorophenol [PCP]), and VOCs. The soil sample exhibiting the highest concentrations of impacts based on field screening methods and the TPH-HCID results will be analyzed for Dixon & Furans by EPA Method 1613B. Groundwater grab samples will be collected from each of the two boring locations (PB5-A-GW and PB-5B-GW) and analyzed for TPH-HCID with follow-up analysis for TPH-Dx and/or TPH-Gx. The groundwater samples will also be submitted for SVOC and VOC analysis. Groundwater samples from each boring will be collected and held by the laboratory for possible Dioxin & Furans analysis if the soil sample identifies Dioxin & Furans.

3.9.6 FORMER OIL STORAGE SHED

Data Gap: The 1968 Sanborn map identifies an oil storage shed west of the mill building (Figure 3). Approximately one to two feet of soil was removed and replaced with dredge sediment from the maintenance dredging of the Snohomish River Federal Navigation Channel. Deeper soil and the shallow groundwater in this area will be sampled to assess if historical oils storage may have resulted in soil and/or shallow groundwater impacts.

Proposed Assessment: One geoprobe boring (proposed boring PB-6A) will be advanced at the location of the former oil storage shed as shown on Figure 5. One soil sample will be collected from the soil below the dredge fill from the Geoprobe boring. The soil sample will be submitted for TPH-HCID (NWTPH methods) analysis with follow-up analysis for TPH-Dx and/or TPH-Gx, PPMETS, PCBs, PAHs, and VOCs by EPA method 8260 if the HCID shows the presence of hydrocarbons in the sample. A groundwater grab sample will be collected from the boring (PB-6A-GW) and analyzed for TPH-HCID with follow-up analysis for TPH-Dx and/or TPH-Gx. The groundwater sample will also be submitted for PAH, PCBs, and VOC analysis. The groundwater sample will be held by the laboratory for possible total metals analysis, pending the results of the metals analysis of soil.

3.9.7 SEDIMENTS AND CHANNEL SEGMENT SEDIMENTS

Data Gap: Historical activities at the Site have consisted primarily of sawmill, log processing, and lumber storage activities dating back to 1946. Past activities at the Site have resulted in accumulation of wood debris in the intertidal areas surrounding the Site and channel sediment south of the Site. The accumulation of wood debris in an aquatic environment is known to impose physical and chemical impacts to the biological resources that reside on surface sediments

Proposed Assessment: The proposed scope of the sediment assessment and the sediment SAP is not included with this work plan submittal. The sediment SAP will be submitted under separate cover once sediment assessment data from Port Gardner Bay sampling and sampling locations near the Bay Wood Products site becomes available from Ecology.

3.9.8 GENERAL HABITAT RESTORATION DATA NEEDS

The RI includes an assessment of potential impacts to the shoreline. If the RI data shows impacts to the shoreline area, supplemental data may be necessary to assess the extent of impacts and evaluate the habitat restoration alternatives. Evaluation of habitat restoration alternatives, if necessary, will be addressed as part of the FS (discussed in Section 4.0 below).

Data Gap: Additional data may be needed to evaluate habitat restoration alternatives if shoreline impact is identified.

Proposed Additional Assessment: To evaluate habitat restoration alternatives, the types, concentrations, and aerial extent of the contaminants present at the Site will need to be understood. This information will be gathered as part of the RI. Supplemental data that may also need to be gathered could include:

a.) the type(s) of substrate or percent fines (muddy soft bottom, coarse, gravelly, cobble, etc.),
b.) vegetation types (terrestrial and aquatic) and locations mapped,
c.) physical artificial impairments, such as over water structures, pilings, or concrete rubble, impacting the natural environment,
d.) the depth level or bathymetry, including the ordinary high water mark (deep subtidal [below -14 feet], shallow subtidal [-14 to -4 feet], intertidal [-4 to +13 feet]),

e.) an evaluation of the terrestrial and aquatic receptors, as well as density in comparison to appropriate reference sites.

3.10 SAMPLING METHODS AND DATA QUALITY OBJECTIVES

The number of sampling locations, sampling depths, types of samples, and types of analysis have been selected to meet the objective of the RI/FS. That is, to identify the hazardous substances which have been released to the environment; assess the nature, extent and distribution of these substances; identify the potential migration pathways and receptors; assess the theoretical risk to human health and the environment; and generate or use data of sufficient quality for site characterization, risk assessment, and the subsequent analysis and selection of remedial alternatives.

The data quality objectives (DQOs) for the RI/FS are designed to ensure that data of sufficient quality and quantity will be available to identify if hazardous compounds are present at the Site and to evaluate risks posed by the presence of hazardous compounds and identify if hazardous compounds may pose unacceptable risks to current and future human and ecological receptors via direct contact or migration. The DQOs will be used to identify the analytical practical quantification limit (PQL) goals and to establish other quality assurance goals. The DQOs are used to obtain appropriate quantification limits and to meet the requirements of WAC 173-340-820, MTCA. The DQOs are presented in the Sampling and Analysis Plans (SAP). The SAP details the proposed sample collection methods, sampling equipment, and decontamination procedures. The Quality Assurance Project Plan (QAPP) contains the Quality Assurance/Quality Control (QA/QC) procedures for both field and laboratory procedures and is provided in the upland and sediment SAPs.

3.11 REMEDIAL INVESTIGATION REPORT

The RI report will document the findings from the field work described in this work plan and the results from previous assessments. These findings and results will be used to identify the hazardous substances released to the environment; summarize the nature, extent, and distribution of these substances; and identify the potential migration pathways and receptors. Summary tables of the soil, groundwater, and sediment analytical results including the method reporting limits and method detection limits will be provided along with figures depicting the sampling locations.

The general elements of the RI report are as follows:

- Executive Summary
- Introduction with purpose and report organization
- Site background with site description, historical operations and features, and setting
- Conceptual site model / pathway receptor analysis
- Identification of preliminary cleanup levels
- Investigation summary describing sampling methods, data quality, and results for the soil, groundwater, stormwater, and sediment sampling
- Fate and transport discussion
- Summary and conclusion

- Figures, tables, and appendices with supporting information

The purpose of the feasibility study (FS) is to develop and evaluate cleanup action alternatives and to support the selection of a cleanup alternative that will be used to prepare the draft CAP. The FS approach is consistent with WAC 173-340-350.

4.1 ESTABLISHMENT OF PRELIMINARY CLEANUP LEVELS (PCLS)

Preliminary cleanup levels for soil and groundwater at the Site will be established based on the MTCA Cleanup Regulations (chapter 173-340 WAC).

- **Groundwater** – Because on-site groundwater is non-potable in accordance with WAC 173-340-720(2), groundwater PCLs are based on the most restrictive level between protection of marine and freshwater surface water. The Site is located within an estuary and may contain both freshwater and marine species. The most restrictive cleanup level between MTCA Method A (WAC 173-340-730[2]) and Method B (WAC 173-340-730[3]) was be used. If a PCL was not available from the aforementioned sources, then the most restrictive PCL between MTCA Method A (WAC 173-340-720[3]) and Method B (WAC 173-340-720[4]) for potable groundwater was used. PCLs for groundwater are presented in Attachment 2.
- **Soil** – Soil PCLs were calculated by selecting the most stringent value based on protection of human health (under a residential scenario), protection of terrestrial ecological receptors, and protection of groundwater. The most restrictive cleanup level between MTCA Method A (WAC 173-340-740[2]) and Method B (WAC 173-340-740[3]) for unrestricted land use was used. MTCA Cleanup Regulations, Priority Contaminants of Ecological Concern for Sites that Qualify for the Simplified TEE Procedure, Table 749-2 for unrestricted land use were used. The Simplified TEE cleanup levels were used for the RI; however, a Site Specific TEE may be conducted as part of the FS.

  Soil PCLs were calculated using Ecology's three phase partitioning model as described in WAC 173-340-747 to generate soil concentrations which are protective of surface water. The chemical physical parameters were obtained from the CLARC tables. In the event that the calculated PCLs were below the laboratory PQLs, the PCL defaulted to the laboratory PQL. PCLs for soil are presented in Attachment 2.
- **Sediment –** Sediment PCLs will be based on Sediment Quality Standards (SQS) and Cleanup Screening Levels (CSLs) identified in the Sediment Management Standards (SMS) (Chapter 173-204 WAC). Sediment PCLs will be outlined in the sediment SAP; the sediment SAP will be submitted under separate cover and will be included as Appendix B on the Final Draft version of this Work Plan.

The cleanup levels will consider all applicable pathways including direct contact (including inhalation), media transfer pathways (leaching to groundwater migration to surface water, etc.), and exposure to terrestrial and/or aquatic ecological receptors.

4.2 DELINEATION OF MEDIA REQUIRING REMEDIAL ACTION

The results from the RI investigation will be compared with the Site cleanup levels to determine the areas of soil, groundwater, and sediment that require remedial action. This evaluation will include the lateral and vertical extent of soil impacts (if any), the extent and potential migration pathways for impacts to groundwater (if any), and the extent of sediment impacts (if any). Areas requiring remedial action will be discussed with Ecology as part of the development of remedial action objectives for the Site (presented below).

4.3 DEVELOPMENT OF REMEDIAL ACTION OBJECTIVES

Remedial action objectives for the Site will be developed for the contaminants and media of interest following completion of the RI. The remedial action objectives will take into account exposure pathways and receptors, future land uses, and will establish acceptable contaminant levels or range of levels (at particular locations for each exposure route) by eliminating, reducing, or otherwise controlling risks posed through each exposure pathway and migration route.

4.4 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Applicable Local, State, and Federal Laws (WAC 173-340-710) states that cleanup actions conducted under MTCA shall comply with applicable state and federal laws. The code also addresses applicable relevant and appropriate requirements (ARARs), substantive (as opposed to procedural) requirements, and local government permits and approvals.

The RI/FS will be conducted under MTCA (WAC 173-340), which addresses identification and cleanup of contamination in soils, surface water, and groundwater. For contamination in sediments, MTCA refers to the Sediment Management Standards (SMS) (WAC 173-204), which includes standards for marine sediments.

The Feasibility Study will address regulations that are ARARs including the following:

- Federal Clean Water Act and National Toxics Rule [40 Code of Federal Regulations (CFR) 131], which provides water quality criteria (WQC) for protection of human health and aquatic organisms.
- Federal Safe Drinking Water Act (40 CFR 141), which provides maximum contaminant levels (MCLs) and maximum contaminant level goals (MCLG) for the protection of drinking water.
- Washington State Department of health rules for Public Water Supplies (WAC 246-290-310), which also provides MCLs.
- Water Pollution Control Act (FWPCA) Amendments of 1972, commonly referred to as the Clean Water Act (CWA) (33 USC §1251 et seq.)
- Water Quality Standards For Surface Waters of The State of Washington (173-201A WAC)
- The Endangered Species Act (ESA) of 1973, which protects plant and animal species that are listed by the federal government as “endangered” or “threatened,” as well as critical habitat necessary for the protection of these species (16 USC 1531-1543 and 50 CFR 10, 13, 17, 222, 226, 402, 424, and 450-453).

4.5 SCREENING OF CLEANUP ALTERNATIVES

The FS process will develop and screen remedial alternatives in accordance with WAC 173-340-360 and based on the risks identified in the RI. This process will result in a range of options that will be evaluated. This range of alternatives will include options in which treatment is used to reduce the toxicity, mobility, or volume of impacted material, but varying in the types of treatment, the amount treated, and the manner in which long-term residuals or untreated impacted material are managed; options involving the containment with little or no treatment; options involving both treatment and containment; and a no-action alternative.

Cleanup alternatives will be screened to meet the threshold requirements of WAC-173-340-160 and shall; comply with cleanup standards (WAC 173-340-700 through 173-340-760); comply with applicable state and federal laws; and provide for compliance monitoring, as applicable. Cleanup alternatives will be screened to be protective of human health and the environment and to take into account current and proposed future land uses. When selecting from cleanup action alternatives that fulfill the threshold requirements, the selected action shall use permanent solutions (as outlined in WAC 173-340-360[3]) to the maximum extent practicable, provide for a reasonable restoration time frame (as outlined in WAC 173-340-360[4]), and consider public concerns (as outlined in WAC 173-340-600).

4.6 EVALUATION OF CLEANUP ALTERNATIVES

The cleanup alternatives shall be evaluated on the basis of the requirements and the criteria specified in WAC 173-340-360.

4.7 EVALUATION OF HABITAT RESTORATION ALTERNATIVES

The RI/FS activities are being overseen by Ecology and work is being conducted under the Governor's Puget Sound Initiative. The Initiative focuses on cleaning up contamination as well as restoring the Puget Sound. The Site lies on an area of fill that extends into Port Gardner Bay. The Site is relatively flat, with a maximum elevation of approximately 15-feet above mean sea level. The western and southern edges of the Site are covered by riprap and logs which slopes moderately down toward the shoreline. The riparian zone is composed principally of blackberry with a few willow trees. A wooden sea wall extends along the northeastern shoreline of the Site.

While planning this cleanup and making cleanup decisions, Ecology and the Port will evaluate opportunities to perform remedial actions in a fashion that coincidentally enhances habitat. Elements of the remedial action will be evaluated for restoration opportunities in consultation with Ecology as plans for cleanup are developed. Potential restoration or enhancement alternatives may be achieved by removing environmental stressors at the Site. The work performed as part of the RI will provide sufficient data to allow for an evaluation of restoration alternatives, which will be conducted as part of the FS. The Port will consider specific habitat restoration alternatives as appropriate based on the findings in the RI/FS.

4.8 FEASIBILITY STUDY REPORT

A FS report will be prepared following completion of the RI. The FS report will be used to evaluate potential alternatives and a preferred alternative for the cleanup of the contamination present at and restoration of the Site. The alternatives evaluation and the preferred cleanup alternative will meet the requirements of WAC 173-340-360.

The general elements of the FS report are as follows:

- Introduction with purpose and report organization
- Description of material requiring remedial action
- Identification of remedial action objectives
- Summary of ARARs
- Site cleanup standards
- Screening and evaluation of cleanup alternatives
- Evaluation of habitat restoration alternatives
- Summary and conclusion

5. DRAFT CLEANUP ACTION PLAN

Upon approval of the final RI/FS report, the Port of Everett will prepare a draft CAP in accordance with WAC 173-340-380 that provides a proposed cleanup action to address the contamination present on the Site. The draft CAP will include the following:

- A general description of the proposed cleanup action (in accordance with WAC 173-340-350 through 173-340-390);
- A summary of the rationale for selecting the proposed action;
- A brief summary of other alternatives evaluated in the RI/FS;
- Cleanup standards and, where applicable, remediation levels, for each hazardous substance and for each medium of concern at the Site;
- The schedule for implementation of the CAP including, if known, restoration time frame;
- Institutional controls, if any, required as part of the proposed cleanup action;
- Applicable state and federal laws, if any, for the proposed cleanup action, when these are known at this step in the cleanup process (this does not preclude subsequent identification of applicable state and federal laws);
- A preliminary determination by the department that the proposed cleanup action will comply with WAC 173-340-360;
- Where the cleanup action involves on-site containment, specification of the types, levels, and amounts of hazardous substances remaining on-site and the measures that will be used to prevent migration and contact with those substances.

Cleanup actions which could potentially be considered in the draft CAP may include the following:

Alternative 1 – No action, in which no physical cleanup actions are initiated.

Alternative 2 – Monitored natural attenuation. Periodic Groundwater Monitoring, in which groundwater monitoring wells are sampled periodically to establish that impacted groundwater at the Site is stable and is not negatively affecting nearby surface water, potential receptors, habitat, or use.

Alternative 3 – Containment and Groundwater Monitoring, in which physical barriers are installed to restrict access to and movement of contaminated media. Groundwater monitoring would be conducted to establish that the containment of contaminated groundwater is successful.

Alternative 4 – Removal, in which contaminated media is excavated and removed from the Site.

Alternative 5 – Stabilization and/or chemical oxidation, in which hazardous constituents would be changed into immobile (insoluble) forms, bound in an immobile matrix, and/or bound in a matrix which minimizes the material surface exposed to weathering and leaching.

Other alternatives may be considered upon completion of the RI/FS report. Upon selection of the preferred cleanup alternative and completion of the draft CAP, the Port and Ecology will provide public notice and opportunity for comment on the draft CAP, as required in WAC 173-340-600(13).

5.1 PUBLIC PARTICIPATION /PLAN

Under MTCA, the public is guaranteed meaningful opportunities to learn and provide comment on important cleanup decisions before they are made. Ecology's goal is to encourage public understanding of and participation in the cleanup of sites through a variety of public information and public involvement activities. The requirements for public notice and participation are presented in WAC 173-340. Public involvement activities will be led by Ecology, with support from the Port. Ecology has provided SLR with a draft Public Participation Plan (PPP), dated August 2008. A copy of the draft PPP is included in Appendix E.

6. CLOSING

This Work Plan has been prepared to describe the proposed work scope for completing the RI/FS and draft CAP at the Site in accordance with the Agreed Order between the Port of Everett and Ecology. This Work Plan describes the environmental assessment work scope that will be performed to meet the Work Plan objectives and to comply with the Agreed Order. SLR, on behalf of the Port of Everett, is requesting Ecology's approval of this Work Plan.

FIGURE 1 SITE LOCATION MAP
FIGURE 2 SITE PLAN WITH HISTORICAL SITE FEATURES
FIGURE 3 SITE PLAN – EASTERN PORTION OF THE SITE
FIGURE 4 CONCEPTUAL SITE MODEL
FIGURE 5 PROPOSED UPLAND SAMPLING LOCATIONS
FIGURE 6 PROPOSED SEDIMENT SAMPLING LOCATIONS

REFERENCED FROM : USGS 7.5 MINUTE QUADRANGLE
EVERETT, WASHINGTON

SCALE: 1" = 1500'
WHEN PLOTTED AT 8.5" x 11" PAGE SIZE
0 1500 3000' 4500'

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

SLR

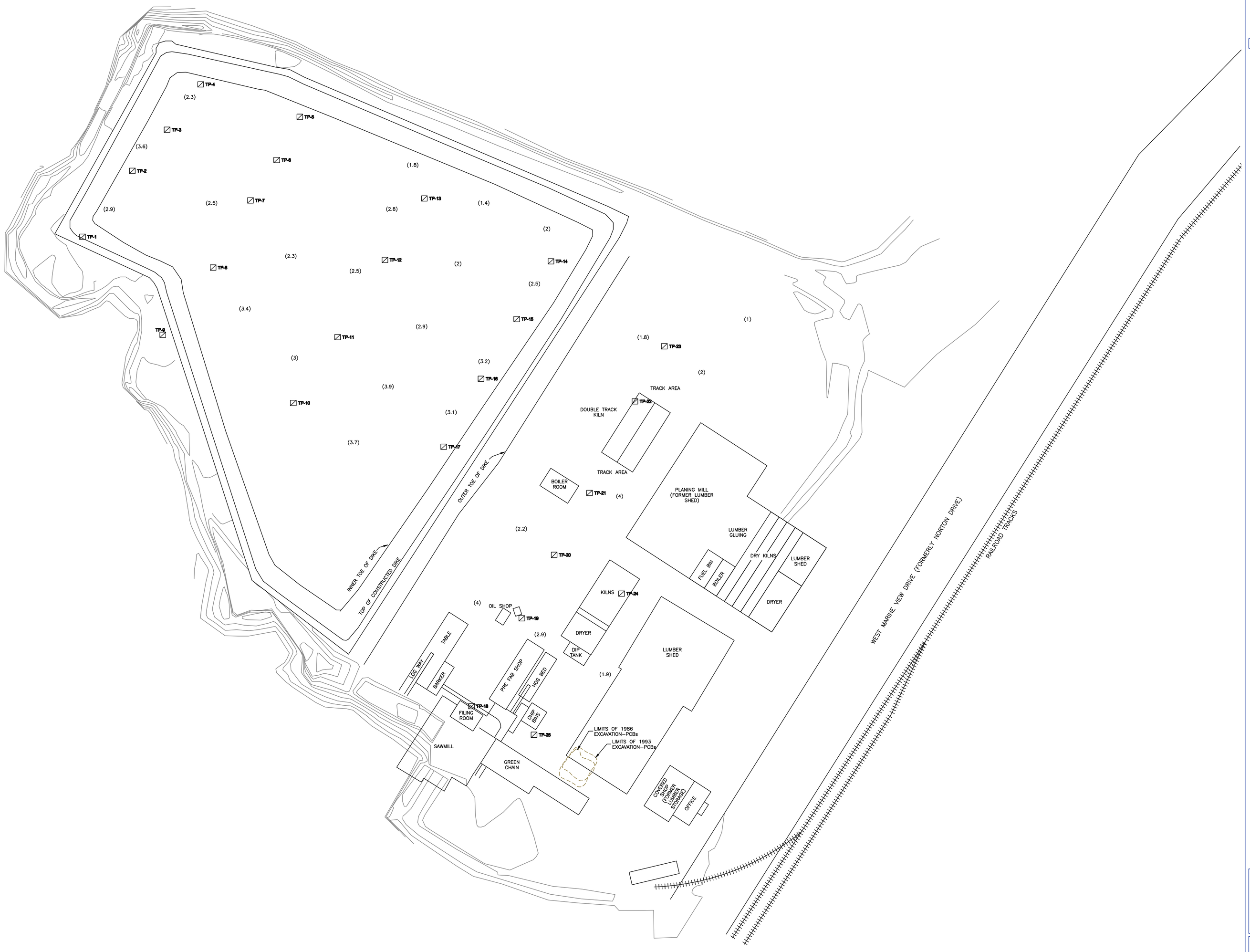
PORT OF EVERETT
BAY WOOD PRESTON POINT
EVERETT, WASHINGTON

Report
REMEDIAL INVESTIGATION WORK PLAN

Drawing
SITE LOCATION MAP

DRAFT

Date November 17, 2008	Scale AS SHOWN	Fig. No. 1
File Name 008.0339.00001-1	Project No. 008.0339.00001	



NOTES

DRAWING COMPILED FROM:

OCTOBER 1995 PRESTON POINT POST EVACUATION SURVEY COMPLETED BY REID MIDDLETON, LYNWOOD, WASHINGTON.

JANUARY 1, 1971 PUBLISHER FOREST PRODUCTS PLANT LAYOUT

VARIOUS SANBORN MAPS AND AERIAL PHOTOGRAPHS

LEGEND

☑ TP-12	TEST PITS LOCATIONS (LANDAU 1994)
(2.5)	DIFFERENCE IN ELEVATION IN FEET FROM 1995 POST EXCAVATION SURVEY AND 2005 FIELD SURVEY
	FORMER SITE STRUCTURES

SCALE: 1" = 60'
WHEN PLOTTED AT 24" x 36" PAGE SIZE
0 60 120 180'

PORT OF EVERETT
BAY WOOD PRESTON POINT
EVERETT, WASHINGTON

Report: **REMEDIAL INVESTIGATION WORK PLAN**

Drawing: **SITE PLAN WITH HISTORICAL SITE FEATURES**

DRAFT

Date: November 17, 2008	Scale: AS SHOWN	Fig. No. 2
File Name: 006.0339.00001 -3	Project No. 006.0339.00001	

SLR

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NOTES

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JANUARY 1, 1971 PUBLISHER FOREST PRODUCTS PLANT LAYOUT

VARIOUS SANBORN MAPS AND AERIAL PHOTOGRAPHS

LEGEND

- ● **N2** — SOIL SAMPLE
- • — SOIL WAS EXCAVATED FROM THESE AREA AFTER SAMPLING
- **TP-12** — TEST PITS (LANDAU 1994)
- FORMER SITE STRUCTURES

SCALE: 1" = 30'
WHEN PLOTTED AT 24" x 36" PAGE SIZE
0 30 60 90'

PORT OF EVERETT
BAY WOOD PRESTON POINT
EVERETT, WASHINGTON

Report
REMEDIAL INVESTIGATION WORK PLAN

Drawing
SITE PLAN- EASTERN PORTION OF THE SITE

DRAFT

Date	Scale	Fig. No.
November 17, 2008	AS SHOWN	3
File Name 006.0339.00001-3	Project No. 006.0339.00001	

SLR

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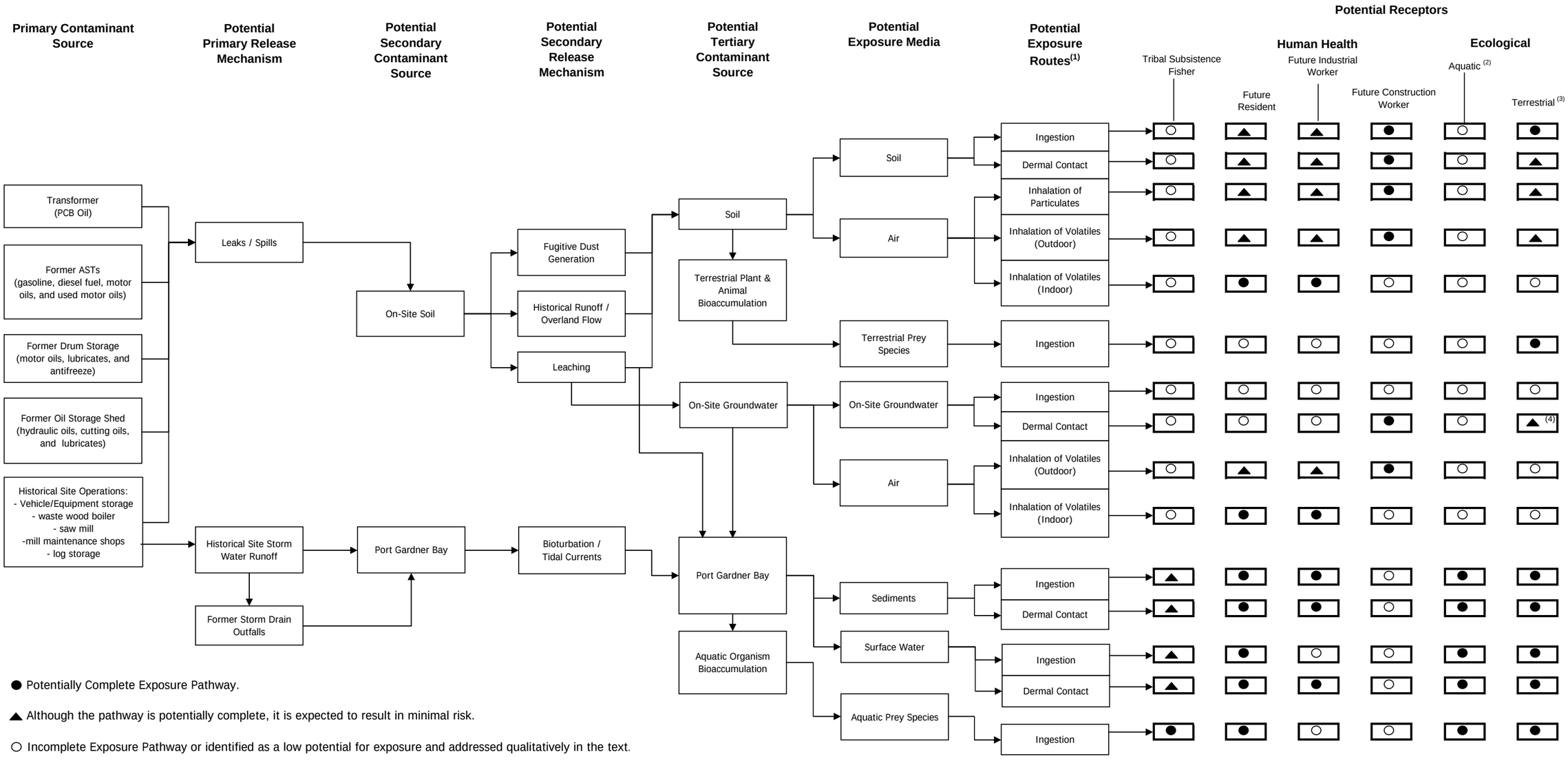
Figure 4: Conceptual Site Model
Bay Wood Products, Port of Everett
Everett, WA



● Potentially Complete Exposure Pathway.

▲ Although the pathway is potentially complete, it is expected to result in minimal risk.

○ Incomplete Exposure Pathway or identified as a low potential for exposure and addressed qualitatively in the text.

(1) Screening levels will be based on unrestricted land use and may not reflect all of the exposure routes that are complete. Screening levels will be based on the most restrictive exposure routes
(2) Aquatic ecological receptors may include mammals, birds, fish/shellfish, benthic invertebrates, reptiles, amphibians and aquatic vegetation.
(3) Terrestrial ecological receptors may include mammals, birds, reptiles, amphibians, invertebrates and terrestrial vegetation.
(4) This completed pathway is based on terrestrial vegetation (roots) coming into contact with groundwater.

NOTES

DRAWING COMPILED FROM:

OCTOBER 1995 PRESTON POINT POST EVACUATION SURVEY COMPLETED BY REID MIDDLETON, LYNWOOD, WASHINGTON.

JANUARY 1, 1971 PUBLISHER FOREST PRODUCTS PLANT LAYOUT

VARIOUS SANBORN MAPS AND AERIAL PHOTOGRAPHS

LEGEND

- ● N2 — SOIL SAMPLE
- • — SOIL WAS EXCAVATED FROM THESE AREA AFTER SAMPLING
- TP-12 — TEST PITS (LANDAU 1994)
- FORMER SITE STRUCTURES
- PB-4A — PROPOSED BORING LOCATION
  - PB–1A & PB–1B FORMER COVERED SHOP
  - PB–2A FORMER PCB TRANSFORMER AREA
  - PB–3A TO PB–3D FORMER MILL OPERATION AREA
  - PB–4A FORMER SURFACE STAINING
  - PB–5A & PB–5B FORMER DIP TANK
  - PB–6A FORMER OIL STORAGE SHED

SCALE: 1" = 30'
WHEN PLOTTED AT 24" x 36" PAGE SIZE
0 30 60 90'

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

PORT OF EVERETT
BAY WOOD PRESTON POINT
EVERETT, WASHINGTON

Report: **REMEDIAL INVESTIGATION WORK PLAN**

Drawing: **PROPOSED UPLAND SAMPLING LOCATIONS**

DRAFT

Date	Scale	Fig. No.
November 17, 2008	AS SHOWN	5
File Name: 006.0339.00001 -3	Project No.: 006.0339.00001	

SLR

TABLE 1 – SOIL ANALYTICAL SUMMARY TABLE – PCBS

TABLE 1 - Soil Analytical Summary Table
PCBs
Bay Wood Products
Everett, Washington

SOIL			Polychlorinated Biphenyls [B] (µg/kg)							
Sample Location	**Sample Depth (feet)**	**Sample Date**	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total
GeoEngineers 1993 Report [A]										
NW-1	0.5	9/17/1992	ND (<58)[C]	ND (<58)	ND (<58)	ND (<58)	ND (<58)	770	290	1,060
NE-1	0.5	9/17/1992	ND (<62)	ND (<62)	ND (<62)	ND (<62)	ND (<62)	440	310	750
SW-1	0.5	9/17/1992	ND (<51)	ND (<51)	ND (<51)	ND (<51)	ND (<51)	760	410	1,170
SE-1	0.5	9/17/1992	ND (<52)	ND (<52)	ND (<52)	ND (<52)	ND (<52)	690	490	1,180
NW-2	1.0	10/21/1992	ND (<40)	ND (<40)	ND (<40)	ND (<40)	ND (<40)	90	ND (<40)	90
SW-2	1.0	10/21/1992	ND (<37)	ND (<37)	ND (<37)	ND (<37)	ND (<37)	ND (<37)	ND (<37)	ND
SE-2	1.0	10/21/1992	ND (<37)	ND (<37)	ND (<37)	ND (<37)	ND (<37)	170	69	239
N-2	0.5	10/21/1992	ND (<42)	ND (<42)	ND (<42)	ND (<42)	ND (<42)	1,500	360	1,860
N-3	1.0	10/21/1992	ND (<39)	ND (<39)	ND (<39)	ND (<39)	ND (<39)	89	ND (<39)	89
S-2	0.5	10/21/1992	ND (<48)	ND (<48)	ND (<48)	ND (<48)	ND (<48)	1,700	620	2,320
S-3	1.0	10/21/1992	ND (<36)	ND (<36)	ND (<36)	ND (<36)	ND (<36)	470	ND (<36)	470
E-2	0.5	10/21/1992	ND (<44)	ND (<44)	ND (<44)	ND (<44)	ND (<44)	680	180	860
E-3	1.0	10/21/1992	ND (<37)	ND (<37)	ND (<37)	ND (<37)	ND (<37)	ND (<37)	ND (<37)	ND
W-2	0.5	10/21/1992	ND (<43)	ND (<43)	ND (<43)	ND (<43)	ND (<43)	960	310	1,270
W-3	1.0	10/21/1992	ND (<38)	ND (<38)	ND (<38)	ND (<38)	ND (<38)	160	54	214
N-4	Surface	12/28/1992	ND (<39)	ND (<39)	ND (<39)	ND (<39)	ND (<39)	490	ND (<39)	490
S-4	Surface	12/28/1992	ND (<37)	ND (<37)	ND (<37)	ND (<37)	ND (<37)	68	ND (<37)	68
W-4	Surface	12/28/1992	ND (<38)	ND (<38)	ND (<38)	ND (<38)	ND (<38)	76	ND (<38)	76
Preliminary Cleanup Levels[D] (PCLs)										
Preliminary Cleanup Levels			0.5[E]	0.5[E]	0.5[E]	0.5[E]	0.5[E]	0.5[E]	0.5[E]	0.5[E]

NOTES:

A - Analytical data from GeoEngineers Environmental Site Assessment and Remedial Excavation Monitoring Report - February 3, 1993

B - Polychlorinated Biphenyls(PCBs) per EPA Method 8080.

C - Not Detected (ND) at or above the laboratory detection limit of 58.0 µg/kg (micrograms per kilogram) - dry unit weight basis.

D - PCLs calculations presented in Attachment 2 of Work Plan

E - PCL for total PCBs

APPENDIX A

UPLAND SAMPLING AND ANALYSIS PLAN

APPENDIX A
UPLANDS
SAMPLING AND ANALYSIS PLAN

Port of Everett
Bay Wood Products Site
200 West Marine View Drive
Everett, Washington
Ecology No. 4438651

Prepared for

Port of Everett

December 2008

Prepared by

SLR International Corp
1800 Blankenship Rd; Suite 440
West Linn, Oregon 97068

Project 008.0339.00001

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- 1.2 Sampling and Analysis Plan Organization 1-1
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LIMITATIONS

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TABLE 3: RL AND PCL - SOILS - SVOC

TABLE 4: RL AND PCL - SOILS - VOC

TABLE 5: RL AND PCL - GW - TPH, PCB, DIOXIN/FURAN

TABLE 6: RL AND PCL - GW - SVOC

TABLE 7: RL AND PCL - GW - VOC

APPENDIX A - STANDARD SLR FIELD FORMS

ACRONYMS AND ABBREVIATIONS

ASTM	American Society for Testing and Materials
bgs	below ground surface
BNAs	semi-volatile organic compounds (sediment)
DQO	data quality objective
Ecology	Washington State Department of Ecology
GC/MS	gas chromatograph/mass spectrophotometer
GRO	gas range organics
HASP	health and safety plan
HCID	hydrocarbon identification
ICP	inductively coupled plasma-atomic emission spectroscopy
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
MLLW	Mean lower low water (datum)
MRLs	method reporting limits
MTCA	Model Toxics Control Act
MW	Monitoring well
NAPL	nonaqueous phase liquid
NAVD	North American Vertical Datum
NGVD	National Geodetic Vertical Datum of 1929
PCB	polychlorinated biphenyl
PCP	Pentachlorophenol
PPMETS	Priority pollutant metals, antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, zinc
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
RI	remedial investigation
RI/FS	remedial investigation/feasibility study
SAP	sampling and analysis plan
SVOC	Semi volatile organic compounds
TC	Toxicity Characteristic
TCLP	Toxicity Characteristic Leaching Procedure
TDS	total dissolved solids
TOC	total organic carbon

TSS	total suspended solids
TPH	total petroleum hydrocarbons
TPH-Gx	total petroleum hydrocarbons as gasoline
TPH-Dx	total petroleum hydrocarbons as diesel
TSS	total suspended solids
TVS	total volatile solids
VOA	volatile organic analysis
WAC	Washington Administrative Code

1 INTRODUCTION

1.1 Purpose

This uplands Sampling and Analysis Plan (uplands SAP) is being prepared as part of the Remedial Investigation (RI) for the former Port of Everett Bay Woods Product Site in Everett, Washington. This SAP is provided to identify the purpose and objectives of the uplands data collection in support of the work plan for remedial investigation/feasibility study (RI/FS) and draft Cleanup Action Plan (CAP) "Work Plan", specify field procedures, identify quality assurance (QA) procedures to be implemented during sampling activities and laboratory analyses, and to meet the requirements of WAC 173-340-820, Model Toxics Control Act (MTCA).

1.2 Sampling and Analysis Plan Organization

The Sampling and Analysis Plan is organized in three sections. A brief description of each section is presented below.

Section 1—Introduction. Section 1 contains an overview of the Uplands Sampling and Analysis Plan.

Section 2—Field Sampling Plan. Section 2 identifies the sampling locations and depths, and presents the procedures to be used in field sampling. Included are procedures for: soil sample and wood ash collection; groundwater sample collection, boring abandonment, water and product measurements, residuals management, sample splitting, sample labeling, shipping, and custody, and temporary well installation.

Section 3—Quality Assurance Project Plan. Section 3 identifies the project organization and includes QA procedures for field activities and laboratory analyses.

1.3 Project Organization and Responsibilities

Noted below are the responsibilities of key project personnel.

Larry Crawford, Project Coordinator for Port of Everett. Responsible for overseeing the implementation of the Agreed Order for the Port of Everett. Coordinates with the Department of Ecology (Ecology) and SLR International Corp (SLR). Provides oversight of program activities. Reviews project work scope, resource needs, and requests.

Isaac Standen, Project Coordinator for Ecology. Responsible for overseeing the implementation of the Agreed Order for Ecology. Coordinates with the Ecology and SLR. Provides oversight of all program activities. Reviews project work scope. Defines and coordinates Ecology resources.

Scott Miller, Project Coordinator, SLR. Provides technical oversight of all SLR project activities at the Site and senior review of all project activities. Oversees project performance and provides technical expertise to accomplish project objectives. Ensures that project tasks are successfully completed within the project time periods. Coordinates with the Port of Everett.

SLR Field Personnel. Geologists, scientists, engineers, and technicians are responsible for implementing the SAP.

Laboratories. Provide analytical support. Perform all required quality control analyses including analytical duplicates, blanks, and matrix spikes. Initiate and document required corrective action. Perform preliminary review of data for completeness, transcription, or analytical errors. Follow U.S. Environmental Protection Agency (EPA) guidelines and good laboratory practices. The project laboratory for the uplands sampling is Environmental Science Corp. (ESC) located in Mt. Juliet, Tennessee. Some of the soil and groundwater samples will be subcontracted by ESC to Analytical Resource, Inc. (ARI) and some samples will be subcontracted to Maxxam Analytics Inc. ARI is located in Tukwila, Washington and Maxxam is located in Burnaby, BC. ESC (Accreditation Number C1915), ARI (Accreditation Number C1235) and Maxxam (Accreditation Number C1192) are accredited by Ecology.

1.4 Remedial Investigation Schedule

The schedule for the uplands sampling that will be completed as part of the RI is presented in the Work Plan (Section 2). Any schedule modifications will be submitted for approval by SLR to the Ecology Project Coordinator.

2 FIELD SAMPLING PLAN

2.1 Sampling Needs and Objectives

The uplands RI sampling activities to be performed at the Site are intended to provide additional information to support site characterization and cleanup decision making. Sampling will supplement the initial results and previous testing conducted on the Site. Specific sampling objectives are as follows:

- Assessment of soil and groundwater in the vicinity of the former covered shop area attached to the former office building where ASTs and drums were previously stored.
- Perform additional assessment at the location of the transformer that contained PCB soil.
- Assessment of soil and groundwater near the former mill operation areas (boiler room(s), pre-fab shop, filing room).
- Assessment of soil and groundwater at the former surface stain area located in the former dry storage area.
- Assessment of soil and groundwater in the vicinity of the former wood treating dip tank.
- Assessment of soil and groundwater at the location of the former oil storage shed.

2.2 Sampling Locations, Types, Frequency, and Analyses

This section generally describes proposed sampling locations. Proposed sample locations are depicted in Figure 5 of the Work Plan. A summary of the proposed sampling areas, proposed sampling location labels, and the proposed analysis is summarized in Table 1 (attached). A description of the samples to be collected at each sampling location, the proposed frequency of sampling, and the analyses to be performed is also described in

this section. Sampling methods and sampling procedures are described in Section 2.3. Examples of field boring logs and sample Chain of Custody are included as Appendix B.

Potential contaminant migration pathways and specific areas of interest will be assessed to complete the site characterization. Potential pathways/areas, investigation rational, and proposed sampling is discussed in the following sections. The proposed sampling locations are shown on Figure 5. Proposed sample collection methods, sample handling, chain-of-custody procedures, sampling equipment, and decontamination procedures are presented in the sections below.

2.2.1 Former Covered Shop Attached to the Former Office Building

Two geoprobe borings (proposed borings PB-1A and PB-1B) will be advanced at the location of the former covered shop as shown on Figure 5. A total of two soil samples will be collected from the soil below the overlaying dredge fill from the Geoprobe borings (one from each boring location). The soil samples will be submitted for TPH-HCID (NWTPH methods) analysis with follow-up analysis for TPH-Dx and/or TPH-Gx, priority pollutant metals (PPMETS) using EPA 6000/7000 series methods, Polynuclear Aromatic Hydrocarbons (PAHs) by EPA method 8270, and volatile organic compounds (VOCs) by EPA method 8260 if the HCID shows the presence of this range of hydrocarbons in the sample. Groundwater grab samples will be collected from each of the two boring locations (PB1-A-GW and PB1-B-GW) and analyzed for TPH-HCID with follow-up analysis for TPH-Dx and/or TPH-Gx. The groundwater samples will also be submitted for PAH and VOC analysis. Groundwater samples from each boring will be collected and held by the laboratory for possible total metals analysis, pending the results of the metals analysis of soil. The proposed analytical testing is summarized on Table 1, attached.

2.2.2 Former PCB Transformer Area

One Geoprobe boring (PB-2A) will be advanced in the vicinity of the former transformer area. One soil sample will be collected from the soil below the dredge fill from the Geoprobe boring. The soil sample will be submitted for PCBs by EPA method 8082 and for TPH-HCID (NWTPH methods) analysis with follow-up analysis for TPH-Dx and/or TPH-Gx. A groundwater grab sample (PB-2A-GW) will be collected and analyzed for TPH-HCID with follow-up analysis for TPH-Dx and/or TPH-Gx. A groundwater sample will be collected and held by the laboratory for possible PCB analysis, pending the results of the PCB analysis of soil.

2.2.3 Former Mill Operation Areas

Four Geoprobe borings (PB-3A, PB-3B, PB-3C and PB-3D) will be advanced at the location of the former mill operations areas. PB-3A will be advanced at the location of the former boiler building identified in the 1957 and 1968 Sanborn maps. PB-3B will be advanced at the location of the boiler room building identified in the building department records. PB-3C will be advanced at the location of the former pre-fab shop attached to the former saw mill building. PB-3D will be advanced at the location of the former filing room that was also attached to the former saw mill building. These proposed sampling locations are shown on the Figure 5. A total of four soil samples will be collected from the soil below the dredge fill from the Geoprobe borings (one sample from each boring location). The soil samples will be submitted for TPH-HCID (NWTPH methods) analysis with follow-up analysis for TPH-Dx and/or TPH-Gx if the HCID shows the presence of this range of hydrocarbons in the sample. The soil samples will also be submitted for PCBs, priority pollutant metals (PPMETS) using EPA 6000/7000 series methods, and Polynuclear Aromatic Hydrocarbons (PAHs) by EPA method 8270. Groundwater grab samples will be collected from each of the four boring locations (PB-3A-GW, PB-3B-GW, PB-3C-GW, and PB-3D-GW) and analyzed for TPH-HCID with follow-up analysis for TPH-Dx and/or TPH-Gx. The groundwater samples will also be submitted for PPMETS, PAHs, and VOC analysis.

2.2.4 Former Surface Stain Area at Dry Storage

One Geoprobe boring (PB-4A) will be advanced at the location of the former dry storage area (lumber storage sheds). The proposed boring location is shown on Figure 5. One soil sample will be collected from the soil below the dredge fill from the Geoprobe boring. The soil sample will be submitted for TPH-HCID (NWTPH methods) analysis with follow-up analysis for TPH-Dx and/or TPH-Gx. The soil samples will also be submitted for PCBs, PPMETS, PAHs, and VOCs. A groundwater grab samples will be collected (PB-4A-GW) and analyzed for TPH-HCID with follow-up analysis for TPH-Dx and/or TPH-Gx. The groundwater samples will also be submitted for PPMETS, PAHs, and VOC analysis.

2.2.5 Former Dip Tank

Two Geoprobe borings (PB-5A and PB-5B) will be advanced in the southeastern portion of the Site, in the vicinity of the former dip tanks identified in a 1968 Sanborn map. One soil sample will be collected from the soil below the dredge fill from each of the two Geoprobe borings (two soil sample total). The soil samples will be submitted for TPH-HCID (NWTPH methods) analysis with follow-up analysis for TPH-Dx and/or TPH-Gx if the HCID shows the presence of this range of hydrocarbons in the sample. The two samples will be analyzed for metals, SVOCs

by EPA method 8270 (including pentachlorophenol [PCP]), and VOCs. The soil sample exhibiting the highest concentrations of impacts based on field screening methods and the TPH-HCID results will be analyzed for Dixon & Furans by EPA Method 1613B. Groundwater grab samples will be collected from each of the two boring locations (PB5-A-GW and PB-5B-GW) and analyzed for TPH-HCID with follow-up analysis for TPH-Dx and/or TPH-Gx. The groundwater samples will also be submitted for SVOC and VOC analysis. Groundwater samples from each boring will be collected and held by the laboratory for possible Dioxin & Furans analysis if the soil sample identifies Dioxin & Furans.

2.2.6 Former Oil Storage Shed

One geoprobe boring (proposed borings PB-6A) will be advanced at the location of the former oil storage shed as shown on Figure 5. One soil sample will be collected from the soil below the dredge fill from the Geoprobe boring. The soil sample will be submitted for TPH-HCID (NWTPH methods) analysis with follow-up analysis for TPH-Dx and/or TPH-Gx, PPMETS, PCBs, PAHs, and VOCs by EPA method 8260 if the HCID shows the presence of hydrocarbons in the sample. A groundwater grab samples will be collected from the boring (PB-6A-GW) and analyzed for TPH-HCID with follow-up analysis for TPH-Dx and/or TPH-Gx. The groundwater samples will also be submitted for PAH, PCBs, and VOC analysis. The groundwater sample will be held by the laboratory for possible total metals analysis, pending the results of the metals analysis of soil.

2.2.7 Field Quality Assurance Samples

Field QA will be maintained through compliance with the sampling plan, collection of field QA samples, and documentation of sampling plan alterations.

2.3 Sampling Methods and Procedures

This section generally describes the methods and procedures for fieldwork associated with the proposed soil and groundwater sampling.

2.3.1 Utility Location

A general check for underground utilities will be completed prior to the start of field activities. Underground utilities are not anticipated, however, boring locations may be moved due to underground or aboveground utilities. The field geologist/engineer may approve relocations within 25 feet of the original site and will notify the SLR project manager. Relocations greater than 25 feet from the original boring location will require approval by both the SLR project manager and the Port of Everett project manager before drilling commences.

2.3.2 Soil Sampling

Soil samples will be collected using the following general procedures:

A. All sampling equipment and reusable materials that will contact the sample will be decontaminated on site in accordance with procedures identified in Section 2.3.8. The field staff will use clean neoprene, nitrile, or vinyl gloves for handling each sample.

B. The sample container labels will be filled out and attached to the appropriate containers as described in Section 2.3.9.

C. Soil samples collected for chemical analysis will be transferred directly from the sampler into sample containers.

D. Laboratory provided glass jars will be filled for analyses at each sample interval, if sample volume permits. If the soil volume from a sampling interval does not adequately fill the soil jars, an additional sample will be collected from the depth interval immediately below it. Soil will be transferred directly from the stainless-steel bowl (composite samples), or from the sampling sleeve (Geoprobe samples) to the sample containers. The soil placed in the containers will be handled carefully to minimize disturbance of the soil. Each container will be filled as full as possible to minimize headspace.

E. A PID will be used to monitor each sample for volatile constituents after the sampler is first opened. The PID reading will be recorded on a Field Sampling Data Form or on a Boring Log Form (Section 3.4).

F. After filling the sample jars, the remaining sample will be logged on a Boring Log Form or a Field Sampling Data Form as described in Section 3.4. If free product contamination is observed in any sample interval, that sample will also be transferred into sample containers. For the purposes of this investigation, free product contamination is defined as a nonaqueous phase liquid that is adsorbed to the soil and is in soil pore spaces, causing staining, iridescent sheens, and an odor characteristic of petroleum or polycyclic aromatic hydrocarbons.

After being filled, the sample container(s) will be placed on ice in a cooler and handled as described in Section 2.3.9. The sample coolers will be sent to the laboratory within 36 hours of sampling.

Soil samples will be identified by the Geoprobe or surface soil sample location which they are collected. The prefix "GP-" will precede all Geoprobe boring numbers and the prefix “SS-” will precede all surface soil boring numbers (if any). Geoprobe soil samples and

surface soil samples will be numbered according to the top of the depth range sampled. For example, GP-1A-5 would denote a Geoprobe soil sample from the proposed boring (PB) location 1A collected from a depth of 5 feet bgs.

Geoprobe Soil Borings. The Geoprobe borings will be advanced using a truck-mounted, Geoprobe direct-push drilling rig. The Geoprobe rig will be equipped with nominal 2-foot-long or 4-foot-long, 2-inch-diameter probes fitted with acetate sampling sleeves. The Geoprobe borings will be advanced to approximately 15 feet bgs. As is discussed in Section 2.3.3 below, temporary well screens will be installed in each of the Geoprobe borings. Following sampling, the Geoprobe soil borings will be abandoned as described in Section 2.3.4.

Subsurface soil samples in the eleven Geoprobe borings will be collected continuously from the ground surface to the maximum explored depth of 15 feet bgs. Soil samples will be taken from the continuous core sample (contained within the plastic sample sleeve) by hand packing the soil into a clean glass jar supplied by the project laboratory. Lithologic descriptions of the sampled soil will be recorded on a Boring Log Form. Soil samples will be collected for chemical analyses.

Soil samples from each boring will be field screened for the presence of petroleum hydrocarbons and volatile organic compounds (VOCs) by using visual appearance, odors, and a photoionization detector (PID). The soil samples will be submitted for laboratory analysis based on the highest PID measurement or visual evidence of impacts. If there is no visual evidence of impact and the PID measurements are below detection limits, the sample will be collected from a depth just above the groundwater table as observed during the field work. Field equipment will be decontaminated according to the procedures outlined in Section 2.3.9 prior to moving to the next sampling location.

2.3.3 Groundwater Sampling Procedures

Geoprobe Borings. Groundwater samples will be collected from temporary well points installed in the Geoprobe borings. The temporary wells will be constructed of ¾ inch diameter PVC blank well casing and machine-slotted well screen. Groundwater samples will be collected using dedicated polyethylene tubing and a peristaltic pump. Approximately three well casing volumes will be purged prior to sampling. Conductivity, pH, and temperature will be monitored during the purging of groundwater from the temporary wells, and the groundwater samples will be collected once these parameters have stabilized. The groundwater samples will be transferred directly from the polyethylene tubing into the laboratory-provided sampling containers, stored on ice, and delivered to project laboratory for analyses. Groundwater samples will not be filtered prior to analysis. Development details, including discharge volume, discharge rate, development parameters, and appearance will be recorded on a Field Sampling Data Form. Development water will be handled as described in Section 2.11.1. After collecting the groundwater samples, the temporary wells will be abandoned as described in Section 2.3.6.

Groundwater samples collected from Geoprobe locations will be suffixed with "GW." For example, GP-1A-GW would denote a groundwater sample from the proposed Geoprobe location PB-1A.

2.3.4 Boring Abandonment

Boring abandonment will be conducted per the requirements of WAC 173-160-560. All soil borings will be abandoned by simultaneously adding bentonite chips to the boring while the probe, auger, or casing is removed. Bentonite chips placed above the water table will be hydrated with water. The abandoned borings will be sealed at the surface with concrete or gravel, depending on the surrounding surface material.

2.3.5 Residuals Management - Handling Procedures

All residual soil, water, product, and used decontamination solutions will be handled appropriately. Residual soil and water will be managed in accordance with all applicable local, state, and federal requirements, and in a manner consistent with *Guidance for Remediation of Petroleum Contaminated Soils* (Ecology, 1995). There are no specific Snohomish Health District requirements for storage of residual soil or water. Used disposable clothing and equipment will be handled as solid waste. Appropriate personal protective clothing will be worn during residuals transfers because of potential skin contact and splash hazards. The following residuals management procedures will be used:

- All soil generated during drilling will be containerized or stockpiled on-site. If possible, soil will be segregated to separate potentially contaminated soil from potentially uncontaminated soil. Soil disposition will be determined by the Port of Everett.

- Water generated from drilling, sampling, and decontamination will be kept separate, to the extent possible, from residual soil. Water will be placed in 55-gallon drums or tanks.

- Drums and tanks will be labeled with a label stating the drum contains investigation derived waste – pending analysis. The label will provide the site name, address, accumulation date, and contents (including approximate quantity).

- Drums and tanks will be sealed and secured daily. An on-site staging area for the accumulation of drums and tanks will be identified by the Port of Everett. Drums and tanks containing water will be stored in the designated temporary holding area as necessary until shipped off site.

- A record of all generated residuals that have been drummed, stockpiled, or otherwise stored will be maintained to expedite characterization and disposal upon completion of field activities.

- Disposable clothing and equipment will be placed in plastic bags and disposed of as solid waste.

- Port of Everett will be responsible for the proper disposal of all wastes. SLR will coordinate with the Port of Everett for appropriate disposal procedures.

2.3.6 Guidelines for Splitting Samples

If requested by Ecology, the Port of Everett's on-site representative will provide for the collection of split or replicate samples. The following sample splitting procedures will be followed:

- Samples will be collected as described above.

- If sufficient sample is available in the Geoprobe or auger barrel from which the Port of Everett's representative is collecting a sample, then either Ecology (or representative) or the Port of Everett's representative will collect a split sample concurrently.

- If insufficient sample is available in the Geoprobe or auger barrel from which the Port of Everett's representative is collecting a sample, then an additional split spoon

drive soil sample will be collected in the same sampling interval, if desired by Ecology, or immediately below the Port of Everett sampling interval.

2.3.7 Decontamination Procedures

A decontamination area will be established for cleaning the drilling rig and well materials. All down-hole drilling equipment and the working area of the drill rig will be steam-cleaned or hot water pressure-washed prior to beginning drilling and between drilling each boring. Hand tool equipment, split-spoon samplers, spoons, bowls, and other sampling equipment that will contact samples will be decontaminated prior to initial use, between sampling locations, and between different sampling depths at the same location. Soil, groundwater, and surface water sampling equipment will be decontaminated by following procedure:

- Tap water rinse
- Alcohol rinse (if equipment visibly stained with product)
- Tap water rinse
- Nonphosphatic detergent and tap water wash
- Tap water rinse
- Second alcohol rinse (if equipment visibly stained with product)
- Tap water rinse
- Distilled water rinse

The electric well probe and oil/water interface probe will be rinsed with alcohol and distilled water between uses in different monitoring wells. All labels and binding tape will be removed from well materials prior to steam cleaning or washing. New sampling tubing will be used at each well.

Decontamination of personnel involved in sampling activities will be accomplished as described in the site Health and Safety Plan.

2.3.8 Sample Labeling, Shipping, and Chain-of-Custody

Sample Labeling. Sample container labels will be completed immediately before or immediately after sample collection. Container labels will include the following information:

- Project name

- Sample number (including sample depth, if applicable)
- Name of collector
- Date and time of collection

Sample Shipping. Soil and water samples will be shipped to the selected analytical laboratory as follows:

- Sample containers will be transported in a sealed, iced cooler.

- In each shipping container, glass bottles will be separated by a shock-absorbing and absorbent material to prevent breakage and leakage.

- Ice or "blue ice," sealed in separate plastic bags, will be placed into each shipping container with the samples.

- All sample shipments will be accompanied by a Chain-of-Custody Form. The completed form will be sealed in a plastic bag and taped to the inside lid of the shipping container.

- Signed and dated chain-of-custody seals will be placed on all shipping containers, unless samples will be picked up at the site by the laboratory.

- The analytical laboratory's name and address and SLR's name and office (return) address will be placed on each shipping container prior to shipping.

Chain-of-Custody. Once a sample is collected, it will remain in the custody of the sampler or other SLR personnel until shipment to the laboratory. Upon transfer of sample containers to subsequent custodians, a Chain-of-Custody/Analysis Request Form will be signed by the persons transferring custody of the sample container. A signed and dated chain-of-custody seal will be placed on each shipping container prior to shipping.

Upon receipt of samples at the laboratory, the shipping container seal will be broken, and the condition of the samples will be recorded by the receiver. Chain-of-custody records will be included in the analytical report prepared by the laboratory.

3 QUALITY ASSURANCE PROJECT PLAN

3.1 Introduction

The purpose of this Quality Assurance Project Plan (QAPP) is to present the quality assurance and quality control activities developed for the SAP. This QAPP covers the soil and groundwater sampling work to be undertaken by SLR International Corp during this investigation.

3.1.1 Project Organization

Primary responsibility for project quality rests with SLR International Corp project Coordinator, Mr. Scott Miller. The PM will review all project deliverables before submittal to Ecology or other appropriate regulatory agency. Where quality assurance problems or deficiencies are observed, the PM will identify the appropriate corrective action to be initiated.

3.1.2 Data Quality Objectives

This section presents the data quality objectives (DQO's) for the Remedial Investigation. This environmental assessment is being conducted to help ensure that data of sufficient quality and quantity will be available to identify if hazardous compounds are present at the Site and to evaluate risks posed by the presence of hazardous compounds in the soil and groundwater at the Site. Information is needed to identify if hazardous compounds associated with historical industrial activities have entered the subsurface and if these compounds, and the previously identified compounds, may pose unacceptable risk to current and future human and ecological receptors via direct contact or migration.

The data collected during the environmental assessment and the previously completed site assessments will be used to assess whether Site related contaminants of interest (COIs) may result in unacceptable risk to human and/or ecological receptors (current or likely future).

The numbers of sampling locations, sampling depths, types of samples, and types of analysis have been selected to meet the DQOs. The sampling proposed in this work plan

represents the minimum sampling required to meet the DQOs. If observations made during the field work indicate a release of chemicals in an assessment area, additional sampling may be completed in that area to help assess the extent of the chemical release in soil and groundwater. These DQOs will be applied to facilitate data adequacy reviews and identify data gaps. Additionally, the DQOs will be used to identify the analytical practical quantification limit (PQL) and to establish other quality assurance goals with the QAPP and the SAP. The PQL is defined as the lowest levels which can be routinely quantified and reported by a laboratory. Thresholds for PQLs from WAC 173-340-707 include that the PQL may be no greater than ten times the laboratory method detection limit (MDL); or that the PQL for a hazardous substance, medium and analytical procedure may be no greater than the PQL established by the US EPA and used in 40 CFR 136, 40 CFR 141 through 143, or 40 CFR through 270. An important DQO for this project is to obtain appropriate quantitation limits and to meet the requirements of WAC 173-340-820, MTCA. The PQLs for the proposed soil and groundwater sample analysis at the Bay Wood Products Site are presented in Work Plan Attachment 2. The Preliminary Cleanup Levels (PCLs) for the Site have been calculated in accordance with MTCA Cleanup Regulation, Chapter 173-340 WAC, as is described in the Work Plan (Section 4.1). As is shown in the tables, the calculated PCLs for some analytes are lower than the PQLs which can be achieved by the laboratory. In these instances the PCL has defaulted to the laboratory PQL. When necessary to meet the PCL, PAHs will be analyzed by EPA Method 8270 SIM SS, which will result in a lower PQL.

3.2 Data Quality Assurance Objectives

The applicable data quality assurance objectives are dictated by the intended use of the data and the nature of the analytical methods. The accuracy, precision, representativeness, completeness, and comparability data quality assurance objectives are explained below.

3.2.1 Accuracy

Accuracy is the agreement between the measured value and the true value. Accuracy can be expressed as the difference between two values or the difference as a percentage of the reference or true value (ratio). Accuracy depends on the magnitude of the systematic (bias) and random (precision) errors in the measurement. Bias due to sample matrix effects will be assessed by spiking samples with known standards and calculating the recovery of the standards.

3.2.2 Precision

Precision is a measurement of mutual agreement among individual measurements of the same property under prescribed similar conditions. It is expressed in terms of the standard deviation or relative percent difference (RPD). Precision is determined through laboratory quality control parameters such as surrogate recoveries, matrix spikes, or

quality control check samples. Separate field control samples will not be collected for this scope of work. Quality control objectives for surrogate recovery, percent recovery, and RPD for matrix spikes will be those currently established by the testing laboratory.

3.2.3 Representativeness

Representativeness is a measure of how closely the measured results reflect the actual concentration or distribution of chemical compounds in the media sampled. Sampling plan design, sampling techniques, and sample handling protocols are included in the SAP to ensure that samples collected are representative of site conditions within the limitations of the collection technologies. Sampling locations were selected based on their representativeness in further assessing the extent of contamination is soil and groundwater at the site. This documentation establishes protocols for assurance of sample identification and integrity.

3.2.4 Completeness

Completeness is a measure of the amount of valid data obtained from the analytical system compared to the total data collected. The completeness of the data will be assessed during quality control reviews. Audits, internal control checks, and preventative maintenance will be implemented to help maintain the above quality assurance objectives.

3.2.5 Comparability

Comparability expresses the confidence with which one data set can be compared to another. Data comparability will be ensured by monitoring the control of sample collection, analytical methods, and data recording. Comparability of laboratory and field data will be maintained by using EPA-defined procedures, where available. Data comparability will be maintained by use of consistent methods and units. The laboratory predicted method detection limits (MDL) and method reporting limits (MRL) for the proposed sampling protocol are included as Attachment 1 to this document. Actual detection limits will depend on the sample matrix and will be reported as defined for the specific samples.

3.3 Field Data Quality Assurance Objectives

This QAPP also presents the field data quality assurance objectives for the ESA at the Bay Wood Products Site. The field data quality assurance objectives include field measurements and observations, field equipment calibration, chain-of-custody procedures, and sample handling procedures.

3.3.1 Field Measurement and Observation

Field measurements and observations will be recorded in the project log notes. Sufficient information will be recorded so that all field activities can be reconstructed without reliance on personnel memory. Entries will be recorded directly in waterproof ink and legibly and will be signed and dated by the person conducting the work. If changes are made, the changes will not obscure the previous entry, and the changes will be signed and dated. At a minimum, the following data will be recorded:

- Location of activity
- Description of sampling reference point(s)
- Date and time of any activity
- Sample number and volume or number of containers
- Field measurements made
- Calibration records for field instruments
- Relevant comments regarding field activities
- Signatures of responsible personnel

3.3.2 Field Instrument Calibration

The field instruments to be used during field activities will be calibrated at the beginning and as required according to manufacturers' specifications. Calibration records will be recorded in the project log notes including date, project number, instrument make and model, and instrument response to calibration.

3.3.3 Chain-of-Custody Procedures

The management of samples collected in the field will follow specific procedures to ensure sample integrity. To ensure sample integrity, the samples will be handled by as few people as possible and the sample collector will be responsible for the care and custody of the samples. Sample possession will be tracked from collection to analysis. Each time the samples are transferred between parties, both the sender and receiver will sign and date the chain-of-custody form and specify what samples have been transferred. When a sample shipment is sent to the laboratory, the original form will be placed with the samples and transmitted to the laboratory. A copy of the form will be retained in the project files. A chain-of-custody record will be completed for each batch of samples hand delivered or shipped to the laboratory.

The following information will be included on the chain-of-custody form:

- Sample number
- Sampler signature
- Sample collection date and time
- Place of collection
- Sample type
- Inclusive dates of possession
- Signature of sender and receiver

In addition to the chain-of-custody form, other components of sample tracking will include the sample labels and seals, field logs, sample shipment receipt, and laboratory log book. The sample labels and seals will include the following information:

- Project name and number
- Name of sampler
- Date and time of sample collection
- Sample location and number
- Analysis required
- Preservation

3.3.4 Sample Handling Procedures

Sampling plan design, sampling techniques, sampling location, and sample handling protocols are included in the SAP to ensure that samples collected are representative of site conditions within the limitations of the collection technologies.

The following table summarizes the soil sample handling requirements:

Analysis	Sample Container	Container Size	Preservation and Handling	Holding Times
Total Petroleum Hydrocarbon - Diesel (TPH-Dx)	Glass Jar	4 oz	Fill jar leaving minimal air space; keep in dark; cool to 4°C	14 days
Total Petroleum Hydrocarbon - Gasoline (TPH-Gx)	--	--	Taken from 8260/5035 methanol vial	14 days
Priority Pollutant Metals	Glass Jar	4 oz	Fill jar leaving minimal air space; keep in dark; cool to 4°C	14 days
Polychlorinated Biphenyl (PCB)	Glass Jar	4 oz	Fill jar leaving minimal air space; keep in dark; cool to 4°C	14 days

Analysis	Sample Container	Container Size	Preservation and Handling	Holding Times
Volatile Organic Analysis (VOA)	Voa vial	3 Voa vials	1-Methanol and 2-Sodium Bisulfate; keep in dark; cool to 4°C	14 days
Semi-Volatile Organic Compounds	Glass Jar	4 oz	Fill jar leaving minimal air space; keep in dark; cool to 4°C	14 days
Pentachlorophenol (PCP)	Glass Jar	4 oz	Fill jar leaving minimal air space; keep in dark; cool to 4°C	14 days
Dioxins & Furans	Glass Jar	8 oz	Fill jar leaving minimal air space; keep in dark; cool to 4°C	30 days

The following table summarizes the groundwater sample handling requirements:

Analysis	Sample Container	Container Size	Preservation and Handling	Holding Times
Total Petroleum Hydrocarbon - Diesel (TPH-Dx)	Amber Glass Bottle	1 Liter	Fill bottle leaving no air space; keep in dark; cool to 4°C; HCL to pH<2	7 days
Total Petroleum Hydrocarbon - Gasoline (TPH-Gx)	Voa Vial	3 Voa Vials	Fill bottle leaving no air space; keep in dark; cool to 4°C; HCL to pH<2	14 days
Priority Pollutant Metals	Plastic Bottle	500 mL	Fill bottle leaving no air space; keep in dark; cool to 4°C; HNO_3 to pH<2	6 Months
Polychlorinated Biphenyl (PCB)	Amber Glass Bottle	1 Liter	Fill bottle leaving no air space; keep in dark; cool to 4°C	7 days
Volatile Organic Analysis (VOA)	Voa Vial	3 Voa Vials	Fill vial leaving no air space; keep in dark; cool to 4°C; HCL to pH<2	14 days
Semi-Volatile Organic Compounds (BNA)	Amber Glass Bottle	1 Liter	Fill bottle leaving no air space; keep in dark; cool to 4°C	7 days
Pentachlorophenol (PCP)	Amber Glass Bottle	1 Liter	Fill bottle leaving no air space; keep in dark; cool to 4°C	7 days
Dioxins & Furans	Plastic Bottle	Two -1 Liter	Fill bottle leaving no air space; keep in dark; cool to 4°C	30 days

3.4 Quality Control

Quality control checks consist of measurements and tests performed in the field and laboratory. The analytical methods that will be performed as a part of this project have routine quality control checks performed to evaluate the precision and accuracy, and to determine whether the data are within the quality control limits.

3.4.1 Laboratory Quality Control Methods

Specific procedures and frequencies for laboratory quality control are detailed by the analytical method in the laboratory's Quality Assurance Plan. A general description of the types of laboratory quality control samples is as follows:

- **Method Blanks –** A minimum of one laboratory method blank will be analyzed per twenty samples or one per batch (whichever is greater) to assess possible laboratory contamination. Method blanks will contain all reagents and undergo all procedural steps used for analysis.
- **Control Samples –** A minimum of one laboratory control sample per twenty samples or one per batch (whichever is greater) will be analyzed for inorganics to verify the precision of the laboratory equipment. The control sample will be at a concentration within the calibration range, but at a different concentration than the standards used to establish the calibration curve.
- **Matrix Spike -** A minimum of one laboratory matrix spike sample will be analyzed per twenty samples or one per batch (whichever is greater) to monitor recoveries and assure that extraction and concentration levels are acceptable for quality assurance and quality control review. The laboratory matrix spike will be analyzed on a separate groundwater sample collected from one of the wells.

3.5 Data Management

This section addresses issues related to data sources, data processing, and data evaluation. Raw data generated in the field or received from analytical laboratories will be validated, entered into a computerized database, and verified for consistency and correctness.

3.5.1 Field Data Management

Accurate documentation of field activities (e.g., field parameters measurements, field notes) will be maintained using field log-books and field data forms. Entries will be made in sufficient detail to provide an accurate record of field activities without reliance on memory.

Field log entries will be dated and include a chronological description of task activities, names of individuals present, names of visitors, weather conditions, etc. All entries will be legibly entered in ink and initialed. A record of drilling, including the boring name and location, sampling intervals, sample names, and lithologic and field screening observations, will be included on a boring log.

Copies of standard SLR field forms are included in Appendix B.

3.5.2 Analytical Data Management

Following validation, all analytical data will be entered into a computerized database. The data may require some manipulation, such as common unit conversions and extraction from support information. To accomplish these manipulations, data reduction and tabulation techniques will be applied to the data and documented.

Several different tabular reports will be generated from the database. All analytical, locational, and tracking data will be stored in the database. Data reports for each type of analysis will be generated to produce standard reports.

All data validation, document control, and locational and analytical information generated by this project will be entered, stored, and generated by PC-compatible machines. Standardized software products will be used.

The volume of digital data anticipated on this project may be accommodated on a single PC work station. Project data backups will be made on a weekly basis or whenever major additions or modifications have been made to the various data management systems. Access to the database will be limited to the data manager and the authorized project personnel.

3.5.3 Sample Management

The sample management system forms the foundation of all other analytical data collection, verification, and validation tasks. Analytical data cannot be considered valid unless all the proper steps have been carried out with respect to sample management. These include:

- Sample properly documented in daily field log
- Chain-of-custody requirements met
- All sample-related documents filed
- Use of unique sample identification numbers

Data that do not pass the validation process either will be assigned data qualifiers to restrict or modify usage, or will be rejected for use. Modifications to the use of data will be documented in data validation reports.

3.5.4 Data Reporting Requirements

Quality assured data will be submitted to Ecology electronically in Environmental Information Management System (EIM) format. The electronic data will be verified to be compatible with EIM prior to delivery to Ecology.

TABLES

TABLE 1: UPLANDS ANALYTICAL SUMMARY TABLE

TABLE 2: PQL AND PCL - GW – SVOCS AND PAHS

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TABLE 4: PQL AND PCL - GW - VOCS

TABLE 5: PQL AND PCL - SOIL - VOCS

TABLE 6: PQL AND PCL – GW – METALS, PCBS, TPH, AND DIOXIN & FURANS

TABLE 7: PQL AND PCL - SOIL - METALS, PCBS, TPH, AND DIOXIN & FURANS

Upland SAP Table 1
Summary Analytical Table
Bay Wood Products Site, Port of Everett
Everett, Washington

Area	Proposed RI Sampling	Matrix	TPH-HCID	TPH-Dx	TPH-Gx	PPMETS Metals	PCBs	PAHs	SVOCs	Dioxins & Furans	VOC
Former Covered Shop Attached to the Former Office Building	2 Geoprobe Borings for soil and groundwater sampling (Locations PB-1A and PB-1B) Figure 5	Soil	2	2(1)	2(1)	2		2			2
		Water	2	2(1)	2(1)			2			2
Former PCB Transformer Area	1 Geoprobe boring for soil and groundwater sampling (Locations PB-2A) Figure 5	Soil	1	1(1)	1(1)		1				
		Water	1	1(1)	1(1)		1(2)				
Former Mill Operation Areas	Four Geoprobe Borings for soil and groundwater sampling (Locations PB-3A through PB-3D) Figure 5	Soil	4	4(1)	4(1)	4	4	4			
		Water	4	4(1)	4(1)	4		4			4
Former Surface Stain Area at Dry Storage	1 Geoprobe boring for soil and groundwater sampling (Locations PB-4A) Figure 5	Soil	1	1(1)	1(1)	1	1	1			1
		Water	1	1(1)	1(1)	1		1			1
Former Dip Tank Area	2 Geoprobe borings for soil and groundwater sampling (Locations PB-5A and PB-5B) Figure 5	Soil	1	1(1)	1(1)				1	1	1
		Water	1	1(1)	1(1)				1	1(3)	1
Former Oil Storage Shed	1 Geoprobe boring for soil and groundwater sampling (Location PB-6A) Figure 5	Soil	1	1(1)	1(1)	1	1	1			1
		Water	1	1(1)	1(1)		1	1			1

Notes:
(1) - Run analysis only if TPH is detected in this range by the TPH-HCID analysis

(2) - Run only if PCBs are found in the soil sample.

(3) - Run only if Dioxins & Furans are found in the soil sample.

TPH-Dx- Total Petroleum Hydrocarbons Diesel Range (Ecology Method NWTPH-Dx)

TPH-Gx- Total Petroleum Hydrocarbons Gasoline Range (Ecology Method NWTPH-Gx)

Metals: Arsenic, Cadmium, Total Chromium, Chromium VI, Copper, Lead, Nickel, Selenium, and Zinc (EPA Method 6010B), Mercury- Mercury Cold Vapor Atomic Absorption (EPA Method 7471A)

SVOCs and PAHs - EPA Method 8270C

VOA - Volatile Organic Analysis (EPA Method 8260)

Upland SAP Table 2
Groundwater PQLs and PCLs
SVOCs and PAHs
Bay Wood Products Site, Port of Everett
Everett, WA

Analyte	Laboratory MDL [A] (µg/L)	Laboratory PQL [B] (µg/L)	Selected PCL [C] (µg/L)
Semivolatile Organic Compounds [D] (SVOCs)			
acenaphthylene	0.874	10	10
acetophenone	0.107	1	800
atrazine	0.909	1	1
benzaldehyde	1.36	10	800
biphenyl; 1,1-	0.422	1	400
bis(2-chloroethyl)ether	0.146	1	1
bis(2-chloroethoxy) methane	0.129	1	1
bis(2-chloroisopropyl) ether	0.24	1	1,400
bis(2-chloro-1-methylethyl)ether	0.24	1	37
bis(2-ethylhexyl) phthalate	0.162	1	1.2
bromophenyl-phenylether; 4-	0.059	1	1
butyl benzyl phthalate	0.173	1	1,300
caprolactam	0.259	10	8,000
carbazole	0.079	1	4.4
chloro-3-methylphenol;4-	0.116	1	1
chloroaniline;4-	0.191	1	32
chlorophenol;2-	0.109	1	97
chloronaphthalene;2-	0.106	1	1,000
chlorophenyl-phenyl ether;4-	0.097	1	1
dibenzofuran	0.081	1	32
dichlorobenzidine;3,3-	0.221	1	1
dichlorophenol;2,4-	0.101	1	77
diethyl phthalate	0.128	1	17,000
dimethyl phthalate	0.176	1	72,000
dimethylphenol;2,4-	2.97	10	380
di-n-butylphthalate	0.129	1	2,000
di-n-octylphthalate	0.189	1	320
dinitro-2-methylphenol: 4,6-	2.36	10	10
dinitrophenol;2,4-	2.03	10	69
dinitrotoluene;2,4-	1.63	10	10
dinitrotoluene;2,6-	1.27	10	16
hexachlorobenzene	0.126	1	1
hexachlorobutadiene	0.151	1	1
hexachlorocyclopentadiene	2.13	10	40
hexachloroethane	0.191	1	1.4
isophorone	0.141	1	8.4
methylnaphthalene; 2	0.116	1	32
methylphenol;2-	1.71	10	400
methylphenol;4-	0.958	10	40
nitroaniline;2-	1.68	10	10
nitroaniline;3-	1.36	10	10
nitroaniline;4-	0.126	1	1
nitrobenzene	0.128	1	17
nitrophenol;2-	3.14	10	10
nitrophenol;4-	0.823	10	10
nitrosodiphenylamine; N-	0.087	1	3.3
nitroso-di-n-propylamine;N-	0.127	1	1
pentachlorophenol	2.18	10	10
phenol	0.686	10	21,000
tetrachlorobenzene;1,2,4,5-	0.127	1	1
tetrachlorophenol;2,3,4,6-	1.19	10	480
trichlorophenol;2,4,5-	0.171	1	1,800
trichlorophenol;2,4,6-	0.111	1	1.4

Upland SAP Table 2
Groundwater PQLs and PCLs
SVOCs and PAHs
Bay Wood Products Site, Port of Everett
Everett, WA

Analyte	Laboratory MDL [A] (µg/L)	Laboratory PQL [B] (µg/L)	Selected PCL [C] (µg/L)
Carcinogenic Polycyclic Aromatic Compounds(cPAHs) [E]			
benzo[a]anthracene	0.624	0.1	0.1
benzo[a]pyrene	0.137	0.1	0.1
benzo[b]fluoranthene	0.16	0.1	0.1
benzo[k]fluoranthene	0.115	0.1	0.1
chrysene	0.102	0.1	0.1
dibenzo[a,h]anthracene	0.17	0.1	0.1
indeno[1,2,3-cd]pyrene	0.138	0.1	0.1
Non-Carcinogenic PAHs (PAHs) [E]			
acenaphthene	0.114	0.1	640
anthracene	0.623	0.1	8,300
benzo[ghi]perylene [F]	0.105	0.1	830
fluoranthene	0.834	0.1	90
fluorene	0.076	0.1	1,100
naphthalene	0.105	0.1	4,900
phenanthrene [G]	0.082	0.1	640
pyrene	1.19	0.1	830

Notes:

A - Method Detection Limit (MDL) from Environmental Sciences Corp environmental laboratory

B - Practical Quantitation Limit (PQL) from Environmental Sciences Corp environmental laboratory

C - Groundwater Preliminary Cleanup Levels (PCLs) calculated as shown in Attachment 2 of Work Plan

D - SVOCs per EPA Method 8270C

E- cPAHs and PAHs will be analyzed per 8270 SIM (low level)

F - Toxicity information is not available for benzo(ghi)perylene. Pyrene has been used as surrogate

G - Toxicity information is not available for phenanthrene. Anthracene has been used as surrogate

Upland SAP Table 3
Soil PQLs and PCLs
SVOCs and PAHs
Bay Wood Products Site, Port of Everett
Everett, WA

Analyte	Laboratory MDL [A] (mg/kg)	Laboratory PQL [B] (mg/kg)	Selected PCLs [C] (mg/kg)
Semivolatile Organic Compounds (SVOCs) [D]			
acenaphthylene	0.02844	0.33	0.33
acetophenone	0.11	0.33	8,000
atrazine	0.11	0.33	4.5
benzaldehyde	0.11	0.33	8,000
biphenyl;1,1'-	0.11	0.33	4,000
bis(2-chloroethyl)ether	0.0285	0.33	0.33
bis(2-chloroethoxy) methane	0.03208	0.33	0.33
bis(2-chloroisopropyl)ether	0.03286	0.33	3200
bis(2-chloro-1-methylethyl)ether	0.03286	0.33	14
bis(2-ethylhexyl) phthalate	0.06007	0.33	2.64
p-Bromodiphenyl ether	0.02218	0.33	0.33
butylbenzylphthalate	0.03829	0.33	369
caprolactam	0.11	0.33	40,000
carbazole	0.02861	0.33	0.33
chloro-3-methylphenol;4-	0.03364	0.33	0.33
chloroaniline;4-	0.03626	0.33	0.33
chlorophenol;2-	0.031	0.33	1.15
chloronaphthalene;2-	0.02552	0.33	6,400
chlorophenyl-phenyl ether; 4-	0.02526	0.33	0.33
dibenzofuran	0.02172	0.33	160
dichlorobenzidine;3,3-	0.03062	0.33	0.33
dichlorophenol;2,4-	0.02442	0.33	0.54
diethyl phthalate	0.04057	0.33	95.9
Dimethyl phthalate	0.02628	0.33	80,000
dimethylphenol;2,4-	0.0381	0.33	3.12
di-n-butyl phthalate	0.02729	0.33	72
di-n-octylphthalate	0.03606	0.33	1,600
dinitro-2-methylphenol;4,6-	0.03971	0.33	0.33
dinitrophenol;2,4-	0.04084	0.33	0.33
dinitrotoluene;2,4-	0.02472	0.33	0.33
dinitrotoluene;2,6-	0.02291	0.33	0.33
hexachlorobenzene	0.0247	0.33	0.33
hexachlorobutadiene	0.03257	0.33	0.48
hexachlorocyclopentadiene	0.03489	0.33	160.2
hexachloroethane	0.03302	0.33	0.33
isophorone	0.03804	0.33	0.33
methylnaphthalene;2-	0.02595	0.33	320
methylphenol;2-	0.03302	0.33	2.33
methylphenol;4-	0.03287	0.33	400
nitronaniline;2-	0.0207	0.33	0.33
nitronaniline;3-	0.06465	0.33	0.33
nitronaniline;4-	0.0381	0.33	0.33
nitrobenzene	0.02756	0.33	0.33
nitrophenol;2-	0.02748	0.33	0.33
nitrophenol;4-	0.02672	0.33	0.33
nitrosodiphenylamine; N-	0.03447	0.33	0.33
nitroso-di-n-propylamine;N-	0.033	0.33	0.33
pentachlorophenol	0.03114	0.33	0.33
phenol	0.02879	0.33	96.2
tetrachlorobenzene;1,2,4,5-	0.11	0.33	24
tetrachlorophenol;2,3,4,6-	0.016666	0.05	2,400
trichlorophenol;2,4,5-	0.03019	0.33	64.8
trichlorophenol;2,4,6-	0.0278	0.33	0.33
Carcinogenic Polycyclic Aromatic Compounds (cPAHs) [E]			
benzo[a]anthracene	0.03212	0.006	0.020
benzo[a]pyrene	0.02678	0.006	0.054
benzo[b]fluoranthene	0.03015	0.006	0.067
benzo[k]fluoranthene	0.03117	0.006	0.067
chrysene	0.03531	0.006	0.022
dibenzo[a,h]anthracene	0.02807	0.006	0.101
indeno[1,2,3-cd]pyrene	0.02949	0.006	0.196
Non-Carcinogenic Polycyclic Aromatic Compounds (PAHs) [E]			
acenaphthene	0.02368	0.006	65.3
anthracene	0.023	0.006	3,851
benzo[ghi]perylene [F]	0.02885	0.33	1,132
fluoranthene	0.02404	0.006	88.6
fluorene	0.0226	0.006	173.8
naphthalene	0.02604	0.33	5.0
phenanthrene [G]	0.02475	0.33	65.30
pyrene	0.03562	0.006	1,132

Notes:

A - Method Detection Limit (MDL) from Environmental Sciences Corp environmental laboratory

B - Practical Quantitation Limit (PQL) from Environmental Sciences Corp environmental laboratory

C - Soil Preliminary Cleanup Levels (PCLs) calculated as shown in Attachment 2 of Work Plan

D - SVOCs per EPA Method 8270C

E - cPAHs and PAHs will be analyzed per 8270 SIM (low level)

F - Toxicity information is not available for benzo(ghi)perylene. Pyrene has been used as surrogate

G - Toxicity information is not available for phenanthrene. Anthracene has been used as surrogate

Upland SAP Table 4
Groundwater PQLs and PCLs VOCs
Baywood Products Site, Port of Everett
Everett, WA

Analyte	Laboratory MDL [A] (µg/L)	Laboratory PQL [B] (µg/L)	Selected PCL [C] (µg/L)
Volatile Organic Compounds (VOCs) [D]			
acetone	8.92	25	800
benzene	0.288	0.5	1.2
bromochloromethane	0.44	0.5	0.5
bromodichloromethane	0.37	0.5	0.5
bromoform	0.51	0.5	4.3
bromomethane	0.5	0.8900	47
butanone;2- (MEK)	1.42	2.5	4,800
carbon disulfide	0.32	0.5	800
carbon tetrachloride	0.31	0.5	0.5
chlorobenzene	0.26	0.5	130
chloroethane	0.856	0.5	15
chloroform	0.33	0.5	5.7
chloromethane	0.251	0.5	130
cyclohexane	0.3	1	1
dibromo-3-chloropropane;1,2-	0.48	1	1
dibromochloromethane	0.42	0.5	0.5
dibromoethane; 1,2-	0.48	0.5	0.5
dichlorobenzene; 1,2-	0.29	0.5	420
dichlorobenzene; 1,3-	0.189	0.5	320
dichlorobenzene; 1,4-	0.3	0.5	4.9
dichlorodifluoromethane	0.3	0.5	1,600
dichloroethane;1,1-	0.31	0.5	800
dichloroethane;1,2-	0.274	0.5	1
dichloroethylene;1,1-	0.495	0.5	1
dichloroethylene;1,2-,cis	0.38	0.5	80
dichloroethylene;1,2-,trans	0.3	0.5	10,000
dichloropropane;1,2-	0.52	0.5	1
dichloropropene;1,3-,cis	0.26	0.5	0.5
dichloropropene;1,3-,trans	0.24	0.5	0.5
dioxane;1,4-	33	100	100
ethylbenzene	0.222	0.5	530
hexanone-2	1.57	2.5	2.5
isopropylbenzene	0.189	0.5	800
methyl acetate	6.666	20	8,000
methyl-2-pentanone; 4- (MIK)	1.42	2.5	640
methyl tert-butyl ether	0.193	0.5	20
methylene chloride	0.295	0.02	4.6
methylcyclohexane	0.333	1	1
styrene	0.38	0.5	1.5
tetrachloroethane;1,1,2,2-	0.22	0.5	0.5
tetrachloroethylene	0.293	0.5	0.5
toluene	0.269	0.5	1,300
trichloro-1,2,2-trifluoroethane;1,1,2-	0.217	0.5	240,000
trichlorobenzene; 1,2,3-	0.24	7	0.5
trichlorobenzene; 1,2,4-	0.265	0.5	35
trichloroethane; 1,1,1-	0.27	0.5	420,000
trichloroethane; 1,1,2-	0.451	2	1
trichloroethylene	0.37	0.0033	1.5
trichlorofluoromethane	0.286	0.5	2,400
vinyl chloride	0.067	0.2	0.2
xylenes (total)	0.86	1.5	1,000

Notes:

A - Laboratory Method Detection Limit (MDL) from Environmental Sciences Corp environmental laboratory

B - Practical Quantitation Limit (PQL) from Environmental Sciences Corp environmental laboratory

C - Groundwater Preliminary Cleanup Levels (PCLs) calculated as shown in Attachment 2 of Work Plan

D - VOCs per EPA Method 8260

Upland SAP Table 5
Soil PQLs and PCLs
VOCs
Bay Wood Products Site, Port of Everett
Everett, WA

Analyte	Laboratory MDL [A] (mg/kg)	Laboratory PQL [B] (mg/kg)	Selected PCLs [C] (mg/kg)
Volatile Organic Compounds (VOCs) [D]			
acetone	0.0170	0.05	3.21
benzene	0.000325	0.001	0.0068
bromochloromethane	0.000447	0.001	0.001
bromodichloromethane	0.000387	0.001	0.0014
bromoform	0.000577	0.001	0.029
bromomethane	0.001284	0.005	0.218
butanone;2- (MEK)	0.002679	0.1	48,000
carbon disulfide	0.001785	0.001	5.6
carbon tetrachloride	0.000320	0.001	0.002
chlorobenzene	0.000250	0.001	1.126
chloroethane	0.000586	0.005	350
chloroform	0.000411	0.005	0.030
chloromethane	0.000562	0.001	77
cyclohexane	0.000333	0.001	0.001
dibromochloromethane	0.000231	0.001	0.002
dibromo-3-chloropropane;1,2-	0.001157	0.005	0.71
dibromoethane; 1,2-	0.000315	0.001	0.005
dichlorobenzene; 1,2-	0.000237	0.001	4.93
dichlorobenzene; 1,3-	0.000379	0.001	0.001
dichlorobenzene; 1,4-	0.000218	0.001	0.081
dichlorodifluoromethane	0.000320	0.001	16,000
dichloroethane;1,1-	0.000259	0.001	4.37
dichloroethane;1,2-	0.000531	0.001	0.002
dichloroethylene;1,1-	0.000742	0.001	0.001
dichloroethylene;1,2-,cis	0.000723	0.001	0.40
dichloroethylene;1,2-,trans	0.000678	0.001	54
dichloropropane;1,2-	0.000751	0.001	0.0026
dichloropropene;1,3-,cis	0.000262	0.001	0.001
dichloropropene;1,3-,trans	0.000360	0.001	0.001
dioxane;1,4-	0.033	0.10	91
ethylbenzene	0.000226	0.001	4.53
hexanone-2	0.001953	0.01	0.01
isopropylbenzene	0.000211	0.001	8,000
methyl tert-butyl ether	0.000278	0.001	0.085
methylene chloride	0.0006	0.005	0.02
methyl acetate	0.006666	0.02	73,903
methylcyclohexane	0.000333	0.001	0.001
methyl-2-pentanone; 4-	0.001397	0.01	6,400
styrene	0.000203	0.001	0.034
tetrachloroethane;1,1,2,2-	0.000329	0.001	0.001
tetrachloroethylene	0.000231	0.001	0.004
toluene	0.001214	0.005	7
trichlorobenzene;1,2,3-	0.000231	0.001	0.001
trichlorobenzene; 1,2,4-	0.000249	0.001	1.33
trichloroethane; 1,1,1-	0.000516	0.001	2
trichloroethane; 1,1,2-	0.000456	0.001	0.0033
trichloro-1,2,2-trifluoroethane; 1,1,2-	0.000247	0.001	2,400,000
trichloroethylene	0.000336	0.001	0.010
trichlorofluoromethane	0.000273	0.005	24,000
vinyl chloride	0.000287	0.001	0.001
xylenes	0.000460	0.003	9

Notes:

A - Method Detection Limit (MDL) from Environmental Sciences Corp environmental laboratory

B - Practical Quantitation Limit (PQL) from Environmental Sciences Corp environmental laboratory

C - Soil Preliminary Cleanup Levels (PCLs) calculated as shown in Attachment 2 of Work Plan.

D - VOCs per EPA Method 8260

Upland SAP Table 6
Groundwater PQLs and PCLs
Metals, PCBs, TPH, and Dioxin/Furan
Bay Wood Products Site, Port of Everett
Everett, WA

Analyte	Laboratory MDL [A] (µg/L)	Laboratory PQL [B] (µg/L)	Selected PCL [C] (µg/L)
Metals [D]			
Antimony	0.22	1	5.6
Arsenic	0.15	1	1
Beryllium	0.24	1	270
Cadmium	0.24	1	1
Chromium [E]	0.32	1	10
Copper	0.45	1	2.4
Lead	0.22	1	1
Nickel	0.34	1	8.2
Selenium	0.43	1	5
Silver	0.12	0.5	0.5
Thallium	0.09	1	1
Zinc	2.98	10	32
Mercury	0.0439	0.2	0.2
Polychlorinated Biphenyls [F] (PCBs)			
aroclor 1016	0.077	0.01	0.01
aroclor 1221	0.165	0.01	0.01
aroclor 1232	0.175	0.01	0.01
aroclor 1242	0.099	0.01	0.01
aroclor 1248	0.039	0.01	0.01
aroclor 1254	0.122	0.01	0.014
aroclor 1260	0.155	0.01	0.014
Total Petroleum Hydrocarbons (TPH) [G]			
TPH-Dx	33	100	500
TPH-Gx	31	100	1,000 / 800 [H]
Dioxins / Furans (EPA Method 1613) [I]			
2,3,7,8-Tetra TCDD [J]	1.19E-09	1.00E-08	0.00000001

Notes:

A - Method Detection Limit (MDL) from Environmental Sciences Corp environmental laboratory

B - Practical Quantitation Limit (PQL) from Environmental Sciences Corp environmental laboratory

C - Groundwater Preliminary Cleanup Levels (PCLs) calculated as shown in Attachment 2 of Work Plan

D - Metals per EPA Method 6020, Mercury per EPA Method 7470A

E - Chromium VI

F - PCBs per EPA Method 8082

G - Total Petroleum Hydrocarbons per NWTPH Method

H - Gasoline Range Organics 1,000 µg/L with no detectable benzene in groundwater, 800 µg/L if present in groundwater

I - Dioxins/Furans by EPA Method 1613

J - Per Ecology Comment 44(d) to the Draft Final Work Plan, 2,3,7,8 TCDD has been used as the value for Dioxin/Furan

Upland SAP Table 7
Soil PQLs and PCLs
Metals, PCBs, TPH, Dioxin/Furan
Bay Wood Products Site, Port of Everett
Everett, WA

Analyte	Laboratory MDL [A] (mg/kg)	Laboratory PQL [B] (mg/kg)	Selected PCLs [C] (mg/kg)
Metals[D]			
Antimony	0.315	1	5.1
Arsenic	0.395	1	1
Beryllium	0.025	0.1	25
Cadmium	0.035	0.25	2.0
Chromium [E]	0.115	0.5	3.84
Copper	0.175	1	1.07
Lead	0.12	0.25	108
Nickel	0.49	1	10.69
Selenium	0.46	1	1
Silver	0.125	0.5	0.5
Thallium	0.45	1	1
Zinc	0.44	1.5	39.8
Mercury	0.0015	0.02	0.02
Polychlorinated Biphenyls (PCBs) [F]			
aroclor 1016	0.000077	0.0005	3.89
aroclor 1221	0.000165	0.0005	0.0005
aroclor 1232	0.000175	0.0005	0.0005
aroclor 1242	0.000099	0.0005	0.0005
aroclor 1248	0.000039	0.0005	0.0005
aroclor 1254	0.000122	0.0005	1.11
aroclor 1260	0.000155	0.0005	0.00
Total Petroleum Hydrocarbons (TPH)[G]			
TPH-Gx	-	0.1	100/30 [H]
TPH-Dx	1.3	4	460
Total Dioxin/Furan [I]			
Dioxin/Furan Total	5.10E-08	3.80E-08	0.000011[J]

Notes:

A - Method Detection Limit (MDL) from Environmental Sciences Corp environmental laboratory
B - Practical Quantitation Limit (PQL) from Environmental Sciences Corp environmental laboratory
C - Soil PCLs calculated as shown in Attachment 2 of Work Plan
D - Metals per EPA Method 6020, Mercury per EPA Method 7470A
E - Chromium VI
F - PCBs per EPA Method 8082
G - Total Petroleum Hydrocarbons per NWTPH Method
H - 100 mg/kg for gasoline mixtures without benzene and the total of ethyl benzene, toluene and xylene are less than 1% of the gasoline mixture; 30 mg/kg for all other mixtures
I - Dioxins/Furans by EPA Method 1613
J - MTCA Method B Cleanup Level - Ingestion, per Ecology comment number 89h to DRAFT RI/FS and CAP Work Plan

APPENDIX A

STANDARD SLR FIELD FORMS

Project:		**Boring Location / Sample Name:**
Boring/Sample Location:	**Job #:**	
Drilling Company:	**Logged by:**	
Equipment:	**Start Date/Time:**	
Sampling Method:	**Finish Date/Time:**	
Hammer Weight:	**Monitoring Device:**	
Sample Interval (bgs):	**First Water (bgs):**	

Sample I.D.	Sample Interval	Recovery (%)	PID (ppm)	Blow Counts	Depth (feet bgs)	USCS Code	Graphic Log	Lithologic Description	Boring Abandonment or Well Construction Details
					0 5 10 15 20				

Depth of Boring (bgs):	**Filter Pack:**
Depth of Well (bgs):	**Annulus Seal:**
	Surface Seal:

Investigation Derived Waste / Drum Inventory Form

Site Name:	Project Number:
Field Staff:	Date:

Drum Number	Contents	How Full?	Date Generated	Labeled	Boring/Well ID	Chemicals of Interest / Notes
	☐ Soil ☐ Mixture ☐ Water ☐ Other			☐ Yes ☐ No		
	☐ Soil ☐ Mixture ☐ Water ☐ Other			☐ Yes ☐ No		
	☐ Soil ☐ Mixture ☐ Water ☐ Other			☐ Yes ☐ No		
	☐ Soil ☐ Mixture ☐ Water ☐ Other			☐ Yes ☐ No		
	☐ Soil ☐ Mixture ☐ Water ☐ Other			☐ Yes ☐ No		
	☐ Soil ☐ Mixture ☐ Water ☐ Other			☐ Yes ☐ No		
	☐ Soil ☐ Mixture ☐ Water ☐ Other			☐ Yes ☐ No		
	☐ Soil ☐ Mixture ☐ Water ☐ Other			☐ Yes ☐ No		
	☐ Soil ☐ Mixture ☐ Water ☐ Other			☐ Yes ☐ No		
	☐ Soil ☐ Mixture ☐ Water ☐ Other			☐ Yes ☐ No		
	☐ Soil ☐ Mixture ☐ Water ☐ Other			☐ Yes ☐ No		
	☐ Soil ☐ Mixture ☐ Water ☐ Other			☐ Yes ☐ No		
	☐ Soil ☐ Mixture ☐ Water ☐ Other			☐ Yes ☐ No		
	☐ Soil ☐ Mixture ☐ Water ☐ Other			☐ Yes ☐ No		

Drum placement location:

Drums Sampled, Sample Names, and Analysis:

Notes:

1. Confirm drum placement location with the site contact.
2. Detail the final drum placement location on site map.
3. Confirm final drum count and drum contents.
4. Photograph drum placement location and drum labels.
5. Drum labels should face outward; easy to read.
6. Note any abnormal condition of the drums.
7. Confirm drum sampling requirements with PM.

APPENDIX B

SEDIMENT SAMPLING AND ANALYSIS PLAN
(to be submitted under separate cover)

APPENDIX C

SITE HEALTH AND SAFETY PLAN

SLR

Health and Safety Plan
Site Walk
Port of Everett Bay Wood Products Site
Everett, Washington

1.0 REVIEW AND APPROVAL

This Health and Safety Plan (HASP) has been written for the use of SLR International Corp and its employees. It may also be used as a guidance document by properly trained and experienced SLR subcontractors. However, SLR does not guarantee the health or safety of any person entering this site. Questions regarding the applicability of this HASP to personnel other than SLR employees should be referred to Steve Locke at (503) 723-4423.

Due to the potential hazardous nature of this site and the activity occurring thereon, it is not possible to discover, evaluate, and provide protection for all possible hazards which may be encountered. Strict adherence to the health and safety guidelines set forth herein will reduce, but not eliminate, the potential for injury at this site. The health and safety guidelines in this HASP were prepared specifically for the Port of Everett Bay Wood Products Site in Everett, Washington and should not be used on any other site without prior research by trained health and safety specialists.

SLR claims no responsibility for the use of this HASP by others. The HASP was written for the specific site conditions, purposes, dates, and personnel specified and must be amended if these conditions or work scope change.

Client: Port of Everett

Site Name: Bay Wood Products

Project Name: Bay Wood Products

Project Number:

Start Date: 7/31/08

Project Manager: Scott Miller

Signature: R Scott Miller

Date: 7/31/08

Site Health and Safety Officer: Kim Saganski

Signature: K Saganski

Date: 7/31/08

2.0 HEALTH AND SAFETY PERSONNEL

2.1 Project Manager

The Project Manager (PM) for the Port of Everett Bay Wood Products Site is Scott Miller. The PM has the following responsibilities:

- Ensure the HASP is complete prior to beginning field work.
- Ensure that all equipment and supplies to perform the items in the HASP are available.
- Manage all contract requirements, including ensuring the availability of the health and safety resources.
- Coordinate all project activities with the client, subcontractors, and SLR staff.

2.2 Site Health and Safety Officer

The Site Health and Safety Officer (SHSO) for the Port of Everett Bay Wood Products Site is Chris Kramer. The SHSO has the following responsibilities:

- Ensure the HASP is completed and enforced on the first day of on-site work.
- Day to day on-site implement of the HASP. The SHSO has the authority to stop work or prohibit any personnel from working on the site at any time for not complying with any aspect of the Plan.
- Day to day communication with the PM and any other pertinent staff to ensure efficient coordination of health and safety activities with other planned field activities.

The SHSO should have the following training:

- 40-hour Health and Safety Training
- First Aid and CPR Training
- Supervisor Training
- Medical Surveillance

2.3 Site Personnel

Each person on the site has responsibility for their own health and safety, as well as assisting others in carrying out the items in the HASP. Any person observed to be in violation of the HASP should be assisted in complying with the requirements, or reported to the SHSO. Any site personnel may shut down field activities if there is a real or perceived immediate danger to life or health.

3.0 GENERAL SITE REQUIREMENTS AND BACKGROUND INFORMATION

3.1 Location, Operations, and Approximate Size of Site

Site Name and Address:	Port of Everett Bay Wood Products Site (Site) 200 West Marine View Drive Everett, Washington 98201
Current Site Owners:	Port of Everett
Current Site Operators:	The site is currently unused
Approximate Size of Site:	Approximately 13 acres

The Site is located on the east bank of the Snohomish River and the confluence with Puget Sound. A Site Location Map has been included as Figure 1 and a Site Plan has been included as Figure 2 (Attachment 1). The Site is located in the Section 7, Township 29N, Range 5E of the Willamette Meridian. The Site is located in Everett Washington in Snohomish County. The Site is relatively flat with the maximum elevation at approximately 15 feet above mean sea level.

3.3 Description of Planned Activities

SLR will be conducting a site walk at the Port of Everett Bay Wood Products Site. No field work will be conducted as part of the planned activities. The activities to be performed by SLR will include the following:

- Conduct site walk on upland and intertidal areas of the site during low tide.

3.4 Schedule of Planned Activities

Site activities are tentatively scheduled for July 31, 2008. All activities will be performed during daylight hours.

3.7 Hazardous Material Usage

No hazardous materials will be used at the site during field activities.

3.8 Waste Generation

SLR anticipates no waste generation as a part of the activities at the site.

4.0 SITE HEALTH AND SAFETY HAZARDS

Site health and safety hazards include known or potential chemical contaminants and physical hazards that may occur during field activities. Overall, the health and safety hazards of the anticipated activities at the Site have a rating of low. The greatest potential hazards are expected to be from field conditions (slips, trips, and falls).

4.1 Chemical Hazards

Based on the past site activities and facility processes and limited environmental sampling, the following have been designated as the primary chemical contaminants of human health concern.

- Wood debris which may result in releases of ammonia, hydrogen sulfide, or phenols (4-methyphenol, 2,4-dimethylphenol).
- Petroleum hydrocarbons (gasoline and diesel) related to the former above ground storage tanks (ASTs).
- Potential hazardous substances released during historic sawmilling operations including petroleum hydrocarbons and polynuclear aromatic hydrocarbons (PAHs).

The following tables summarize the potential hazards from the above listed primary chemical contaminants of human health concern.

Contaminant of Concern:	Ammonia
Soil Concentration:	Unknown
Groundwater Concentration:	Unknown
PEL:	35 mg/m3 8-hour TWA
TLV:	17 mg/m3 8-hour TWA
IDLH:	300 ppm
Warning Properties:	Pungent odor at ~5 ppm; eye irritation at 20 ppm
Routes of Exposure:	Inhalation, skin/eye contact, ingestion
Acute Health Effects:	Corrosive injury to the mucous membranes of the eyes, lungs, and gastrointestinal tract and to the skin due to the alkaline pH and the hygroscopic nature of ammonia.
Chronic Health Effects:	Chronic irritation of the respiratory tract, eye membranes and dermatitis, chronic cough, asthma and lung fibrosis.

Contaminant of Concern:	Hydrogen Sulfide
Soil Concentration:	Unknown
Groundwater Concentration:	Unknown
PEL:	20 ppm (ceiling) with the following exception: if no other measurable exposure occurs during the 8-hour work shift,

	exposures may exceed 20 ppm, but not more than 50 ppm (peak), for a single time period up to 10 minutes
TLV:	10 ppm, 14 mg/m^3 8-hour TWA; 15 ppm, 21 mg/m^3 STEL
IDLH:	100 ppm
Warning Properties:	Not dependable; characteristic rotten-egg odor detectable at about 0.5 ppb, but olfactory nerve fatigue occurs in 2 to 15 minutes at concentrations over 100 ppm
Routes of Exposure:	Inhalation, skin/eye contact, ingestion
Acute Health Effects:	Nausea, headaches, delirium, disturbed equilibrium, tremors, convulsions, and skin and eye irritation
Chronic Health Effects:	Low blood pressure, headache, nausea, loss of appetite, weight loss, ataxia, eye-membrane inflammation, chronic cough, psychological disorders

Contaminant of Concern:	Phenols
Soil Concentration:	Unknown
Groundwater Concentration:	Unknown
PEL:	TWA 5 ppm (19 mg/m^3) [skin]
TLV:	TWA 5 ppm (19 mg/m^3) C 15.6 ppm (60 mg/m^3) [15-minute] [skin]
IDLH:	250 ppm
Warning Properties:	Sweet, acrid odor
Routes of Exposure:	Inhalation, skin absorption, ingestion, skin and/or eye contact
Acute Health Effects:	Irritation to eyes, nose, throat; lassitude (weakness, exhaustion), muscle ache, pain; dark urine; skin burns; dermatitis; tremor, convulsions, twitching
Chronic Health Effects:	Cyanosis; liver, kidney damage

Contaminant of Concern:	TPH-G (Total Petroleum Hydrocarbons – Gasoline Range)
Soil Concentration:	Unknown
Groundwater Concentration:	Unknown
PEL:	0.2 ppm 8-hour TWA
TLV:	0.2 ppm 8-hour TWA
IDLH:	N.D. (not determined)
Warning Properties:	Characteristic gasoline odor
Routes of Exposure:	Inhalation, dermal contact, ingestion
Acute Health Effects:	Eye, skin, and mucus membrane irritation; blurred vision, dizziness, confusion and slurred speech.
Chronic Health Effects:	Kidney and liver damage, central nervous system damage, and benzene can cause blood changes including leukemia and anemia.

Contaminant of Concern:	TPH-Dx (Total Petroleum Hydrocarbons – Diesel Range)
Soil Concentration:	Unknown
Groundwater Concentration:	Unknown
PEL:	25 ppm 8-hour TWA
TLV:	100 mg/m3 8-hour TWA
IDLH:	Not Applicable
Warning Properties:	Diesel odor
Routes of Exposure:	Inhalation, dermal contact, ingestion
Acute Health Effects:	Coughing, dizziness, nausea, skin and eye irritation, diarrhea, vomiting, abdominal discomfort
Chronic Health Effects:	Dermatitis, benzene can cause blood changes including leukemia and anemia

PAHs are a group of chemicals that are formed during the incomplete combustion of coal, oil, and gas. Most PAHs do not dissolve easily. Typically, PAHs tend to attach to particulates in water or absorb to soil. Naphthalene is the most common PAH and benzo(a)pyrene is the most studied PAH and is ranked as an A2 suspected human carcinogen. The following table summarizes the potential hazards of PAHs:

Contaminant of Concern:	Naphthalene and benzo(a)pyrene (assumed for all PAHs)
Soil Concentration:	6,100 µg/mg (dibenzo(a,h)anthracene)
Groundwater Concentration:	1.13 µg/L (naphthalene)
PEL:	50 mg/m3 8-hour TWA (naphthalene)
TLV:	50 mg/m3 8-hour TWA (naphthalene)
IDLH:	500 ppm (naphthalene)
Warning Properties:	None
Routes of Exposure:	Inhalation, incidental ingestion, and dermal contact (PAHs have low volatilization potentials, therefore inhalation usually occurs through intake of PAHs absorbed to particulates)
Acute Health Effects:	Skin, respiratory and eye irritant, change color and properties of skin
Chronic Health Effects:	Bladder, skin and lung cancer, and reproductive damage

4.2 Physical Hazards

The following table summarizes the potential physical hazards that could occur during the activities at the site:

Physical Hazard	Yes	No
Overhead/underground hazards		
• Overhead		X
• Underground		X
Equipment hazards		
• Drilling		X
• Excavation		X
• Machinery		X
Heat exposure	X	
Cold exposure		X
Oxygen deficiency		X
Confined space *		X
Noise		X
Ionizing radiation		X
Non-ionizing radiation		X
Fire/Explosion		X
Biological	X	
Safety		
• Holes/ditches	X	
• Steep grades	X	
• Slippery surfaces	X	
• Uneven terrain	X	
• Water hazard	X	
• Unstable surfaces (slippery/muddy)	X	
• Elevated work surfaces		X
Shoring/Scaffolding		X

* SLR personnel are forbidden from entering any confined space, including excavation pits.

4.3 Task Specific Hazards

The following table summarizes the potentially hazards from each specific tasks:

Task	Hazard Rating	Identified/Anticipated Hazards
Site Walk	Low	Water hazard, biological (snakes, etc.), slip-trip-fall safety

4.4 Utilities

No subsurface work will be performed during the site walk activities.

5.0 SITE HEALTH AND SAFETY PROCEDURES

No field work is proposed as part of the site walk. The HASP will be updated prior to initiation of any field work activities.

5.1 Daily Site Safety Meetings

Site safety meetings will be held daily before initiating any field activity. The safety meetings will be mediated by the SHSO. Site safety meetings will also be held at any other time, as necessary, to ensure the safety and health of the employee on-site. A Daily Safety Meeting Log has been included as Attachment 3.

Prior to beginning any work at the site, each worker will be given an informal training on how the project will progress. The SHSO will inform the workers of the following information:

- Proposed work activities for the day and the potential hazards
- Provisions of this Plan
- Dry runs of the emergency procedures, including location of the medical facility
- Dry runs of the decontamination procedures, if applicable
- Chemical exposures expected at the site
- Site lay-out and zone delineation
- Warning signals and evacuation procedures

5.2 Site Security

The SHSO is responsible for preventing unauthorized entry into the work area and for knowing who is on-site at all times. Access to the work site will be controlled in the following manner:

- Cones, barricades, and/or caution tape will be used to delineate work area, as applicable.

5.3 Work Limitations and Restrictions

The following work limitation and restrictions will be employed by the SHSO:

- No eating, drinking, or smoking on-site.
- No contact lenses on-site. Workers requiring vision correction must wear glasses in environments with chemicals.
- No facial hair that would interfere with respirator fit.

- The SHSO will monitor weather broadcasts before the start of work each day, and more frequently as necessary. No work will be done outdoors in inclement weather (snow, sleet, etc.) without authorization from the SHSO.

5.4 Decontamination Procedures

The following decontamination procedures will be followed:

- Personnel: Personnel will wash with soap and water before leaving the site.
- Field Equipment: Field equipment will be decontaminated prior to and after use by following these procedures:
    1. Wash equipment with detergent.
    2. Rinse with tap water.
    3. Triple rinse with purified water.
    4. Air dry.
    5. Wrap in clean polyethylene plastic, when necessary.
- Heavy Equipment: Heavy equipment will be steam cleaned or boom-cleaned, if necessary.

5.5 General Health and Safety Procedures

The following general health and safety procedures will be followed at the site:

- The Utility Clearance Log will be completed prior to beginning any subsurface work.
- Determine wind direction and try to remain upwind when collecting samples.
- Daily safety meetings will be held by the SHSO.
- Potable water must always be available at the work site.
- If toilet facilities are not located within a 5-minute walk from the decontamination facilities, either provide a chemical toilet and hand washing facilities or have a vehicle available (not the emergency vehicle) for transport to nearby facilities.
- Provide dust control by spraying soils with water or a surfactant/water solution.
- Use ground fault circuit interrupters for plug-in electrical devices and extension cords (3-pin plugs only).
- Be aware of tripping hazards with extension cords, tools, hoses, augers, etc.
- If an on-site command post is necessary, ensure that it is located upwind from sources, give prevailing winds, and locate/identify on Site Map.
- On-site personnel must be able to call off site via a telephone within 150 feet of work.

- Designate at least one vehicle for emergency use.

5.6 Perimeter Identification

The perimeters of the different field activities are included on Figure 2, Site Plan (Attachment 1). There are four classifications of "zones" or "boundaries" that could be required at a job site:

1. **Exclusion Zone**: Required when workers within that zone must wear personal protective equipment (PPE).
2. **Contamination Reduction Zone**: Required when decontamination of people and equipment leaving the Exclusion Zone is required.
3. **Support Zone**: The location where administrative and other support activities are conducted.
4. **Work Area Boundary**: Excludes non-workers from entering a potentially hazardous environment.

All tasks that are being proposed at the site are classified as Work Area Boundaries.

5.7 Personnel Protective Equipment

Personnel protective equipment (PPE) is designed to protect the body against contact with known or anticipated toxic chemicals. PPE has been designated into four different levels:

1. **Level A:** Self-contained breathing apparatus (SCBA), totally encapsulating suit, two-way radio communications.
2. **Level B:** SCBA or supplied-air respirator with an escape bottle, chemically resistant PPE, two-way radio communications.
3. **Level C:** Full- or half-face air respirator (with safety goggles), chemically resistant PPE.
4. **Level D:** No respiratory protection. Safety glasses, hard hat, steel-toe boots, long-sleeved shirt and pants. Hearing protection, gloves, and other PPE as required.

The Port of Everett Bay Wood Products Site is classified as a Level D PPE site. There is little to no risk of workers being in contact with contaminants. Level D PPE includes:

- Hard Hat (ANSI Z89.1 approved)
- Steel Toed and Shank Boots (ANSI Z41.1 approved)
- Safety Glasses (ANSI Z87.1 approved)
- Gloves
- Close Fitting Clothing
- Hearing Protection (optional)

Environmental and personnel monitoring will be conducted to evaluate the level of contamination to which site personnel or the surrounding environment are being exposed. The results of the monitoring will form the basis by which the SHSO will determine the level of PPE required for a particular operation. A photo ionization detector (PID) will be used to monitor the presence of organic vapors or gases. The PID will be used during borings and test pit excavations according to the following guide:

- 0 to 20 units (ppmv) above background – Continue work
- 20 to 50 units above background – Investigate cause and continue work if PPE adequate
- Over 50 units above background – Stop work and investigate; use ventilation to reduce levels

5.8 Safety Equipment

The following safety equipment and supplies will be available at the site at all times during field work:

- Reflective vests to be available to wear around moving vehicles, if any
- At least one 20-pound ABC-type fire extinguisher
- First Aid Kit
- Emergency eyewash
- Hearing protection in the form of disposable ear plugs to be worn around heavy equipment, machinery, or when two individuals five feet or less apart need to shout to be heard
- Soap gel or disposable wipes
- Disposable towels
- Plastic sheeting
- Cleaning brushes and tubs
- Life vest / flotation equipment (sediment sampling)

6.0 CONTIGENCY PLAN

In the unlikely event of a fire or explosion, or uncontrolled release of a contaminant, prompt action to limit the extent of the impact will be required. The SHSO shall evaluate all emergency situations and inform personnel by use of a signal horn, visual, or verbal contact, as appropriate. All personnel must know ahead of time what their duties would be in the event of an emergency.

6.1 Injury or Illness

If an injury of illness occurs at the job site, take the following action:

- Get first aid for the person immediately. Call 911 if needed.
- Notify the SHSO. The SHSO is responsible for preparing and submitting the Incident Report within 24 hours.
- The SHSO will assume charge during an emergency situation.

The location of the nearest hospital, with driving instruction, has been included as Attachment 4 to this plan. The hospital is located at:

Providence Everett Medical Center
900 Pacific Avenue
Everett, Washington 98021
(425) 261-2000

6.2 Emergency Telephone Numbers

Project Personnel

Name	Title	Cell Phone	Work Phone
Scott Miller	SLR Project Manager	(503) 572-1124	(503) 723-4423
Chris Kramer	SLR SHSO	(503) 341-2187	(503) 723-4423

Governmental Agency Contacts

Agency	Phone Number
Office of Emergency Services	(800) 852-7550
National Response Center	(800) 424-8802
One Call (Utility Locate)	(800) 424-5555
APS (Private Locater)	(425) 888-2590

Attachment 1

Figures

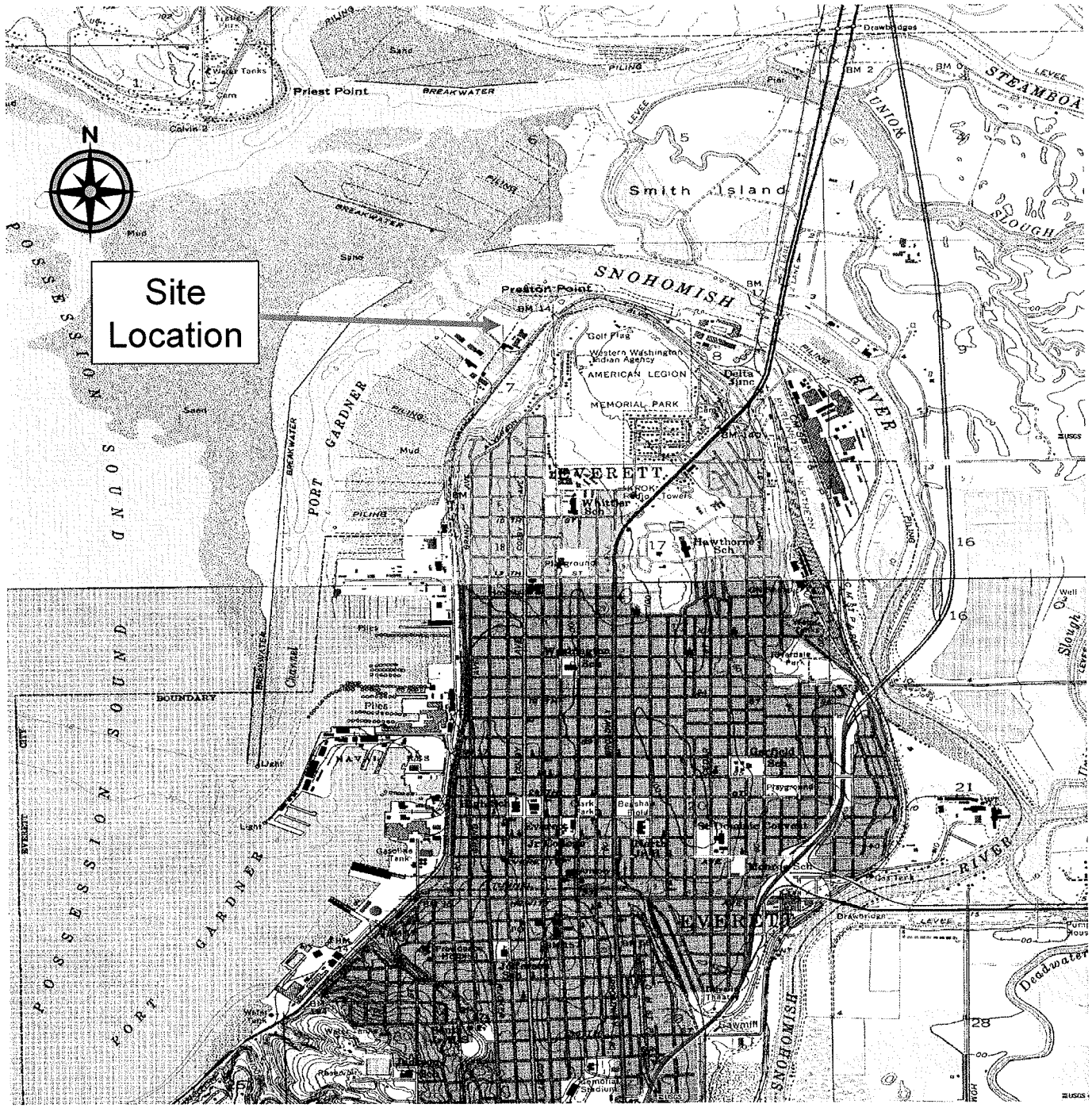


Figure 1
Vicinity Map
Bay Wood Products Site

QUADRANGLE LOCATION

Source: USGS 7.5 Minute Quadrangle Maps (Everett and Marysville Quadrangle Maps; Photo Revised – 1968 and 1973)

Figure 2
Site Plan - Bay Wood Products Site

Source: Imagery: I-Cubed, 2006; Acquired: Via ArcGIS Explorer by ESRI on 1/25/2008.

Attachment 2

Utility Clearance Log

ATTACHMENT 2

PRE-DRILLING/EXCAVATION CHECKLIST AND UTILITY CLEARANCE LOG

PROJECT:		DATE:	
LOCATION:		UTILITY LOCATOR PHONE:	
UTILITY LOCATOR:		LOCATOR CALL REFERENCE:	
DATE OF LOCATOR REQUEST:		SLR FIELD TECHNICIAN:	

Instructions: This checklist is to be completed by SLR personnel prior to initiation of filed activites as a safety measure to insure that underground structures and aboveground power lines are clearly marked in the area selected for boring or excavation. **Drilling or excavation work may not proceed until One Call has been contacted and this checklist has been completed. If any of the questions answered below are answered "no," then the project manager must be contacted and concerns/issues discussed.** "No" answers should be documented on the back of the form.

Type of Utilities and Structures	Not Present	Present	Marking (Flags, Paint, Stakes)

YES	NO	PRE-MOBILIZATION
		Is a scaled site plan, map, or drawing showing the proposed borehole locations attached?
		Does each location allow for clear entry and exit, adequate workspace, and a clear path for raising and lowering all equipment? 20 feet minimum clearance must be maintained between raised equipment and electrical lines.
		Are all of the locations and associated areas of pavement cutting at least 3 feet from any subsurface or aboveground utilities shown on client's building plans?
		Are all of the locations and associated areas of pavement cutting at least 3 feet from any subsurface or aboveground utilities shown on public right-of-way street improvement or other public property plan or site map?
		Has the Site Representative indicated no knowledge of any subsurface or aboveground utilities within 3 feet of the proposed locations? Is the Site Representative qualified to make such a determination?
		Are all of the proposed locations and associated areas of pavement cutting at least 3 feet from any subsurface utilities identified during a geophysical survey?
		Have all Utility Locating Service providers notified by the public line locator marked out their facilities in the vicinity of the locations or otherwise notified SLR that they do not have any facilities near the proposed locations?
		Are all proposed locations and associated areas of pavement cutting at least 3 feet from a visual line connecting two similar looking manhole covers?
		Are all proposed locations and associated areas of pavement cutting at least 3 feet from a visual line perpendicular to the street from the water, gas, and electrical meters?
		Are all proposed locations and associated areas of pavement cutting clear of pavement joints, curbs, crash posts, or other engineered structures?
		Does the pavement lack signs of previous excavation (e.g. no pavement subsidence, difference in pavement texture or relief, or pavement patching)? If there are signs, determine the purpose of the previous excavation.
		Before drilling, has an exploratory hole been dug to 5 feet below grade with a hole diameter greater than the outer diameter of the drilling auger?
		Does the soil encountered in the hand-dug hole appear to be native material (i.e. free of gravel, clean sand, aggregate base, or other non-native looking material)?
		Have all expected utilities been identified and all missing utilities explained?

Have any concerns noted above been discussed with the SLR Project Manager?	**Yes**	**No**
Have any concerns noted above been discussed with the client?	**Yes**	**No**

Approval to proceed:	Client Rep Name:	Title and Date:	
Approval to proceed:	SLR Rep Name:	Title and Date:	

Attachment 3

Daily Safety Meeting Log

ATTACHMENT 3

DAILY SAFETY MEETING LOG

PROJECT:		DATE:	
LOCATION:		START TIME:	

ISSUES DISCUSSED:	
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

ATTENDEES:			
	PRINTED NAME	COMPANY	SIGNATURE
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			

MEETING CONDUCTION BY:	SIGNATURE:
SITE HEALTH AND SAFETY OFFICER:	SIGNATURE:

Attachment 4

Location of Hospital and Driving Instructions

MAPQUEST.

A: 200 W Marine View Dr, Everett, WA 98201-1029

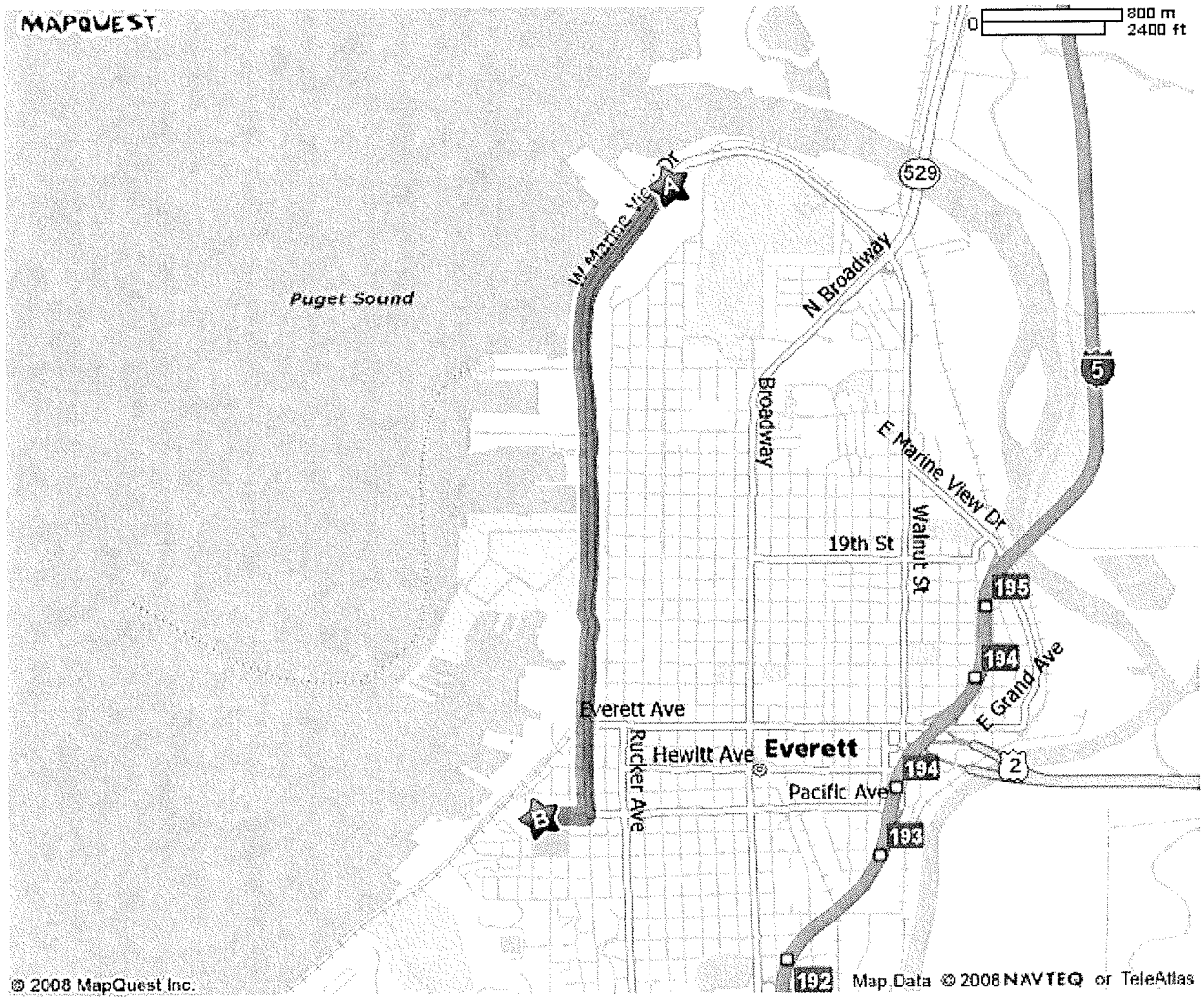
START	**1:** Start out going SOUTH on W MARINE VIEW DR/WA-529 toward 10TH ST. Continue to follow W MARINE VIEW DR.	2.8 mi
	2: Turn RIGHT onto PACIFIC AVE.	0.2 mi
END	**3:** End at 900 Pacific Ave Everett, WA 98201-4168	

Estimated Time: 6 minutes Estimated Distance: 3.01 miles

B: 900 Pacific Ave, Everett, WA 98201-4168

Total Time: 6 minutes Total Distance: 3.01 miles

Get help on the go! MapQuest directions now by phone with **1-800-FREE411** (1-800-373-3411).



APPENDIX D

PARCEL INFORMATION

Snohomish County Washington Online Government Information & Services

* R E A L * Property Information

County Home Assessor Home Treasurer Home Information on which Department to contact

Please view Disclaimer **If you have questions, comments or suggestions, please Contact Us.**

Date/Time:1/25/2008 3:18:37 PM Answers to Frequently Asked Questions about Parcel Data (opens as new window)

Return to Property Information Entry page

Parcel Number **29050700100300** Prev Parcel Reference **07290510030000**

View Map of this parcel (opens as new window)

General Information

Taxpayer Name || Address (contact the Treasurer if you have questions)

EVERETT PORT OF || PO BOX 538 - - - EVERETT, WA 98206

If the above mailing address is incorrect and you want to make a change, see the information on Name and Address Changes

Owner Name || Address (contact the Assessor if you have questions)

EVERETT PORT OF || PO BOX 538 - - - EVERETT, WA 98206

If the above name and address is incorrect due to a recent sale, please see the information on Name and Address Changes After a Sale

Street (Situs) Address (contact the Assessor if you have questions)

200 W MARINE VIEW DR - - - EVERETT, WA 98201-1029

Parcel Legal Description

SEC 07 TWP 29 RGE 05 RT-4) BEG AT 1/4 COR ON E BDY OF SEC TH W 675.81 FT TO W BDY NPRR R/W TPB TH SLY ALG SD R/W LN 75.47FT TH ANG N45*47 22W FOR 549.75FT TH ANG S44*12 38W FOR 49FT TH ANG N45*47 22W FOR 1360.73FT TO E GOVT PIER HEAD LN TH ANG N64*00 00E FOR 744.24FT TH ANG N77*00 00E FOR 380.87FT TH ANG S72*10 22E FOR 944.45FT TH ANG S30*28 38W FOR 670.17FT TH ANG L 76*16 FOR 300FT TO W BDY OF NPRR R/W TH SLY ALG SD R/W LN FOR 615. 03FT TPB LESS ST TO EV ALSO LESS FDP BEG E 1/4 COR SEC 7-29-5 TH S88*58 38W ALG 1/4 LN 675.81FT TO W BDY LN NPRR R/W TH S32*42 38W ALG W BDY LN 75.47FT TH N45*47 22W 40.82 FT TPB TH CONT N45*47 22W 58.51 FT TAP ON A/C C/PT FR WH BEARS N04*05 55W WITH RAD OF 381.17FT TH NELY ALG A/C TO L CONCENTRIC WITH & 8FT SLY FR C/L OF NPRR SPURR AS IT EXISTS ON TH GROUND FOR78.13 FT TH S32*42 38W FOR 64.54 FT TPB

Go to top of page

Treasurer's Tax Information

Taxes **For answers to questions about Taxes, please contact the** Treasurer's office (opens as new window)

Tax Information will be unavailable from January 11 through February 12 due to tax extension posting taxes and assessments. Tax Information should be available again on February 12.

Go to top of page

Assessor's Property Data

Characteristics and Value Data below are for 2008 tax year.

Please contact the Treasurer's office **for answers to questions about Taxes** (opens as new window)

For questions ONLY about property characteristics or property values (NOT taxes), please contact the Assessor's Office

Property Values

Values do not reflect adjustments made due to an exemption, such as a senior or disabled persons exemption.
Reductions for exemptions are made on the property tax bill.

Tax Year	Market Land	Market Improvement	Market Total
2008	$5,427,400	$0	$5,427,400

Go to top of page

Valuation and Property Tax History

View History (opens as new window)

Go to top of page

Property Characteristics

Tax Code Area (TCA) **00010** View Taxing Districts for this Parcel (opens as new window)

Use Code **910 Undeveloped (Vacant) Land**

Size Basis **ACRE** Size **38.63** (Size may include undivided interest in common tracts and road parcels)

Exemption **Government Property**

Go to top of page

Property Structures

No structures found for this parcel

Go to top of page

Property Sales since 7/31/1999

Explanation of Sales Information (opens as new window)

Sales data is based solely upon excise affidavits processed by the Assessor.

No sales for this parcel have been recorded since 7/31/1999

Go to top of page

Property Maps Township/Range/Section/Quarter, links to maps

Neighborhood **5306000** Explanation of Neighborhood Code (opens as new window)

Township **29** Range **05** Section **07** Quarter **NE** Find parcel maps for this Township/Range/Section

View Map of this parcel (opens as new window)

Snohomish County Washington Online Government Information & Services

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Date/Time:1/25/2008 3:20:11 PM Answers to Frequently Asked Questions about Parcel Data (opens as new window)

Return to Property Information Entry page

Parcel Number **29050700100500** Prev Parcel Reference **07290510050008**

View Map of this parcel (opens as new window)

General Information

Taxpayer Name || Address (contact the Treasurer if you have questions)

PORT OF EVERETT || PO BOX 538 - - - EVERETT, WA 98206

If the above mailing address is incorrect and you want to make a change, see the information on Name and Address Changes

Owner Name || Address (contact the Assessor if you have questions)

PORT OF EVERETT || ATTN BANNAN PHILIP B - PO BOX 538 - - EVERETT, WA 98206

If the above name and address is incorrect due to a recent sale, please see the information on Name and Address Changes After a Sale

Street (Situs) Address (contact the Assessor if you have questions)

UNKNOWN UNKNOWN - - -

Parcel Legal Description

SEC 07 TWP 29 RGE 05 RT 5A-) BEG AT E1/4 CN SEC TH S88*58 38 W 675.81FT TH S32*42 38W 75.41FT TH N45*47 22W 121.70FT TO PT 8.0FT NLY OF & PLLWITH C/L OF RR SPUR SD PT BEING ON CRV TPB TH CONT N45*47 22W 428.04FT TH S44* 12 38W 49.0FT TH N45*47 22W 1360.73FT TO INT GOV PIER HEAD LN TH S64*00 00W ALG SD GOV PIER HEAD LN 60.85FT TH S45*47 22E 1631.04FT TO INT LN 8.9FT NLY & PLL WITH C/L OF RR SPUR SD PT BEING ON CRV TO L TH THRU LAST DESC PT ANG L 17*30 00TO PTN TANGENCY OF SD CRV TO L TH ALG TH ARC OF SD CRV TO L HAV RAD OF 513. 67FT & CONS AN ANG 09*13 38 FOR DIST OF 82.75FT TO PT OF COMPOUND WITH CRV TO L TH ALG SD COMP CRV TO L HAV RAD OF 375.06FT & CONS ANG OF 19*25 05 127.11 TO TPB BEING PTN OF GOV LOT 1 & PTN OF EV IMP TDLES IN SEC 7-29-5 CONT 2.67 AC

Go to top of page

Treasurer's Tax Information

Taxes For answers to questions about Taxes, please contact the Treasurer's office (opens as new window)

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Characteristics and Value Data below are for 2008 tax year.

Please contact the Treasurer's office **for answers to questions about Taxes** (opens as new window)

For questions ONLY about property characteristics or property values (NOT taxes), please contact the Assessor's Office

Values do not reflect adjustments made due to an exemption, such as a senior or disabled persons

Property Values

exemption.
Reductions for exemptions are made on the property tax bill.

Tax Year	Market Land	Market Improvement	Market Total
2008	**$315,400**	**$0**	**$315,400**

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Valuation and Property Tax History

View History (opens as new window)

Go to top of page

Property Characteristics

Tax Code Area (TCA) **00010** View Taxing Districts for this Parcel (opens as new window)

Use Code **242 Sawmills & Planing Mills**

Size Basis **ACRE** Size **2.66** (Size may include undivided interest in common tracts and road parcels)

Exemption **Government Property**

Go to top of page

Property Structures

No structures found for this parcel

Go to top of page

Property Sales since 7/31/1999

Explanation of Sales Information (opens as new window)

Sales data is based solely upon excise affidavits processed by the Assessor.

No sales for this parcel have been recorded since 7/31/1999

Go to top of page

Property Maps Township/Range/Section/Quarter, links to maps

Neighborhood **5306000** Explanation of Neighborhood Code (opens as new window)

Township **29** Range **05** Section **07** Quarter **NE** Find parcel maps for this Township/Range/Section

View Map of this parcel (opens as new window)

Snohomish County Washington Online Government Information & Services

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Date/Time:1/25/2008 3:21:06 PM Answers to Frequently Asked Questions about Parcel Data (opens as new window)

Return to Property Information Entry page

Parcel Number **29050700101000** Prev Parcel Reference **07290510100001**

View Map of this parcel (opens as new window)

General Information

Taxpayer Name || Address (contact the Treasurer if you have questions)

PORT OF EVERETT || PO BOX 538 - - - EVERETT, WA 98206

If the above mailing address is incorrect and you want to make a change, see the information on Name and Address Changes

Owner Name || Address (contact the Assessor if you have questions)

PORT OF EVERETT || ATTN BANNAN PHILIP B - PO BOX 538 - - EVERETT, WA 98206

If the above name and address is incorrect due to a recent sale, please see the information on Name and Address Changes After a Sale

Street (Situs) Address (contact the Assessor if you have questions)

UNKNOWN UNKNOWN - - -

Parcel Legal Description

SEC 07 TWP 29 RGE 05 RT 4-1) TH PTN GOVT LOTS 1 & 2 DAF COM AT E 1/4 COR OF SD SEC TH S88*58 38W ALG1/4 LN FOR 675.81FT TO WLY BDY OF OLD NP/RR R/W TH S32*42 38W ALG SD WLY BDY 75.41FT TH N45*47 22W 42.86FT TO WLY BDY OF ESE TO CITY OF EV FOR RD & TPB TH CONT N45*47 22W 57.08FT TAP ON ARC OF CRV SD PT BEING 8FT SLY OF AS MEAS AT R/A TO C/L R/R SPUR TR TH ANG TO R 131*38 41 TO BECOME TANG TO CRV TH ON CRV TO L CONCENTRIC WITH & 8FT SLY OF C/L SD R/R SPUR TR HAV RAD 391.06FT & CONS ANG OF 11*07 05 FOR 75.88FT TO SD WLY BDY ESE TO CITY EV TH S32*42 38W ALG SD WLY BDY FOR 62.48FT TO TPB

Go to top of page

Treasurer's Tax Information

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Tax Information will be unavailable from January 11 through February 12 due to tax extension posting taxes and assessments. Tax Information should be available again on February 12.

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Assessor's Property Data

Characteristics and Value Data below are for 2008 tax year.

Please contact the Treasurer's office **for answers to questions about Taxes** (opens as new window)

For questions ONLY about property characteristics or property values (NOT taxes), please contact the Assessor's Office

Property Values

Values do not reflect adjustments made due to an exemption, such as a senior or disabled persons exemption.
Reductions for exemptions are made on the property tax bill.

Tax Year	2008	Market Land	$12,600	Market Improvement	$0	Market Total	$12,600

Go to top of page

Valuation and Property Tax History

View History (opens as new window)

Go to top of page

Property Characteristics

Tax Code Area (TCA) **00010** View Taxing Districts for this Parcel (opens as new window)

Use Code **910 Undeveloped (Vacant) Land**

Size Basis **ACRE** Size **0.03** (Size may include undivided interest in common tracts and road parcels)

Exemption **Government Property**

Go to top of page

Property Structures

No structures found for this parcel

Go to top of page

Property Sales since 7/31/1999

Explanation of Sales Information (opens as new window)

Sales data is based solely upon excise affidavits processed by the Assessor.

No sales for this parcel have been recorded since 7/31/1999

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Township **29** Range **05** Section **07** Quarter **NE** Find parcel maps for this Township/Range/Section

View Map of this parcel (opens as new window)

APPENDIX E

ECOLOGY'S DRAFT PUBLIC PARTICIPATION PLAN

Site Cleanup:

BAY WOOD PRODUCTS SITE

200 West Marine View Drive
Everett, Washington

PUBLIC PARTICIPATION PLAN

Prepared by:
Washington State Department of Ecology

WASHINGTON STATE
DEPARTMENT OF
ECOLOGY

August 2008

This plan is for you!

This Public Participation Plan is prepared for the Bay Wood Products Site cleanup as part of the requirement of the Model Toxics Control Act (MTCA). The plan provides information about MTCA cleanup actions and requirements for public involvement, and identifies how Ecology and the Port of Everett will support public involvement throughout the cleanup. The plan is intended to encourage coordinated and effective public involvement tailored to the community's needs at the Bay Wood Products Site.

For additional copies of this document, please contact:

Washington State Department of Ecology
Isaac Standen, Site Manager
Toxics Cleanup Program
PO Box 47600
Olympia, WA 98504-7600
(360) 407-7209
Email: ista461@ecy.wa.gov

If you need this publication in an alternate format, please call the Toxics Cleanup Program at (360) 407-7170. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call (877) 833-6341 (TTY).

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Appendix A: Fact Sheet for Agreed Order and Public Participation Plan

1.0: Introduction and Overview of the Public Participation Plan

This Public Participation Plan explains how you can become involved in improving the health of your community. It describes public participation opportunities that will be conducted during cleanup of a site on the Everett waterfront - the Bay Wood Products Site (Site). These opportunities are part of a cooperative agreement between the Washington State Department of Ecology (Ecology) and the Port of Everett (Port). The current agreement, called an Agreed Order, is a legal document in which the Port and Ecology agree to decide on cleanup actions for the Bay Wood Products Site. Bay Wood Products is located at 200 West Marine View Drive, on Port Gardner Bay, Everett, Washington.

Cleanup actions and the public participation process that helps guide them are established in Washington's Model Toxics Control Act (MTCA).[1] Under MTCA, Ecology is responsible for providing timely information and meaningful chances for the public to learn about and comment on important cleanup decisions before they are made. The goals of the public participation process are:

- To promote understanding of the cleanup process so that the public has the necessary information to participate.
- To encourage involvement through a variety of public participation opportunities.

This Public Participation Plan provides a framework for open dialogue about the cleanup among community members, Ecology, cleanup site owners, and other interested parties. It outlines basic MTCA requirements for community involvement activities that will help ensure that this exchange of information takes place during the investigation and cleanup, which include:

- Notifying the public about available reports and studies about the site.
- Notifying the public about review and comment opportunities during specific phases of the cleanup investigation.
- Providing appropriate public participation opportunities such as fact sheets to learn about cleanup documents, and if community interest exists, holding meetings to solicit input and identify community concerns.
- Considering public comments received during public comment periods.

[1] The Model Toxics Control Act (MTCA) is the hazardous waste cleanup law for the State of Washington. The full text of the law can be found in Revised Code of Washington (RCW), Chapter 70.105D. The legal requirements and criteria for public notice and participation during MTCA cleanup investigations can be found in Washington Administrative Code (WAC), Section 173-340-600.

In addition to these basic requirements, the plan may include additional site-specific activities to meet the needs of your community. Based upon the type of the proposed cleanup action, the level of public concern, and the risks posed by the site, Ecology may decide that additional public involvement opportunities are appropriate.

These opportunities form the basis for the public participation process. The intent of this plan is to:

- Provide complete and current information to all interested parties.
- Let you know when there are opportunities to provide input.
- Listen to concerns.
- Address those concerns.

Part of the Puget Sound Initiative

Bay Wood Products is one of several sites in the Everett area and is part of a larger cleanup effort called the Puget Sound Initiative (PSI). Governor Chris Gregoire and the Washington State Legislature authorized the PSI as a regional approach to protect and restore Puget Sound. The PSI includes cleaning up 50-60 contaminated sites within one-half mile of the Sound. These sites are grouped in several bays around the Sound for "baywide" cleanup efforts. As other sites in the Everett baywide area move forward into investigation and cleanup, information about them will be provided to the community as well as to interested people and groups.

Roles and Responsibilities

Ecology will lead public involvement activities, with support from the Port. Ecology maintains overall responsibility and approval authority for the activities outlined in this plan. The Port is responsible for cleanup at this site. Ecology will ultimately oversee all cleanup activities, and ensure that contamination on this site is cleaned up to concentrations that are established in state regulations and that protect human health and the environment.

Organization of this Public Participation Plan

The sections that follow in this plan provide:

- Section 2: Background information about the Bay Wood Products Site.
- Section 3: An overview of the local community that this plan is intended to engage.

- Section 4: Public involvement opportunities in this cleanup.

This Public Participation Plan addresses current conditions at the site, but it is intended to be a dynamic working document that will be reviewed at each phase of the cleanup, and updated as needed. Ecology and the Port urge the public to become involved in the cleanup process.

2.0: Site Background

Site Description and Location

The Bay Wood Products Site is generally located at 200 West Marine View Drive, in Everett, Snohomish County, Washington (see Figures 1 and 2). It is west of the Legion Memorial Golf Course and the American Legion Memorial Park (see Figure 1). The upland portion of the site is about 13 acres in size. It is bounded by the JELD-WEN facility (also a PSI cleanup site) to the south, mudflats to the north, Burlington Northern Railroad and West Marine View Drive to the east, and Port Gardner Bay to the west. The site is located in the vicinity of where the Snohomish River flows into Port Gardner Bay. It is currently vacant industrial property.

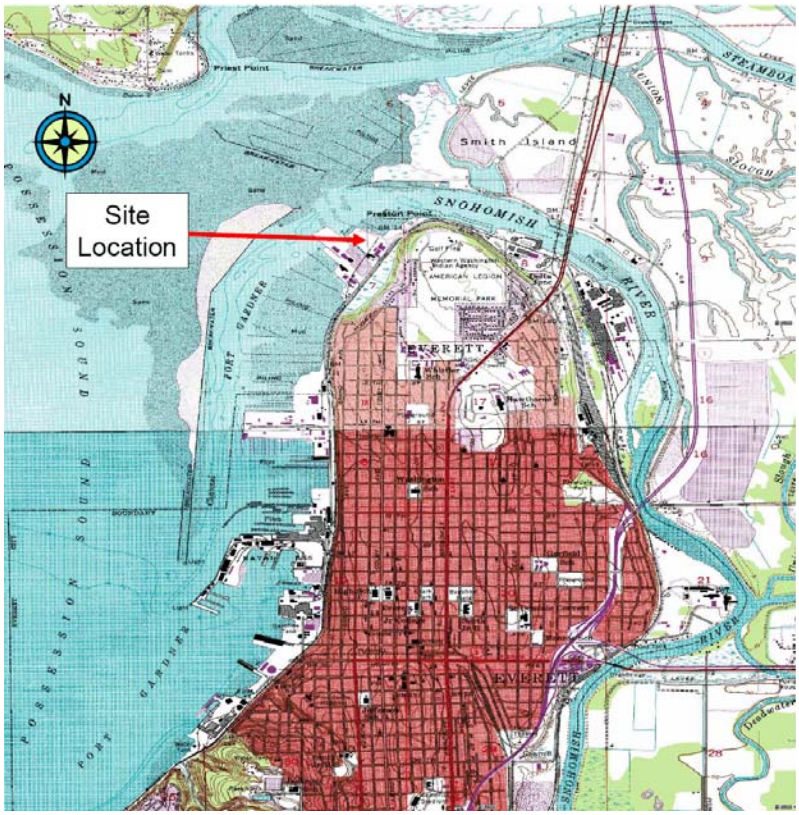


Figure 1: The Bay Wood Products Site, shown in the above map with an arrow, is generally located at 200 West Marine View Drive, on Port Gardner Bay, Everett, WA. (Photo Source: USGS 7.5 Minute Quadrangle Maps (Everett and Marysville Quadrangle Maps; Photo Revised – 1968 and 1973)

Figure 2: An enlarged view of the Bay Wood Products Site.
(Photo Source: Imagery: I-Cubed, 2006; Acquired: Via ArcGIS Explorer by ESRI on 1/25/2008)

The City of Everett Comprehensive Plan land use map[2] indicates that the site is zoned industrial, for maritime services. Zoning to the east includes a small agricultural area and residential single-family homes. Zoning to the west includes open water and parks (Jetty Island). The site is not located within the Everett Smelter area of historic arsenic contamination.

General Site History and Contaminants

The Bay Wood Products Site is located on fill that was placed in Port Gardner Bay. Lumber and mill operations began on this Site around 1936. In 1979, Bay Wood Products removed the sawmill and used the Site for log handling and storage until 1994. Site features during Bay Wood Products operations included office and shop buildings, a covered shed, oil drums, electrical transformers, above-ground fuel storage tanks, and log rafts. These features have been removed, and the Site is currently vacant. The following contaminants have been found on the Site in upland soil:

- Polychlorinated biphenyls (PCBs).
- Petroleum products.

[2] Planning and Community Development, City of Everett, WA
http://www.everettwa.org/Get_PDF.aspx?pdfID=339 (Accessed January 24, 2008)

In addition, wood waste was also found in upland soil and adjacent in-water areas (imbedded in the sediments). Wood waste smothers near-shore habitat and animals such as clams, and can cause changes in water chemistry that can harm marine and sediment ecosystems.

PCB-contaminated soil was removed from the Site in 1985 and 1993. Much of the wood waste accumulated in the upland portion of the Site was removed in 1995. However, Ecology believes more study is needed to fully characterize the contamination at the Bay Wood Products Site.

The Cleanup Process

Washington State's cleanup process and key opportunities for you to provide input are outlined in Figure 3. The general cleanup process includes the following steps:

- Remedial Investigation (RI) - investigates the site for types, locations, and amounts of contaminants.
- Feasibility Study (FS) - identifies cleanup options for those contaminants.
- Cleanup Action Plan (CAP) - selects the preferred cleanup option and explains how cleanup will be conducted.

Each of these steps will be documented in reports and plans that will be available for public review. Public comment periods of at least 30 calendar days are usually conducted for the following documents:

- Draft RI report
- Draft FS report
- Draft CAP

These cleanup steps and documents are described in greater detail in the following subsections.

Interim Actions

Interim actions may be conducted during the cleanup if required by Ecology. An interim action partially addresses the cleanup of a site, and may be required if:

- It is technically necessary to reduce a significant threat to human health or the environment.
- It corrects a problem that may become substantially worse or cost substantially more to fix if delayed.
- It is needed to complete another cleanup activity, such as design of a cleanup plan.

Interim actions are not currently anticipated on the Bay Wood Products Site.

Remedial Investigation/Feasibility Study Report

The Port has agreed to conduct an RI on the Site. The RI determines which contaminants are on the Site, where they are located, and whether there is a significant threat to human health or the environment. The draft RI report provides baseline data about environmental conditions that will be used to develop cleanup options. The FS and report then identify and evaluate cleanup options, in preparation for the next step in the process.

The RI and FS processes typically include several phases:

- Scoping.
- Site characterization.
- Development and screening of cleanup alternatives.
- Treatability investigations (if necessary to support decisions).
- Detailed analysis.

The RI and FS reports are expected to be combined into a draft Bay Wood Products Site RI/FS report. The draft report is anticipated to be completed in late 2009 or early 2010 and will be made available for public review and comment.

Cleanup Action Plan

The Port and Ecology have agreed to develop a CAP for the site. After public comment on the draft RI/FS report, a preferred cleanup alternative will be selected. The draft CAP explains the cleanup standards that will be applied at the site, selects the preferred cleanup alternative(s), and outlines the work to be performed during the actual site remediation. The CAP may also evaluate the completeness and effectiveness of any interim actions that were performed on the site. The draft CAP will be available for public review and comment. Once public comments are reviewed and any changes are made, Ecology provides final approval and site cleanup can begin. Cleanup is anticipated to be completed in spring 2011.

3.0: Community Profile

Community Profile

Everett is Snohomish County's largest city and the sixth largest city in the State of Washington. The current population of Everett is approximately 98,000[3] situated within 47.7 square miles. Located on Port Gardner Bay, Everett hosts the West Coast's second largest marina, U.S. Navy Homeport Naval Station Everett, and The Boeing Company's assembly plant. The city's 2006 labor workforce was more than 80,000, employed predominantly in technology, aerospace, and service-based industries.[4]

Key Community Concerns

An important part of the Public Participation Plan is to identify key community concerns for each cleanup site. The Bay Wood Products Site is located near a residential area. The proximity of the community to the site is likely to raise questions about how daily life and the future of the community will be affected during and after cleanup of the site.

Many factors are likely to raise community questions, such as the amount of contamination, how the contamination will be cleaned up, or future use of the site. Community concerns often change over time, as new information is learned and questions are answered. Identifying site-specific community concerns at each stage of the cleanup process is helpful to ensure that they are adequately addressed. On-going key community concerns will be identified for the Bay Wood Products Site through public comments and other opportunities as detailed in Section 4.

[3] US Census Bureau, City & Towns Estimates Data for July 1, 2006. http://www.census.gov/popest/estimates.php (Accessed September 12, 2007)
[4] City of Everett. http://www.everettwa.org/default.aspx?ID=314 (Accessed September 12, 2007)

4.0: Public Participation Opportunities

Ecology and the Port invite you to share your comments and participate in the cleanup in your community. As we work to meet our goals, we will evaluate whether this public participation process is successful. This section describes the public participation opportunities for this site.

Measuring Success

We want this public participation process to succeed. Success can be measured, at least in part, in the following ways:

- Number of written comments submitted that reflect understanding of the cleanup process and the site.
- Direct "in-person" feedback about the site cleanup or public participation processes, if public meetings are held.
- Periodic updates to this plan to reflect community concerns and responses.

If we are successful, this process will increase:

- Community awareness about plans for cleanup and opportunities for public involvement.
- Public participation throughout the cleanup.
- Community understanding regarding how their input will be considered in the decision-making process.

Activities and Information Sources

Ecology Contacts

Ecology is the lead contact for questions about the cleanup in your community. The Ecology staff person identified in this section is familiar with the cleanup process and activities at the site. For more information about public involvement or the technical aspects of the cleanup, please contact:

Isaac Standen
Ecology Site Manager
WA State Dept. of Ecology
Toxics Cleanup Program
P.O. Box 47600
Olympia, WA 98504-7600
Phone: (360) 407-6776

E-mail: ista461@ecy.wa.gov

Ecology's Webpage

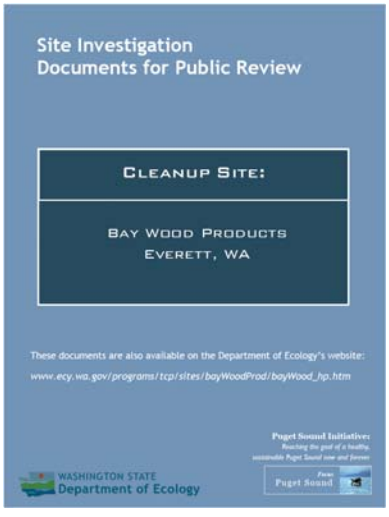
Ecology has created a webpage to provide convenient access to information. Documents such as the Agreed Order, draft reports, and cleanup plans, are posted as they are issued during the investigation and cleanup process. Visitors to the webpage can find out about public comment periods and meetings; download, print, and read information; and submit comments via e- mail. The webpage also provides links to detailed information about the MTCA cleanup process. The Bay Wood Products Site webpage is available at the following address:
http://www.ecy.wa.gov/programs/tcp/sites/bayWoodProd/bayWood_hp.htm

Information Centers/Document Repositories

The most comprehensive source of information about the Bay Wood Products Site is the information center, or document repository. Two repositories provide access to the complete list of site-related documents. All Bay Wood Products investigation and cleanup activity reports will be kept in print at those two locations and will be available for your review. They can be requested on compact disk (CD) as well. Document repositories are updated before public comment periods to include the relevant documents for review. Documents remain at the repositories throughout the investigation and cleanup. For this site, the document repositories and their hours are:

- **Everett Public Library**
  2702 Hoyt Ave.
  Phone: (425) 257-8010
  Hours: Mon.-Wed. 10 a.m.-9 p.m.,
  Thurs.-Sat. 10 a.m.-6 p.m., Sun. 1-5 p.m.

- **WA Department of Ecology Headquarters**
  300 Desmond Drive SE
  Lacey, WA 98503
  By appointment. Please contact Carol Dorn at (360) 407-7224 or cesg461@ecy.wa.gov.



Look for document covers such as the illustration on the right.

Public Comment Periods

Public comment periods provide opportunities for you to review and comment on major documents, such as the Agreed Order, draft Public Participation Plan, and the draft RI/FS report. The typical public comment period is 30 calendar days.

Notice of Public Comment Periods

Notices for each public comment period will be provided by local newspaper and by mail. These notices indicate the timeframe and subject of the comment period, and explain how you can submit your comments. For the Bay Wood Products Site, newspaper notices will be posted in The Daily Herald.

Notices are also sent by regular mail to the local community and interested parties. The community typically includes all residential and business addresses within one-quarter mile of the site, as well as potentially interested parties such as public health entities, environmental groups, and business associations.

Fact Sheets

One common format for public comment notification is the fact sheet. Like the newspaper notice, fact sheets explain the timeframe and purpose of the comment period, but also provide background and a summary of the document under review. A fact sheet has been prepared for the Bay Wood Products Site explaining the Agreed Order and this Public Participation Plan (See Appendix A). Future fact sheets will be prepared at key milestones in the cleanup process.

MTCA Site Register

Ecology produces an electronic newsletter called the MTCA Site Register. This semi-monthly publication provides updates of the cleanup activities occurring throughout the state, including public meeting dates, public comment periods, and cleanup-related reports. Individuals who would like to receive the MTCA Site Register can sign up three ways:

- Call (360) 407-6069
- Send an email request to ltho461@ecy.wa.gov or
- Register on-line at http://www.ecy.wa.gov/programs/tcp/pub_inv/pub_inv2.html

Mailing Lists

Ecology maintains both an e-mail and regular mail distribution list throughout the cleanup process. The list is created from carrier route delineations for addresses within one-quarter mile of the site, potentially interested parties, public meeting sign-in sheets,

and requests made in person, or by regular mail or e-email. You may request to be on the mailing list by contacting the Ecology staff person listed earlier in this section.

Optional Public Meetings

A public meeting will be held during a comment period if requested by ten or more people, or if Ecology decides it would be useful. Public meetings provide additional opportunity to learn about the investigation or cleanup, and to enhance informed comment. If you are interested in a public meeting about the Bay Wood Products Site, please contact the Ecology staff person listed earlier in this section.

Submitting Comments

You may submit comments by regular mail or e-mail during public comment periods to the Ecology project manager listed earlier in this section.

Response to Comments

Ecology will review all comments submitted during public comment periods, and will modify documents as necessary. You will receive notice by regular mail or e-mail that Ecology has received your comments, along with an explanation about how the comments were addressed.

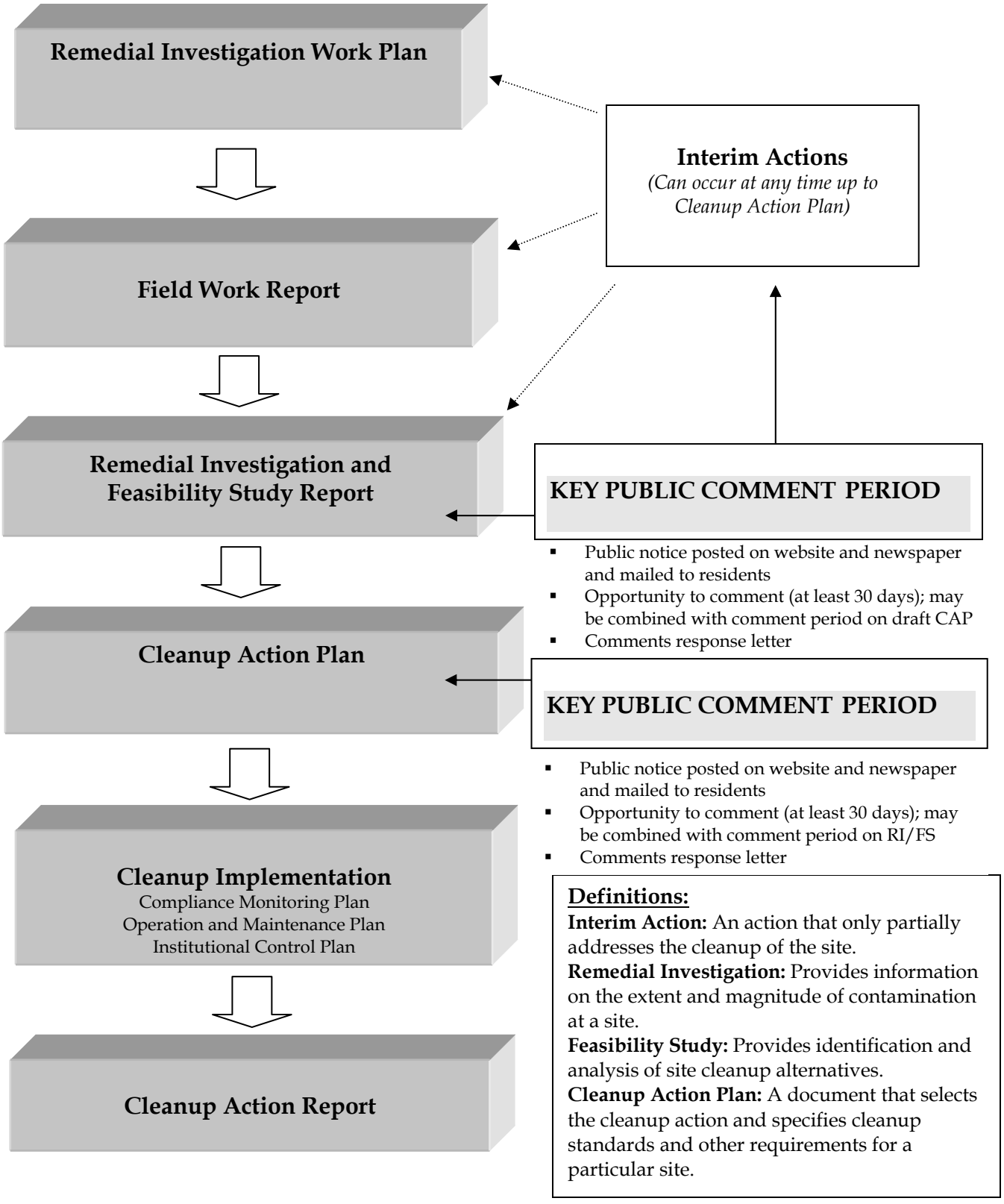
Other

Ecology and the Port are committed to the public participation process and will consider additional means for delivering information and receiving comments, including combining public comment periods for other actions (such as those associated with the State Environmental Policy Act).

Public Participation Grants

You may be eligible to apply for a Public Participation Grant from Ecology to provide additional public participation activities. Those additional activities will not reduce the scope of the activities defined by this plan. Activities conducted under this plan would coordinate with the additional activities defined under the grant.

Figure 3: Washington State Cleanup Process



Glossary

Cleanup: The implementation of a cleanup action or interim action.

Cleanup Action: Any remedial action except interim actions, taken at a site to eliminate, render less toxic, stabilize, contain, immobilize, isolate, treat, destroy, or remove a hazardous substance that complies with MTCA cleanup requirements, including but not limited to: complying with cleanup standards, utilizing permanent solutions to the maximum extent practicable, and including adequate monitoring to ensure the effectiveness of the cleanup action.

Cleanup Action Plan: A document that selects the cleanup action and specifies cleanup standards and other requirements for a particular site. The cleanup action plan, which follows the remedial investigation/feasibility study report, is subject to a public comment period. After completion of a comment period on the cleanup action plan, Ecology finalizes the cleanup action plan.

Cleanup Level: The concentration (or amount) of a hazardous substance in soil, water, air, or sediment that protects human health and the environment under specified exposure conditions. Cleanup levels are part of a uniform standard established in state regulations, such as MTCA.

Cleanup Process: The process for identifying, investigating, and cleaning up hazardous waste sites.

Contaminant: Any hazardous substance that does not occur naturally or occurs at greater than natural background levels.

Feasibility Study: Provides identification and analysis of site cleanup alternatives and is usually completed within a year. Evaluates sufficient site information to enable the selection of a cleanup action. The entire Remedial Investigation/Feasibility Study (RI/FS) process takes about two years and is followed by the cleanup action plan.

Hazardous Site List: A list of ranked sites that require further remedial action. These sites are published in the Site Register.

Interim Action: Any remedial action that partially addresses the cleanup of a site. It is an action that is technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance at a facility; an action that corrects a problem that may become substantially worse or cost substantially more to address if the action is delayed; an action needed to provide for completion of a site hazard assessment, state remedial investigation/feasibility study, or design of a cleanup action.

Model Toxics Control Act: Refers to Chapter 70.105D RCW. Voters approved it in November 1988. The implementing regulation is found in Chapter 173-340 WAC.

Public Notice: At a minimum, adequate notice mailed to all persons who have made a timely request of Ecology and to persons residing in the potentially affected vicinity of the proposed action; mailed to appropriate news media; published in the local (city or county) newspaper of largest circulation; and the opportunity for interested persons to comment.

Public Participation Plan: A plan prepared under the authority of WAC 173-340-600 to encourage coordinated and effective public involvement tailored to the public's needs at a particular site.

Release: Any intentional or unintentional entry of any hazardous substance into the environment, including, but not limited to, the abandonment or disposal of containers of hazardous substances.

Remedial Action: Any action or expenditure consistent with MTCA to identify, eliminate, or minimize any threat posed by hazardous substances to human health or the environment, including any investigative and monitoring activities of any release or threatened release of a hazardous substance, and any health assessments or health effects studies conducted in order to determine the risk or potential risk to human health.

Remedial Investigation: Any remedial action that provides information on the extent and magnitude of contamination at a site. This usually takes 12 to 18 months and is followed by the feasibility study. The purpose of the Remedial Investigation/Feasibility Study is to collect and develop sufficient site information to enable the selection of a cleanup action.

ATTACHMENT 1

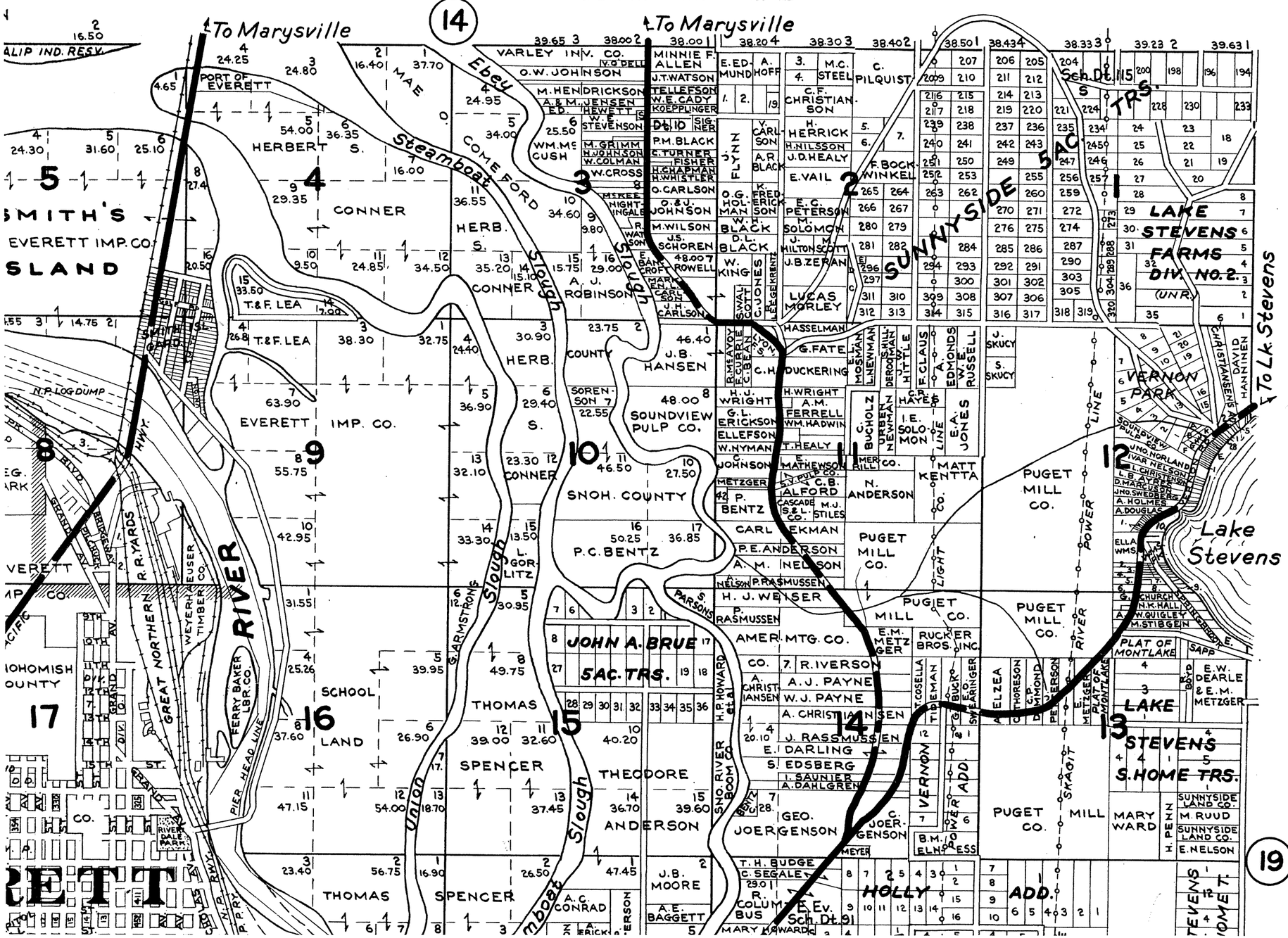
SANBORN MAPS

1936

TOWNSHIP 29N., RANGE 5E. W. M.

SNOHOMISH COUNTY, WASHINGTON

SCALE 2 IN. - 1 MILE



SHORELAND OWNERSHIPS

1-SULTAN RWY.& TIMBER CO.
2-IRVING DOUGHERTY MILL
3-PARKER LBR.& MILL COMPANY
4-SOUND CASKET MFG. COMPANY
5-NATIONAL POLE CO.
6-K.K.TIMBER CO.
7-EVERBEST SHINGLE CO.
8-CLOUGH SHINGLE CO.
9-NORTHWESTERN MFG. CO.
10-CARLSON BROS. CO.
11-EVERBEST SHINGLE CO.
12-ROBINSON MFG. CO.
13-PUGET SOUND PULP & TBR CO.
14-ASSOC. OIL CO.
15-AMER. PACKING CO.
16-NOR. PAC R.R.
17-WEYERHAEUSER TIMBER CO. MILL "A"
18-FISHERMANS PACKING CO.
19-EVERETT DOCK & WHSE. CO.
20-PIER NO. 1.
21-STANDARD OIL DOCK

SMALL TRACTS

SEC. 2.
1-2-M. BRITTON
3-C. CARLSON et al
4-H. OVERSON
5-C.C. CARLSON
6-A.E. CARLSON
7-M.P. CARLSON
19-S. SEIBERT

SEC. 8.
1-AMER. SMELTING & REFINING CO.
2-WEYER. TBR. CO.
3-WEYER. TBR. & MILL COMPANY

SEC. 11
42-SOUNDVIEW PULP CO.

SEC. 12
1-S.E. BARGREEN
2-E. STRICKLAND
3-M. WRIGHT
4-T. McINTYRE
5-C.N. MIMS
6-A.E. GILBERT
7-J. PURDY
8-A.E. GILBERT
9-A. HALL
10-J. TITCOMB

SEC. 14
7-S. EDSBERG

SEC. 21.
8-SUMNER IRON WORKS
9-THE MYCHEL CO.

SEC 23.
9-ERIC JOSEPHSON
10-A. ABRAHAMSON
11-J. DUCKERING
20-D. J. DUCKERING

SEC. 24
12-ZORA M. MORRIS
13-FRANK GILLESPIE
14-F.L. GILLESPIE

SEC. 25
15-W.T. ROBERTS

SEC 26
21-R.&J. MARQUIE

SEC. 28
22-U.S. FIDELITY & GUARANTEE CO.

SEC. 30
16-T. GOLDSBY
17-S.J. NERDRUM
24-I.B. VESTAL et al
200-B. TASTAD
201-P. RINGDAL
202-203-204-"
205-E. TJELSNES
206-L. SNYDER
207-MARY KINSEY
208-F.L. WHITTAKER
209-J.A. GARDNER
210-" " "
211-F.E. HENKE
212-LAURA MOORE
213-C.H. GAITHER
214-F.E. HENKE
215-RUTH SATHER
216-F.L. WHITTAKER
217-J.C. RAYMOND
218-C.A. DUEHN
219-W.H. VAUGN
220-A.H. WARREN
221-J. WICKLUND
222-S.O. " "
223-SCH. DT. 115
224-225-B.D. MORTON
226-O. GRINDE
227-228-C.J. WENHOLM
229-S. PEVNY
230-J. RUSSELL
231-232-G. TURCOTT
233-H. P. ZENDEN
234-E.C. JOHNSON
235-A.H. RICHARDSON
236-A.H. WARREN
237-WM. HADWIN
238-J.D. HARMES
239-LOAN & SECUR. CO.
240-B. GRONDAHL
241-A. PERSON
242-B.A. PARKER
243-W.E. CLARK
244-E. CUSHING
245-246-ANNA JOHNSON
247-A.P. ANDERSON
248-HILDA SMITH
249-H. KALLICOTT
250-E.A. MACKLIN
251-G.H. BROWN
252-E.L. ALEITH
253-S.R. SHERWOOD
E. 330' of 254-A GABRIELSON
254 exc. E. 330'-S.A. AMSDAL

SEC. 12
255-W.K. McFARLANE
256-W.O. WICKSTROM Blk. 3
257-CITY OF SEATTLE
258-L. ANDERSON
259-FRANK GREEN
260-W.K. McFARLANE
261-G. LARSEN
262-T.F. DAHLBECK
263-C. FINDLEY
264-L.A. FOSKER
265-G.M. TURNER
266-AUG. & ANNE FALQUIST
267-L.A. FOSKER
268-H. NEWMAN
269-S. BLOOMQUIST
270-R. ANDERSON
271-MAUDE HARVEY
272-FRANK GREEN
273-E. GREEN
274-W.E. CLARK
N. 50' of 275-C.S. MOORE
275 exc. N. 50'-P. LEFFLER
276-W.R. REDDOCK
277-T. KALLICOT
278-U. KALLICOT
279-H. ANDERSON
280-AUG. FALQUIST
281-J.G. ANDERSON
282-U.R. PUCKETT
283-K. KALLICOT
284-H.H. BERGBY
285-C.M. TASTAD
286-P. LEFFLER
287-S. AUSTBY
288-B. SHARPLESS

VERNON PARK

SEC. 12.
1-C.C. GILMAN
2-N. MOON et al
3-E. METZGER
4-5-A. MINCH
6-H.T. COLLINS
7-B. JOHNSON
8-LOAN & SEC. CO. et al
9-E. METZGER et al
10-exc. S. 125'-M. KNUDSON
S. 125' of 10-J.A. WHILLANS
11-C. THORESON
12-less N. 139'-JAS. FLYNN
N. 139' of 12-A.E. LINDBLAD
13-WM. MALLARD
14-E. MILLER
15-WM. MALLARD
16-M. HURLEY
17. E. LOWER
18-19-C. THORESON
20-J.T. KING
21-O. JOHNSON
A-T.P. HEALY
B-SOUNDVIEW PULP CO.
C-E. MILLER
TRACT E
1-2-R.L. WARNOCK
3-4-5-C. GILMAN
6 to 9-C. LANGLAND
10-11-F. PINK
12-C. THEURER
13-B. CARTER
14-15-A. MINCH
16-17-J. HUTTER
18-19-N. MOON et al
20-L. PARKS
21-22-A. NILSSON
23 to 28-E. MILLER
F-R.L. WARNOCK
G-E.F. PARDEE
N. ½ of H-B. CARTER
S. ½ of H-CORA THEURER
J-K-JOS. HUTTER

LAKE STEVENS SUMMER HOME TRACTS

SEC 5. 13-24

Blk. 3
1-A. GARNER
2-E. THORNTON
3-4-INTERURBAN REALTY CO.

Blk. 4-
1-INTERURBAN REALTY CO.
2-3-M.P. PHILLIPS
4-E.M. METZGER

Blk 5.
E. ½ of E. ¾ of 1+2-C. FAIRCHILD
W. ½ of E. ¾ of 1+2-V. SELLIN
W. ¼ of 1+2-E. ARMACK
W. ¼ of 3-E. ARMACK
E. ¾ of 3-D. THORN
W. ¼ of 4-E. ARMACK
E. ¾ of 4-L. EIDSVICK

Blk. 12
1-SUNNYSIDE LD. CO.
2-J. SWANSON
3-C. BERGSTROM
4-W. BLACK EST.

Blk. 17.
1-E.M. METZGER
2-H. " "
3-R. MUNGER
4-E.C. METZGER

VERNON ADD.

SEC. 14
1-2-4 toll:

1936

FOR SALE BY

CHAS. F. METSKER, CIVIL ENGINEER
514 S. W. OAK STREET, PORTLAND, OREGON
930½ PACIFIC AVE., TACOMA, WASHINGTON
1120 THIRD AVE., SEATTLE, WASHINGTON

TOWNSHIP 2
SNOHOMISH

EVERETT

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Sanborn® Library search results
Certification # 1085-4C6B-87C2

JELD-WEN Nord Door
300 West Marine View Drive
Everett, WA 98201

Inquiry Number 1971200.1s

July 06, 2007

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Rd
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Certified Sanborn® Map Report

7/06/07

Site Name:
JELD-WEN Nord Door
300 West Marine View Drive
Everett, WA 98201

Client Name:
SLR International Corp
1800 Blankenship Road
West Linn, OR 97068-0000

EDR Inquiry # 1971200.1s

Contact: Emily Goodwin

EDR® Environmental Data Resources Inc

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Site Name: JELD-WEN Nord Door
Address: 300 West Marine View Drive
City, State, Zip: Everett, WA 98201
Cross Street:
P.O. # 008.0228.00026
Project: JELD-WEN Nord D
Certification # 1085-4C6B-87C2

Sanborn® Library search results
Certification # 1085-4C6B-87C2

Maps Identified - Number of maps indicated within "( )"

1968 (2)
1957 (2)

Total Maps: 4

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- ☑ University Publications of America
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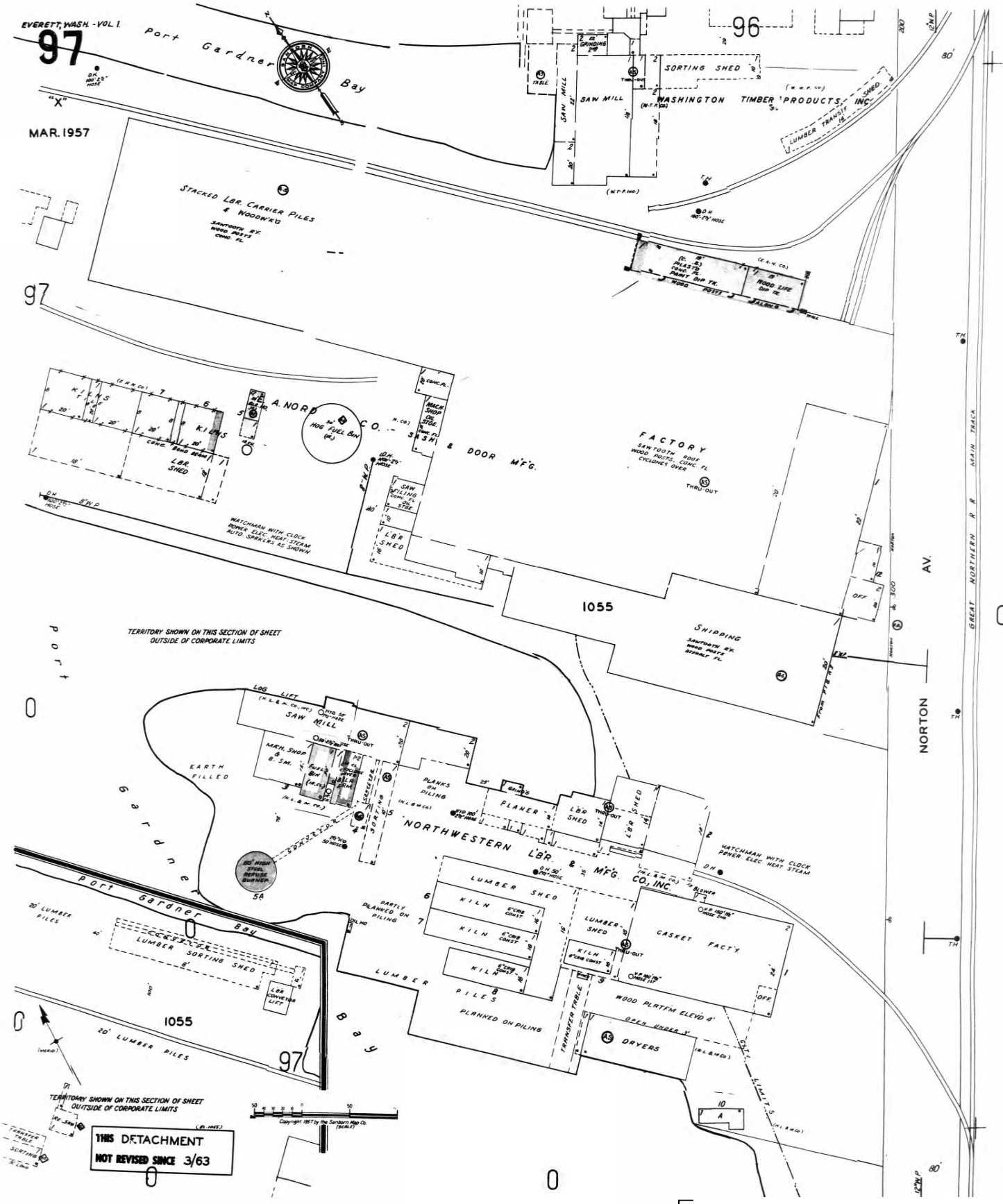

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Certification # 1085-4C6B-87C2

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EDR Inquiry: 1971200.1s
Client: SLR International Corp

Site Name: JELD-WEN Nord Door
Address: 300 West Marine View Drive

City, ST, ZIP: Everett WA 98201
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Research Associate: SES
Copyright: 1968

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Site Name: JELD-WEN Nord Door
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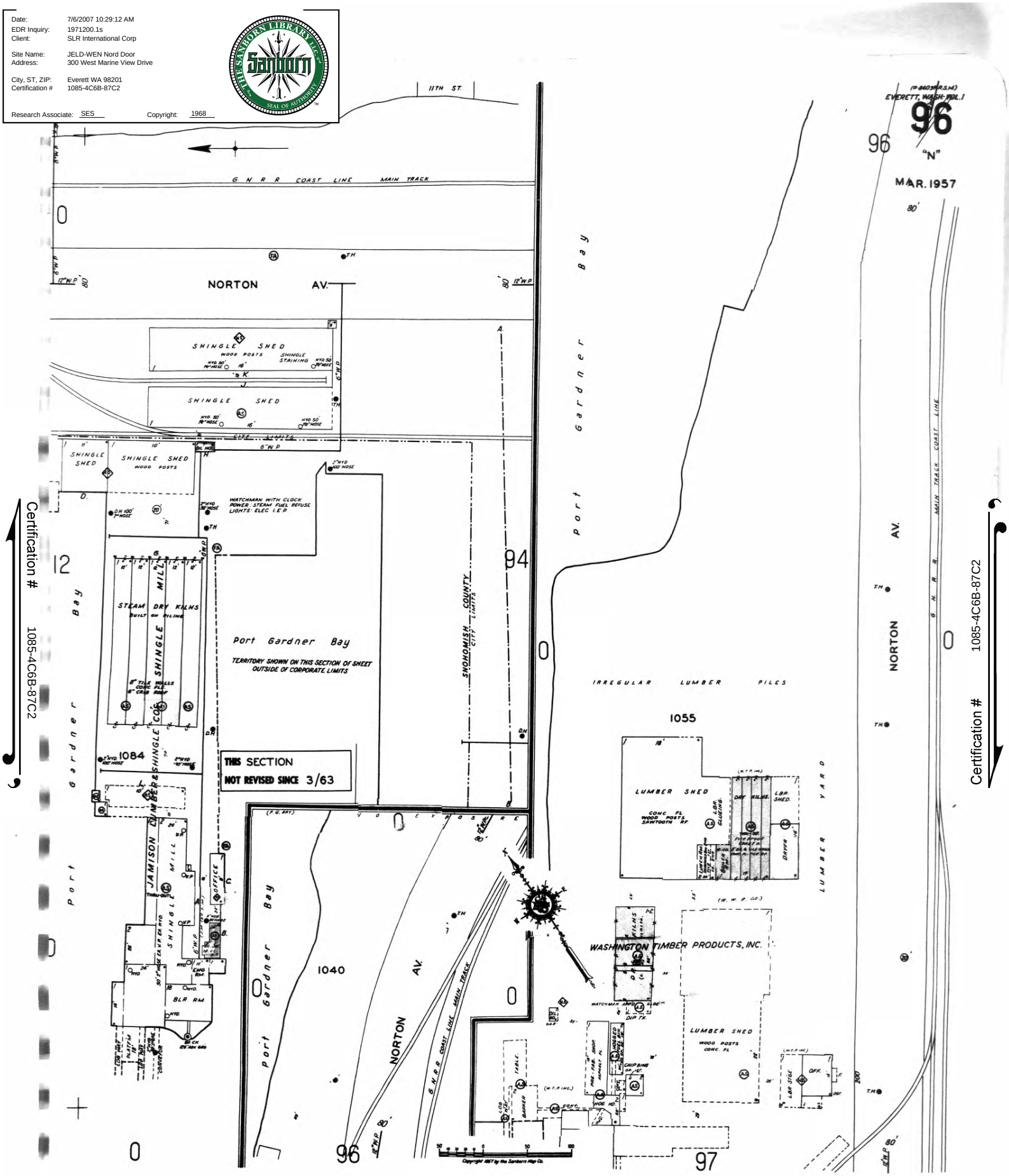
Research Associate: SES Copyright: 1968



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Certification # 1085-4C6B-87C2

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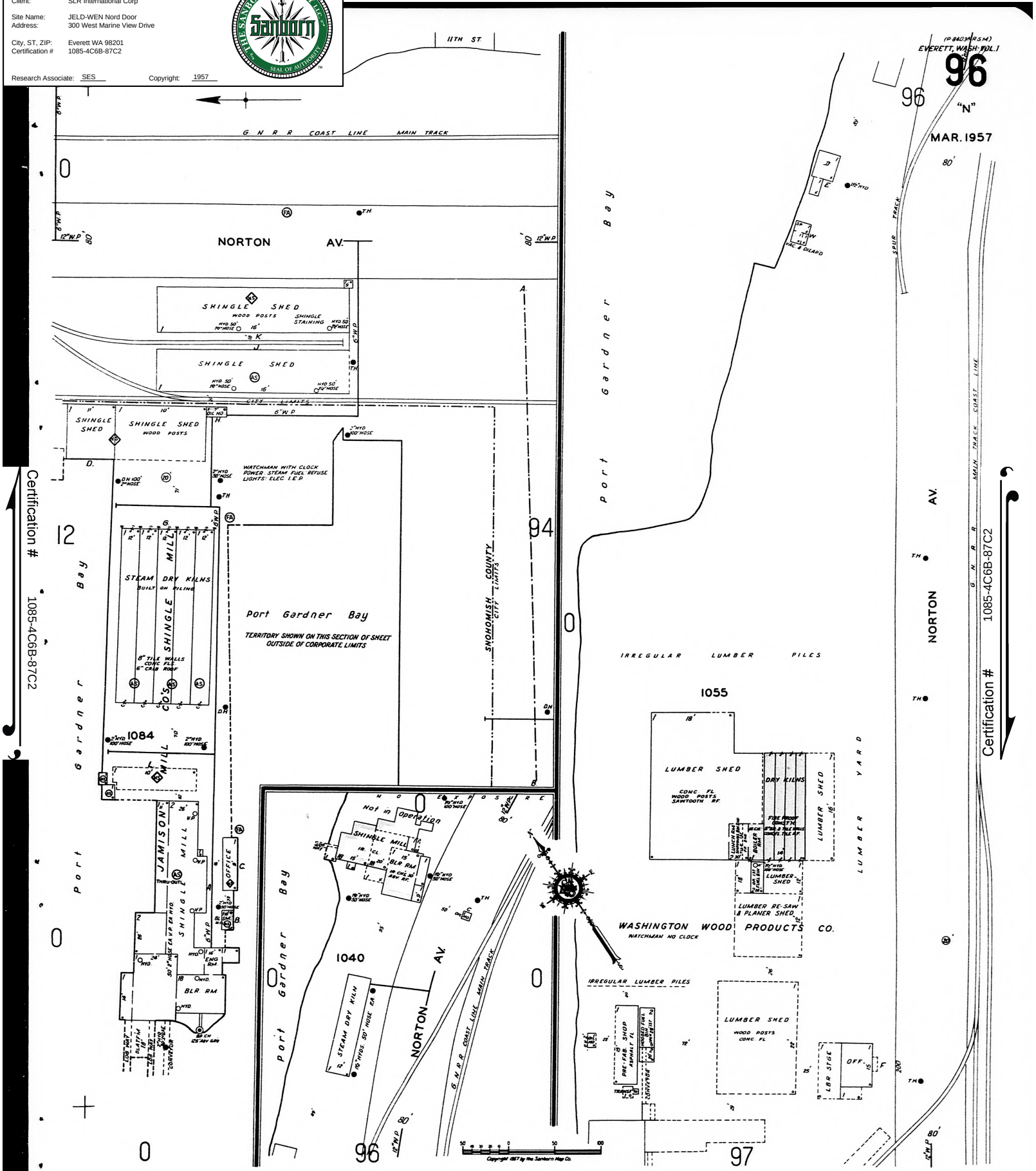
Site Name: JELD-WEN Nord Door
Address: 300 West Marine View Drive

City, ST, ZIP: Everett WA 98201
Certification # 1085-4C6B-87C2

Research Associate: SES Copyright: 1957



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Certification # 1085-4C6B-87C2

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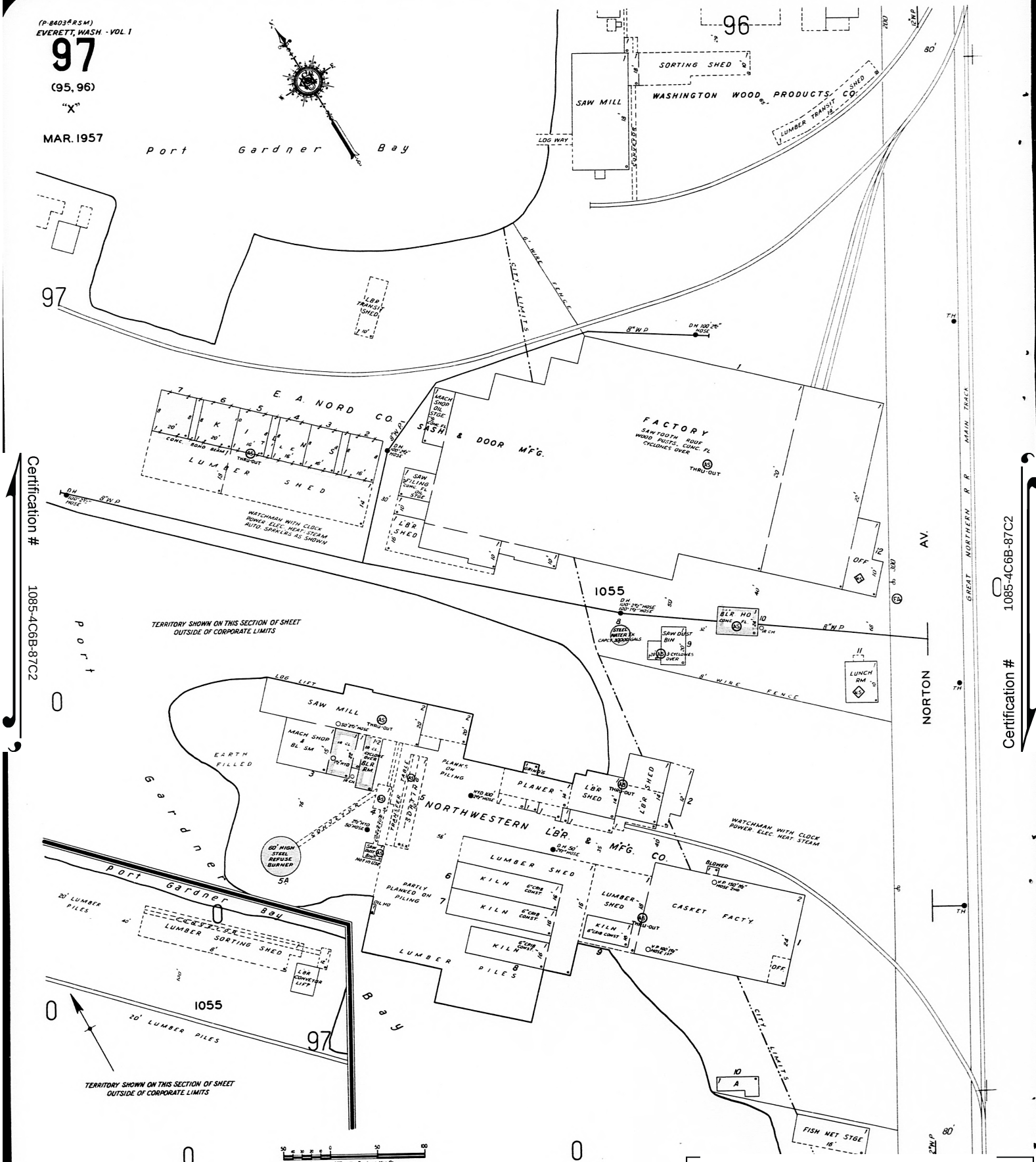
EVERETT, WASH. - VOL. 1
97
(95, 96)
"X"
MAR. 1957



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Date:	7/6/2007 10:29:12 AM
EDR Inquiry:	1971200.1s
Client:	SLR International Corp
Site Name:	JELD-WEN Nord Door
Address:	300 West Marine View Drive
City, ST, ZIP:	Everett WA 98201
Certification #	1085-4C6B-87C2
Research Associate:	SES
Copyright:	1957

ATTACHMENT 2

SOIL AND GROUNDWATER PCL CALCULATIONS

Table 1
Groundwater Preliminary Cleanup Levels
SVOCs and PAHs
Bay Wood Products Site, Port of Everett
Everett, WA

CAS #	Analyte	Calculated Groundwater Preliminary Cleanup Level (PCL) [A] (µg/L)	Reference [B]	Laboratory Practical Quantitation Limit (PQL) [C] (µg/L)	Selected PCLs [D]
	Semivolatile Organic Compounds (SVOCs) [E]				
208-96-8	**acenaphthylene**	NA	NA	10	10
98-86-2	**acetophenone**	800	Groundwater Method B	1	800
1912-24-9	**atrazine**	0.4	Groundwater Method B	1	1
100-52-7	**benzaldehyde**	800	Groundwater Method B	10	800
92-52-4	**biphenyl; 1,1'-**	400	Groundwater Method B	1	400
111-44-4	**bis(2-chloroethyl)ether**	0.3	Surface Water ARAR	1	1
111-91-1	**bis(2-chloroethoxy) methane**	NA	NA	1	1
39638-32-9	**bis(2-chloroisopropyl) ether**	1,400	Surface Water ARAR	1	1,400
108-60-1	**bis(2-chloro-1-methylethyl)ether**	37	Surface Water Method B	1	37
117-81-7	**bis(2-ethylhexyl) phthalate**	1.2	Surface Water ARAR	1	1.2
101-55-3	**p-Bromodiphenyl ether**	NA	NA	1	1
85-68-7	**butylbenzylphthalate**	1,300	Surface Water Method B	1	1,300
105-60-2	**caprolactam**	8,000	Groundwater Method B	10	8,000
86-74-8	**carbazole**	4.4	Groundwater Method B	1	4.4
59-50-7	**chloro-3-methylphenol;4-**	NA	NA	1	1
106-47-8	**chloroaniline;4-**	32	Groundwater Method B	1	32
95-57-8	**chlorophenol;2-**	97	Surface Water Method B	1	97
91-58-7	**chloronaphthalene;2-**	1,000	Surface Water ARAR	1	1,000
7005-72-3	**chlorophenyl-phenyl ether;4-**	NA	NA	1	1
132-64-9	**dibenzofuran**	32	Groundwater Method B	1	32
91-94-1	**dichlorobenzidine;3,3-**	0.021	Surface Water ARAR	1	1
120-83-2	**dichlorophenol;2,4-**	77	Surface Water ARAR	1	77
84-66-2	**diethyl phthalate**	17,000	Surface Water ARAR	1	17,000
131-11-3	**dimethyl phthalate**	72,000	Surface Water Method B	1	72,000
105-67-9	**dimethylphenol;2,4-**	380	Surface Water ARAR	10	380
84-74-2	**di-n-butylphthalate**	2,000	Surface Water ARAR	1	2,000
117-84-0	**di-n-octylphthalate**	320	Groundwater Method B	1	320
534-52-1	**dinitro-2-methylphenol: 4,6-**	NA	NA	10	10
51-28-5	**dinitrophenol;2,4-**	69	Surface Water ARAR	10	69
121-14-2	**dinitrotoluene;2,4-**	0.11	Surface Water ARAR	10	10
606-20-2	**dinitrotoluene;2,6-**	16	Groundwater Method B	10	16
118-74-1	**hexachlorobenzene**	0.00028	Surface Water ARAR	1	1
87-68-3	**hexachlorobutadiene**	0.44	Surface Water ARAR	1	1
77-47-4	**hexachlorocyclopentadiene**	40	Surface Water ARAR	10	40
67-72-1	**hexachloroethane**	1.4	Surface Water ARAR	1	1.4
78-59-1	**isophorone**	8.4	Surface Water ARAR	1	8.4
91-57-6	**methylnaphthalene; 2**	32	Groundwater Method B	1	32
95-48-7	**methylphenol;2-**	400	Groundwater Method B	10	400
108-39-4	**methylphenol; 3-**	400	Groundwater Method B	10	400
106-44-5	**methylphenol;4-**	40	Groundwater Method B	10	40
88-74-4	**nitroaniline;2-**	NA	NA	10	10
99-09-2	**nitroaniline;3-**	NA	NA	10	10
100-01-6	**nitroaniline;4-**	NA	NA	1	1
98-95-3	**nitrobenzene**	17	Surface Water ARAR	1	17
88-75-5	**nitrophenol;2-**	NA	NA	10	10
100-02-7	**nitrophenol;4-**	NA	NA	10	10
86-30-6	**nitrosodiphenylamine; N-**	3.3	Surface Water ARAR	1	3.3
621-64-7	**nitroso-di-n-propylamine;N-**	0.005	Surface Water ARAR	1	1
87-86-5	**pentachlorophenol**	0.27	Surface Water ARAR	10	10
108-95-2	**phenol**	21,000	Surface Water ARAR	10	21,000
95-94-3	**tetrachlorobenzene;1,2,4,5-**	0.97	Surface Water ARAR	1	1
58-90-2	**tetrachlorophenol;2,3,4,6-**	480	Groundwater Method B	10	480
95-95-4	**trichlorophenol;2,4,5-**	1,800	Surface Water ARAR	1	1,800
88-06-2	**trichlorophenol;2,4,6-**	1.4	Surface Water ARAR	1	1.4
	Carcinogenic Polycyclic Aromatic Compounds (cPAHs) [F]				
56-55-3	**benzo[a]anthracene**	0.0028	Surface Water ARAR	0.1	0.1
50-32-8	**benzo[a]pyrene**	0.0028	Surface Water ARAR	0.1	0.1
205-99-2	**benzo[b]fluoranthene**	0.0028	Surface Water ARAR	0.1	0.1
207-08-9	**benzo[k]fluoranthene**	0.0028	Surface Water ARAR	0.1	0.1
218-01-9	**chrysene**	0.0028	Surface Water ARAR	0.1	0.1
53-70-3	**dibenzo[a,h]anthracene**	0.0028	Surface Water ARAR	0.1	0.1
193-39-5	**indeno[1,2,3-cd]pyrene**	0.0028	Surface Water ARAR	0.1	0.1
	Non-Carcinogenic PAHs (PAHs) [F]				
83-32-9	**acenaphthene**	640	Surface Water Method B	0.1	640
120-12-7	**anthracene**	8,300	Surface Water ARAR	0.1	8,300
191-24-2	**benzo[ghi]perylene [G]**	830	Surface Water ARAR	0.1	830
206-44-0	**fluoranthene**	90	Surface Water Method B	0.1	90
86-73-7	**fluorene**	1,100	Surface Water ARAR	0.1	1,100
91-20-3	**naphthalene**	4,900	Surface Water Method B	0.1	4,900
85-01-8	**phenanthrene [H]**	640	Surface Water Method B	0.1	640
129-00-0	**pyrene**	830	Surface Water ARAR	0.1	830

Notes:

Shading denotes PCL value where the calculated PCL is less than the laboratory PQL or where no calculated PCL is available.

A - Groundwater PCLs selected per Ecology recommended hierarchy as outlined below.

B - References source of groundwater cleanup levels selected using hierarchy provided below.

C - PQL from Environmental Sciences Corp environmental laboratory.

D - Selected PCL defined as calculated PCL, with the exception of analytes where PQL > calculated PCL. In these instances, the PQL will be selected as th PCL.

E - SVOCs per EPA Method 8270C.

F - cPAHs and PAHs will be analyzed per 8270 SIM (low level).

G - Toxicity information is not available for benzo(ghi)perylene. Pyrene has been used as surrogate.

H - Toxicity information is not available for phenanthrene. Anthracene has been used as surrogate.

NA - Value not available.

Hierarchy for Selection of PCLs

The groundwater cleanup levels were selected using the following hierarchy:

1) Choose the most stringent value among all the Surface Water ARARs and Surface Water Method B values per WAC-173-340-730.

2) If there is no Surface Water cleanup value available in the Cleanup Levels and Risk Calculation (CLARC) table, then choose the Groundwater Method A value (Table 720-1).

3) If there is no Groundwater Method A cleanup value, then choose the Groundwater Method B (ingestion) value from the CLARC table.

4) If there is no Groundwater Method B cleanup value, then choose the most stringent Groundwater ARAR value available in CLARC.

Table 2
Soil Preliminary Cleanup Levels
SVOCs and PAHs
Bay Wood Products Site, Port of Everett
Everett, WA

CAS #	Analyte	Preliminary Cleanup Levels (PCL) (mg/kg)				Laboratory Practical Quantitation Limit (PQL) [E] (mg/kg)	Selected PCLs [F]	Parameters from CLARC Summary Table [G]							
		Soil Cleanup Based on Protection of Surface Water [A]	Soil Method A [B]	Soil Method B Direct Contact [C]	Terrestrial Ecological Receptors [D]			Aqueous Solubility (S) (mg/L)	Henrys Law Constant (unitless) (Hcc) (unitless)	Inhalation Cancer Potency Factor (CPFi) (kg-day/mg)	Inhalation Correction Factor (INH) (unitless)	Inhalation Reference Dose (RfDi) (mg/kg-day)	Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Oral Cancer Potency Factor (CPFo) (kg-day/mg)	Oral Reference Dose (RfDo) (mg/kg-day)
	Semivolatile Organic Compounds (SVOCs) [H]														
208-96-8	**acenaphthylene**	NA	Not Researched	Not Researched	--	0.33	0.33	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched
98-86-2	**acetophenone**	NA	Researched-No Data	8,000	--	0.33	8,000	Not Researched	Not Researched	Researched-No Data	2	0.000005	Not Researched	Researched-No Data	0.1
1912-24-9	**atrazine**	NA	Researched-No Data	4.5	--	0.33	4.5	Not Researched	Not Researched	Researched-No Data	1	Researched-No Data	Not Researched	0.22	0.035
100-52-7	**benzaldehyde**	NA	Researched-No Data	8,000	--	0.33	8,000	Not Researched	Not Researched	Researched-No Data	2	Researched-No Data	Not Researched	Researched-No Data	0.1
92-52-4	**biphenyl;1,1'-**	NA	Researched-No Data	4,000	--	0.33	4,000	Not Researched	Not Researched	Researched-No Data	2	0.05	Not Researched	Researched-No Data	0.05
111-44-4	**bis(2-chloroethyl)ether**	0.0017	Researched-No Data	0.91	--	0.33	0.33	17,000	0.00074	1.2	2	No Data	76	1.1	Researched-No Data
111-91-1	**bis(2-chloroethoxyl) methane**	NA	NA	NA	--	0.33	0.33	NA	NA	NA	NA	NA	NA	NA	NA
39638-32-9	**bis(2-chloroisopropyl) ether**	NA	Researched-No Data	3,200	--	0.33	3,200	Not Researched	Not Researched	Researched-No Data	2	Researched-No Data	Not Researched	Researched-No Data	0.05
108-60-1	**bis(2-chloro-1-methylethyl)ether**	NA	Researched-No Data	14	--	0.33	14	Not Researched	Not Researched	0.035	2	Researched-No Data	Not Researched	0.07	Researched-No Data
117-81-7	**bis(2-ethylhexyl) phthalate**	2.64	Researched-No Data	71	--	0.33	2.64	0.34	0.0000042	Researched-No Data	1	Researched-No Data	110,000	0.014	0.02
101-55-3	**p-Bromodiphenyl ether**	NA	NA	NA	--	0.33	0.33	NA	NA	NA	NA	NA	NA	NA	NA
85-68-7	**butylbenzylphthalate**	369	Researched-No Data	16,000	--	0.33	369	2.7	0.000052	Researched-No Data	1	0.2	14,000	Researched-No Data	0.2
105-60-2	**caprolactam**	NA	Researched-No Data	40,000	--	0.33	40,000	Not Researched	Not Researched	Researched-No Data	1	Researched-No Data	Not Researched	Researched-No Data	0.5
86-74-8	**carbazole**	0.32	Researched-No Data	50	--	0.33	0.33	7.5	0.00000063	NA	1	No Data	3,400	0.02	Researched-No Data
59-50-7	**chloro-3-methylphenol;4-**	NA	NA	NA	--	0.33	0.33	NA	NA	NA	NA	NA	NA	NA	NA
106-47-8	**chloroaniline;4-**	0.17	Researched-No Data	320	--	0.33	0.33	5,300	0.000014	Researched-No Data	2	0.004	66	Researched-No Data	0.004
95-57-8	**chlorophenol;2-**	1.15	Researched-No Data	400	--	0.33	1.15	22,000	0.016	Researched-No Data	2	Researched-No Data	390	Researched-No Data	0.005
91-58-7	**chloronaphthalene;2-**	NA	Researched-No Data	6,400	--	0.33	6,400	Not Researched	Not Researched	Researched-No Data	2	Researched-No Data	Not Researched	Researched-No Data	0.08
7005-72-3	**chlorophenyl-phenyl ether; 4-**	NA	NA	NA	--	0.33	0.33	NA	NA	NA	NA	NA	NA	NA	NA
132-64-9	**dibenzofuran**	NA	Researched-No Data	160	--	0.33	160	Not Researched	Not Researched	Researched-No Data	1	Researched-No Data	Not Researched	Researched-No Data	0.002
91-94-1	**dichlorobenzidine;3,3-**	0.0004	Researched-No Data	2.2	--	0.33	0.33	3.1	0.00000016	Researched-No Data	1	Researched-No Data	720	0.45	Researched-No Data
120-83-2	**dichlorophenol;2,4-**	0.54	Researched-No Data	240	--	0.33	0.54	4,500	0.00013	Researched-No Data	2	Researched-No Data	150	Researched-No Data	0.003
84-66-2	**diethyl phthalate**	95.9	Researched-No Data	64,000	--	0.33	95.9	1,100	0.000019	Researched-No Data	1	Researched-No Data	82	Researched-No Data	0.8
131-11-3	**dimethyl phthalate**	NA	Researched-No Data	80,000	--	0.33	80,000	Not Researched	Not Researched	Researched-No Data	1	Researched-No Data	Not Researched	Researched-No Data	1
105-67-9	**dimethylphenol;2,4-**	3.12	Researched-No Data	1,600	--	0.33	3.12	7,900	0.000082	Researched-No Data	2	Researched-No Data	210	Researched-No Data	0.02
84-74-2	**di-n-butyl phthalate**	72	Researched-No Data	8,000	200	0.33	72	11	0.000000039	Researched-No Data	1	Researched-No Data	1,600	Researched-No Data	0.1
117-84-0	**di-n-octylphthalate**	531,201	Researched-No Data	1,600	--	0.33	1,600	0.02	0.0027	Researched-No Data	1	Researched-No Data	83,000,000	Researched-No Data	0.02
534-52-1	**dinitro-2-methylphenol;4,6-**	NA	Researched-No Data	NA	--	0.33	0.33	NA	NA	NA	NA	NA	NA	NA	NA
51-28-5	**dinitrophenol;2,4-**	0.28	Researched-No Data	160	--	0.33	0.33	2,800	0.000018	Researched-No Data	1	Researched-No Data	0.01	Researched-No Data	0.002
121-14-2	**dinitrotoluene;2,4-**	0.0007	Researched-No Data	160	--	0.33	0.33	270	0.0000038	Researched-No Data	1	0.002	96	Not Researched	0.002
606-20-2	**dinitrotoluene;2,6-**	0.09	Researched-No Data	80	--	0.33	0.33	180	0.000031	Researched-No Data	1	0.001	69	Not Researched	0.001
118-74-1	**hexachlorobenzene**	0.0004	Researched-No Data	0.63	--	0.33	0.33	6.2	0.054	1.6	1	Researched-No Data	80,000	1.6	0.0008
87-68-3	**hexachlorobutadiene**	0.48	Researched-No Data	13	--	0.33	0.48	3.2	0.33	0.077	2	Researched-No Data	54,000	0.078	0.0002
77-47-4	**hexachlorocyclopentadiene**	160.2	Researched-No Data	480	--	0.33	160.2	1.8	1.1	Researched-No Data	2	0.000057	200,000	Researched-No Data	0.006
67-72-1	**hexachloroethane**	0.06	Researched-No Data	71	--	0.33	0.33	50	0.16	0.014	2	Researched-No Data	1,800	0.014	0.001
78-59-1	**isophorone**	0.04	Researched-No Data	1,100	--	0.33	0.33	12,000	0.00027	Researched-No Data	2	Researched-No Data	47	0.00095	0.2
91-57-6	**methylnaphthalene;2-**	NA	Not Researched	320	--	0.33	320	Not Researched	Not Researched	Not Researched	2	Not Researched	Not Researched	Not Researched	0.004
95-48-7	**methylphenol;2-**	2.33	Researched-No Data	4,000	--	0.33	2.33	26,000	0.000049	Researched-No Data	2	Researched-No Data	91	Researched-No Data	0.05
108-39-4	**methylphenol; 3-**	NA	Researched-No Data	4,000	--	0.33	4,000	Not Researched	Not Researched	Researched-No Data	2	Researched-No Data	Not Researched	Researched-No Data	0.05
106-44-5	**methylphenol;4-**	NA	Researched-No Data	400	--	0.33	400	Not Researched	Not Researched	Researched-No Data	2	Researched-No Data	Not Researched	Researched-No Data	0.005
88-74-4	**nitroaniline;2-**	NA	Researched-No Data	Not Researched	--	0.33	0.33	Not Researched	Not Researched	Researched-No Data	1	0.000057	Not Researched	Researched-No Data	Researched-No Data
99-09-2	**nitroaniline;3-**	NA	NA	NA	--	0.33	0.33	NA	NA	NA	NA	NA	NA	NA	NA
100-01-6	**nitroaniline;4-**	NA	NA	NA	--	0.33	0.33	NA	NA	NA	NA	NA	NA	NA	NA
98-95-3	**nitrobenzene**	0.11	Researched-No Data	40	--	0.33	0.33	2,900	0.00098	Researched-No Data	2	0.00017	120	Researched-No Data	0.0005
88-75-5	**nitrophenol;2-**	NA	NA	NA	--	0.33	0.33	NA	NA	NA	NA	NA	NA	NA	NA
100-02-7	**nitrophenol;4-**	NA	NA	NA	--	0.33	0.33	NA	NA	NA	NA	NA	NA	NA	NA
86-30-6	**nitrosodiphenylamine;N-**	0.10	Researched-No Data	200	--	0.33	0.33	35	0.00021	Researched-No Data	Researched-No	Researched-No Data	1,300	0.0049	Researched-No Data
621-64-7	**nitroso-di-n-propylamine;N-**	0.00002	Researched-No Data	0.14	--	0.33	0.33	9,900	0.000092	Researched-No Data	Researched-No	Researched-No Data	24	7	Researched-No Data
87-86-5	**pentachlorophenol**	0.004	Researched-No Data	8.3	11	0.33	0.33	2,000	0.000001	Researched-No Data	1	Researched-No Data	590	0.12	0.03
108-95-2	**phenol**	96.2	Researched-No Data	48,000	--	0.33	96.2	83,000	0.000016	Researched-No Data	2	Researched-No Data	29	Researched-No Data	0.6
95-94-3	**tetrachlorobenzene;1,2,4,5-**	NA	Researched-No Data	24	--	0.33	24	Not Researched	Not Researched	Researched-No Data	1	Researched-No Data	Not Researched	Researched-No Data	0.0003
58-90-2	**tetrachlorophenol;2,3,4,6-**	NA	Researched-No Data	2,400	--	0.05	2,400	Not Researched	Not Researched	Researched-No Data	1	Researched-No Data	280	Researched-No Data	0.03
95-95-4	**trichlorophenol;2,4,5-**	64.8	Researched-No Data	8,000	--	0.33	64.8	1,200	0.00018	Researched-No Data	2	Researched-No Data	1,600	Researched-No Data	0.1
88-06-2	**trichlorophenol;2,4,6-**	0.02	Researched-No Data	91	--	0.33	0.33	800	0.00032	0.011	2	Researched-No Data	380	0.011	Researched-No Data
	Carcinogenic Polycyclic Aromatic Compounds (cPAHs) [I]														
56-55-3	**benzo[a]anthracene**	0.020	Researched-No Data	0.140	--	0.006	0.020 [J]	0.0094	0.00014	Researched-No Data	1	Researched-No Data	360,000	7.3	Researched-No Data
50-32-8	**benzo[a]pyrene**	0.054	0.100	0.140	30	0.006	0.054 [J]	0.0016	0.000046	6.1	1	Researched-No Data	970,000	7.3	Researched-No Data
205-99-2	**benzo[b]fluoranthene**	0.067	Researched-No Data	0.140	--	0.006	0.067 [J]	0.0015	0.0046	Researched-No Data	1	Researched-No Data	1,200,000	7.3	Researched-No Data
207-08-9	**benzo[k]fluoranthene**	0.067	Researched-No Data	0.140	--	0.006	0.067 [J]	0.0008	0.000034	Researched-No Data	1	Researched-No Data	1,200,000	7.3	Researched-No Data
218-01-9	**chrysene**	0.022	Researched-No Data	0.140	--	0.006	0.022 [J]	0.0016	0.0039	Researched-No Data	1	Researched-No Data	400,000	7.3	Researched-No Data
53-70-3	**dibenzo[a,h]anthracene**	0.101	Researched-No Data	0.140	--	0.006	0.101 [J]	0.0025	0.0000006	Researched-No Data	1	Researched-No Data	1,800,000	7.3	Researched-No Data
193-39-5	**indeno[1,2,3-cd]pyrene**	0.196	Researched-No Data	0.140	--	0.006	0.140 [J]	0.000022	0.000066	Researched-No Data	1	Researched-No Data	3,500,000	7.3	Researched-No Data
	Non-Carcinogenic Polycyclic Aromatic Compounds (PAHs) [I]														
83-32-9	**acenaphthene**	65.3	Researched-No Data	4,800	NA	0.006	65.3	4.2	0.0064	Researched-No Data	1	Not Researched	4,900	Researched-No Data	0.06
120-12-7	**anthracene**	3,851	Researched-No Data	24,000	--	0.006	3,851	0.043	0.0027	Researched-No Data	1	Researched-No Data	23,000	Researched-No Data	0.3
191-24-2	**benzo[ghi]perylene [K]**	1,132	Not Researched	Not Researched	--	0.33	1,132	0.14	0.00045	Researched-No Data	1	Researched-No Data	68,000	Researched-No Data	0.03
206-44-0	**fluoranthene**	88.6	Researched-No Data	3,200	--	0.006	88.6	0.21	0.00066	Researched-No Data	1	Researched-No Data	49,000	Researched-No Data	0.04
86-73-7	**fluorene**	173.8	Researched-No Data	3,200	--	0.006	173.8	2	0.0026	Researched-No Data	1	Researched-No Data	7,700	Researched-No Data	0.04
91-20-3	**naphthalene**	137.4	5.0	1,600	--	0.33	5.0	31	0.02	Researched-No Data	2	0.00086	1,200	Researched-No Data	0.02
85-01-8	**phenanthrene [L]**	65.3	Not Researched	Not Researched	--	0.33	65.3	4.2	0.0064	Researched-No Data	1	Not Researched	4,900	Researched-No Data	0.06
129-00-0	**pyrene**	1,132	Researched-No Data	2,400	--	0.006	1,132	0.14	0.00045	Researched-No Data	1	Researched-No Data	68,000	Researched-No Data	0.03

Notes:

Shading denotes PCL value where the calculated PCL is less than the laboratory PQL or where no calculated PCL is available.

"Researched-No Data" means research has been conducted and no data exists in the Cleanup Levels and Risk Calculation (CLARC) database for this parameter.

"Not Researched" means research has not been conducted and no value exists in the CLARC database for this parameter.

A - PCLs calculated from calculated using Ecology's three phase partitioning model as described in WAC 173-340-747 to generate soil concentrations which are protective of surface water.

B - Soil Method A values for unrestricted land use from CLARC summary tables.

C - Soil Method B Direct Contact values for unrestricted land use from CLARC summary tables.

D - Terrestrial Ecological Evaluation Values from Ecology Toxics Cleanup Program Table 749-2: Priority contaminants of ecological concern for sites that qualify for the simplified terrestrial ecological evaluation.

E - PQL from Environmental Sciences Corp environmental laboratory.

F - Selected PCL = most restrictive PCL for Soil Cleanup, with the exception of analytes where PQL > calculated PCL or no calculated PCL is given. In these instances, the PQL will be selected as the PCL; if no PCL is available for Soil Cleanup Based on Protection of Surface Water, the Soil Method A or Soil Method B value (if no Method A value is given) is selected.

G - Parameters from CLARC Summary Tables used for Worksheet for Calculating Soil Cleanup Levels for Unrestricted and Industrial Land Use.

H - SVOCs per EPA Method 8270C.

I - cPAHs and PAHs per EPA Method 8270 SIM SS.

J - Presented PCLs to assist in evaluating laboratory PQLs. Cleanup levels and remediation levels will be established for mixtures of cPAHs following the procedures in MTCA 173-340-708(8)(e).

K - Toxicity information is not available for benzo(ghi)perylene. Pyrene has been used as surrogate.

L - Toxicity information is not available for phenanthrene. Anthracene has been used as surrogate.

NA - Value not available.

CAS #	Chemical	Soil Preliminary Cleanup Levels Based on Protection of Surface Water (mg/kg)	Aqueous Solubility (S) (mg/L)	Henrys Law Constant (unitless) (Hcc) (unitless)	Inhalation Cancer Potency Factor (CPFi) (kg-day/mg)	Inhalation Correction Factor (INH) (unitless)	Inhalation Reference Dose (RfDi) (mg/kg-day)	Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Oral Cancer Potency Factor (CPFo) (kg-day/mg)	Oral Reference Dose (RfDo) (mg/kg-day)	Selected Surface Water CUL from Table 1 (ug/L)	Calculated Non-Carcinogenic Direct Contact Soil Cleanup Level (mg/kg)	Calculated Carcinogenic Direct Contact Soil Cleanup Level (mg/kg)	Gastrointestinal Absorption Conversion Factor (GI)	Dermal Absorption Fraction (ABS)
	SVOCs														
208-96-8	acenaphthylene		No Research	No Research	No Data	No Data	No Data	No Research	No Data	No Data	10			0.5	0.1
98-86-2	acetophenone		No Research	No Research	No Data	2	5.00E-06	No Research	No Data	0.1	800	5,556		0.5	0.1
1912-24-9	atrazine		No Research	No Research	No Data	1	No Data	No Research	0.22	0.035	1	1,944	1.52	0.5	0.1
100-52-7	benzaldehyde		No Research	No Research	No Data	2	No Data	No Research	No Data	0.1	800	5,556		0.5	0.1
92-52-4	biphenyl;1,1'-		No Research	No Research	No Data	2	0.05	No Research	No Data	0.05	400	2,778		0.5	0.1
111-44-4	bis(2-chloroethyl)ether	0.0017	17,000	0.00074	1.2	2	No Data	76	1.1	No Data	0.3		0.81	0.5	0.1
111-91-1	bis(2-chloroethoxyl)methane		No Research	No Research	No Research	No Research	No Research	No Research	No Research	No Research	1			0.5	0.1
39638-32-9	bis(2-chloroisopropyl) ether		Not Researched	Not Researched	No Data	2	No Data	No Research	No Data	0.04	1,400	2,222		0.5	0.1
108-60-1	bis(2-chloro-1-methylethyl)ether		No Research	No Research	0.035	2	No Data	No Research	0.07	No Data	37		0.06	0.5	0.1
117-81-7	bis(2-ethylhexyl) phthalate	2.64	0.34	0.0000042	No Data	1	No Data	110,000	0.014	0.02	1.2	1,111	1.85	0.5	0.1
101-55-3	p-Bromodiphenyl ether		No Research	No Research	No Research	No Research	No Research	No Research	No Research	No Research	1			0.5	0.1
85-68-7	butylbenzylphthalate	369	2.7	0.00005	No Data	1	0.2	14,000	No Data	0.2	1,300	11,111		0.5	0.1
105-60-2	caprolactam		No Research	No Research	No Research	1	No Data	No Research	No Research	0.5	8,000	27,778		0.5	0.1
86-74-8	carbazole	0.32	7.5	0.00000063	No Research	1	No Data	3,400	0.02	No Data	4.4		0.51	0.5	0.1
59-50-7	chloro-3-methylphenol;4-		No Research	No Research	No Research	No Research	No Data	No Research	No Research	No Research	1			0.5	0.1
106-47-8	chloroaniline;4-	0.17	5,300	0.000014	No Data	2	0.004	66	No Data	0.004	32	222		0.5	0.1
95-57-8	chlorophenol;2-	1.15	22,000	0.016	No Research	2	No Data	390	No Data	0.005	97	278		0.5	0.1
91-58-7	chloronaphthalene;2-		No Research	No Research	No Research	No Research	No Research	No Research	No Research	No Research	1,000			0.5	0.1
7005-72-3	chlorophenyl-phenyl ether;4-		No Research	No Research	No Research	No Research	No Research	No Research	No Research	No Research	2			0.5	0.1
132-64-9	dibenzofuran		No Research	No Research	No Research	1	No Data	No Research	No Data	2.00E-03	32	111		0.5	0.1
91-94-1	dichlorobenzidine;3,3'-	0.0004	3.1	0.00000016	No Research	1	No Data	720	0.45	No Data	0.021		2.18	0.5	0.1
120-83-2	dichlorophenol;2,4-	0.54	4,500	0.00013	No Research	2	No Data	150	No Data	0.003	77	167		0.5	0.1
84-66-2	diethyl phthalate	95.9	1,100	0.000019	No Research	1	No Data	82	No Data	0.8	17,000	44,444		0.5	0.1
131-11-3	Dimethyl phthalate		No Research	No Research	No Research	1	No Data	No Research	No Data	1	72,000	55,556		0.5	0.1
105-67-9	dimethylphenol; 2,4-	3.12	7,900	0.000082	No Data	2	No Data	210	No Data	0.02	380	1,111		0.5	0.1
84-74-2	di-n-butyl phthalate	72	11	0.000000039	No Data	1	No Data	1,600	No Data	0.1	2,000	5,556		0.5	0.1
117-84-0	di-n-octylphthalate	531,201	0.02	0.0027	No Data	1	No Data	83,000,000	No Data	0.02	320	1,111		0.5	0.1
534-52-1	dinitro-2-methylphenol;4,6		No Research	No Research	No Research	No Research	No Research	No Research	No Research	No Research	10			0.5	0.1
51-28-5	dinitrophenol;2,4-	0.28	2,800	0.000018	No Research	1	No Data	0.01	No Data	0.002	69	111		0.5	0.1
121-14-2	dinitrotoluene;2,4-	0.0007	270	0.0000038	No Research	1	0.002	96	No Research	0.002	0.11	111		0.5	0.1
606-20-2	dinitrotoluene;2,6-	0.09	180	0.000031	No Research	1	0.001	69	No Research	0.001	16	56		0.5	0.1
118-74-1	hexachlorobenzene	0.0004	6.2	0.054	No Research	1	No Data	80,000	1.6	0.0008	0.00028	44	0.62	0.5	0.1
87-68-3	hexachlorobutadiene	0.48	3.2	0.33	No Research	2	No Data	54,000	0.078	0.0002	0.44	11	3.68	0.5	0.1
77-47-4	hexachlorocyclopentadiene	160.2	1.8	1.1	No Research	2	0.000057	200,000	No Data	0.006	40	333		0.5	0.1
67-72-1	hexachloroethane	0.06	50	0.16	No Research	2	No Data	1,800	0.014	0.001	1.4	56	1.59	0.5	0.1
78-59-1	isophorone	0.04	12,000	0.00027	No Research	2	No Data	47	0.00095	0.2	8.4	11,111	0.27	0.5	0.1
91-57-6	2-methylnapthalene		No Research	No Research	No Research	2	No Data	No Research	No Data	0.004	32	222		0.5	0.1
95-48-7	2-methylphenol (o-cresol)	2.33	26,000	0.000049	No Research	2	No Data	91	No Data	0.05	400	2,778		0.5	0.1
108-39-4	3-methylphenol		Not Researched	Not Researched	No Data	2	No Data	Not Researched	No Data	0.05	400	2,778		0.5	0.1
106-44-5	4-methylphenol (p-cresol)		No Research	No Research	No Research	2	No Data	No Research	No Data	0.005	40	278		0.5	0.1
88-74-4	nitroaniline;2-		No Research	No Research	No Research	No Research	No Research	No Research	No Research	No Research	10			0.5	0.1
99-09-2	nitroaniline;3-		No Research	No Research	No Research	No Research	No Research	No Research	No Research	No Research	10			0.5	0.1
100-01-6	nitroaniline;4-		No Research	No Research	No Research	No Research	No Research	No Research	No Research	No Research	1			0.5	0.1
98-95-3	nitrobenzene	0.11	2,900	0.00098	No Research	2	0.00017	120	No Data	0.0005	17	28		0.5	0.1
88-75-5	nitrophenol; 2-		No Research	No Research	No Research	No Research	No Research	No Research	No Research	No Research	10			0.5	0.1
100-02-7	nitrophenol; 4-		No Research	No Research	No Research	No Research	No Research	No Research	No Research	No Research	10			0.5	0.1
86-30-6	n-Nitrosodiphenylamine	0.10	35	0.00021	No Research	No Data	No Data	1,300	0.0049	No Data	3.3		0.69	0.5	0.1
621-64-7	nitroso-di-n-propylamine;N-	0.000022	9,900	0.000092	No Research	No Data	No Data	24	7	No Data	0.005		0.14	0.5	0.1
87-86-5	pentachlorophenol	0.004	2,000	0.000001	No Research	1	No Data	590	0.12	0.03	0.27	1,667	4.19	0.5	0.1
108-95-2	phenol	96.2	83,000	0.000016	No Research	2	No Data	29	No Data	0.6	21,000	33,333		0.5	0.1
95-94-3	tetrachlorobenzene; 1,2,4,5-		No Research	No Research	No Data	1	No Data	No Research	No Data	0.0003	1	17		0.5	0.1
58-90-2	tetrachlorophenol; 2,3,4,6-		No Research	No Research	No Data	1	No Data	280	No Data	0.03	480	1,667		0.5	0.1
95-95-4	trichlorophenol;2,4,5-		1,200	0.00018	No Data	2	No Data	1,600	No Data	0.1	1,800	5,556		0.5	0.1
88-06-2	trichlorophenol;2,4,6-	0.016	800	0.00032	No Research	2	No Data	380	0.011	No Data	1.4		1.59	0.5	0.1
	Carcinogenic Polycyclic Aromatic Compounds (cPAHs)														
56-55-3	benzo[a]anthracene	0.020	0.0094	0.00014	No Data	1	No Data	360,000	7.3	No Data	0.0028		0.14	0.5	0.1
50-32-8	benzo[a]pyrene	0.054	0.0016	0.000046	6.1	1	No Data	970,000	7.3	No Data	0.0028		0.14	0.5	0.1
205-99-2	benzo[b]fluoranthene	0.067	0.0015	0.0046	No Data	1	No Data	1,200,000	7.3	No Data	0.0028		0.14	0.5	0.1
207-08-9	benzo[k]fluoranthene	0.067	0.0008	0.000034	No Data	1	No Data	1,200,000	7.3	No Data	0.0028		0.14	0.5	0.1
218-01-9	chrysene	0.022	0.0016	0.0039	No Research	1	No Data	400,000	7.3	No Data	0.0028		0.14	0.5	0.1
53-70-3	dibenzo[a,h]anthracene	0.10	0.0025	0.0000006	No Research	1	No Data	1,800,000	7.3	No Data	0.0028		0.14	0.5	0.1
193-39-5	indeno[1,2,3-cd]pyrene	0.20	0.000022	0.000066	No Research	1	No Data	3,500,000	7.3	No Data	0.0028		0.14	0.5	0.1
	Non-Carcinogenic PAHs														
83-32-9	acenaphthene	65	4.2	0.0064	No Data	1	No Research	4,900	No Data	0.06	640	3,333		0.5	0.1
120-12-7	anthracene	3,851	0.043	0.0027	No Data	1		23,000	No Data	0.3	8,300	16,667		0.5	0.1
191-24-2	benzo[g,h,i]perlyene	1,132.12	0.14	0.00045	No Research	1	No Data	68,000	No Data	0.03	830	1,667		0.5	0.1
206-44-0	fluoranthene	88.56	0.21	0.00066	No Research	1	No Data	49,000	No Data	0.04	90	2,222		0.5	0.1
86-73-7	fluorene	173.80	2	0.0026	No Research	1	No Data	7,700	No Data	0.04	1,100	2,222		0.5	0.1
91-20-3	naphthalene	137.37	31	0.02	No Research	2	0.00086	1,200	No Data	0.02	4,900	1,111		0.5	0.1
85-01-8	phenanthrene	3,851	0.043	0.0027	No Data	1		23,000	No Data	0.3	8,300	16,667		0.5	0.1
129-00-0	pyrene	1,132.12	0.14	0.00045	No Research	1	No Data	68,000	No Data	0.03	830	1,667		0.5	0.1

Table 3
Groundwater Preliminary Cleanup Levels
VOCs
Bay Wood Products Site, Port of Everett
Everett, WA

CAS #	Analyte	Calculated Groundwater Preliminary Cleanup Level (PCL) [A] (µg/L)	Reference [B]	Laboratory Practical Quantitation Limit (PQL) [C] (µg/L)	Selected PCLs [D]
	Volatile Organic Compounds (VOCs) [E]				
67-64-1	**acetone**	800	Groundwater Method B	25	800
71-43-2	**benzene**	1.2	Surface Water ARAR	0.5	1.2
74-97-5	**bromochloromethane**	NA	NA	0.5	0.5
75-27-4	**bromodichloromethane**	0.27	Surface Water ARAR	0.5	0.5
75-25-2	**bromoform**	4.3	Surface Water ARAR	0.5	4.3
74-83-9	**bromomethane**	47	Surface Water ARAR	0.89	47
78-93-3	**butanone;2- (MEK)**	4,800	Groundwater Method B	2.5	4,800
75-15-0	**carbon disulfide**	800	Groundwater Method B	0.5	800
56-23-5	**carbon tetrachloride**	0.23	Surface Water ARAR	0.5	0.5
108-90-7	**chlorobenzene**	130	Surface Water ARAR	0.5	130
75-00-3	**chloroethane**	15	Groundwater Method B	0.5	15
67-66-3	**chloroform**	5.7	Surface Water ARAR	0.5	5.7
74-87-3	**chloromethane**	130	Surface Water Method B	0.5	130
110-82-7	**cyclohexane**	NA	NA	1	1
96-12-8	**dibromo-3-chloropropane;1,2-**	0.031	Groundwater Method B	1	1
124-48-1	**dibromochloromethane**	0.4	Surface Water ARAR	0.5	0.5
106-93-4	**1,2-Dibromoethane**	0.01	Groundwater Method A	0.5	0.5
95-50-1	**1,2-Dichlorobenzene**	420	Surface Water ARAR	0.5	420
541-73-1	**1,3-Dichlorobenzene**	320	Surface Water ARAR	0.5	320
106-46-7	**1,4-Dichlorobenzene**	4.9	Surface Water Method B	0.5	4.9
75-71-8	**dichlorodifluoromethane**	1,600	Groundwater Method B	0.5	1,600
75-34-3	**dichloroethane;1,1-**	800	Groundwater Method B	0.5	800
107-06-2	**dichloroethane;1,2-**	0.38	Surface Water ARAR	0.5	0.5
75-35-4	**dichloroethylene;1,1-**	0.057	Surface Water ARAR	0.5	1
156-59-2	**dichloroethylene;1,2-,cis**	80	Groundwater Method B	0.5	80
156-60-5	**dichloroethylene;1,2-,trans**	10,000	Surface Water ARAR	0.5	10,000
78-87-5	**dichloropropane;1,2-**	0.5	Surface Water ARAR	0.5	0.5
542-75-6	**dichloropropene;1,3-**	0.34	Surface Water ARAR	0.5	0.5
123-91-1	**dioxane;1,4-**	4	Groundwater Method B	100	100
100-41-4	**ethylbenzene**	530	Surface Water ARAR	0.5	530
591-78-6	**hexanone-2**	NA	NA	2.5	2.5
98-82-8	**isopropylbenzene**	800	Groundwater Method B	0.5	800
79-20-9	**methyl acetate**	8,000	Groundwater Method B	20	8,000
108-10-1	**4-methyl-2-pentanone (MIK)**	640	Groundwater Method B	2.5	640
1634-04-4	**methyl tert-butyl ether**	20	Groundwater Method A	0.5	20
75-09-2	**methylene chloride**	4.6	Surface Water ARAR	2.5	4.6
108-87-2	**methylcyclohexane**	NA	NA	1	1
100-42-5	**styrene**	1.5	Groundwater Method B	0.5	1.5
79-34-5	**tetrachloroethane;1,1,2,2-**	0.17	Surface Water ARAR	0.5	0.5
127-18-4	**tetrachloroethylene**	0.39	Surface Water Method B	0.5	0.5
108-88-3	**toluene**	1,300	Surface Water ARAR	0.5	1,300
76-13-1	**trichloro-1,2,2-trifluoroethane;1,1,2-**	240,000	Ground Water Method B	0.5	240,000
87-61-6	**1,2,3-trichlorobenzene**	NA	NA	0.5	0.5
120-82-1	**1,2,4-Trichlorobenzene**	35	Surface Water ARAR	0.5	35
71-55-6	**1,1,1-Trichloroethane**	420,000	Surface Water Method B	0.5	420,000
79-00-5	**1,1,2-Trichloroethane**	0.59	Surface Water ARAR	1	1
79-01-6	**trichloroethylene**	1.5	Surface Water Method B	1	1.5
75-69-4	**trichlorofluoromethane**	2,400	Groundwater Method B	0.5	2,400
75-01-4	**vinyl chloride**	0.025	Surface Water ARAR	0.2	0.2
1330-20-7	**xylenes (total)**	1,000	Groundwater Method A	1.5	1,000

Notes:

Shading denotes PCL value where the calculated PCL is less than the laboratory PQL or where no calculated PCL is available.

A - PCLs selected per Ecology recommended hierarchy as outlined below.

B - References source of groundwater cleanup levels selected using hierarchy provided below.

C - PQL from Environmental Sciences Corp environmental laboratory.

D - Selected PCL defined as calculated PCL, with the exception of analytes where PQL > calculated PCL. In these instances, the PQL will be selected as the PCL.

E - VOCs per EPA Method 8260.

Hierarchy for Selection of PCLs

The groundwater cleanup levels were selected using the following hierarchy:

1) Choose the most stringent value among all the Surface Water ARARs and Surface Water Method B values per WAC-173-340-730.

2) If there is no Surface Water cleanup value available in the Cleanup Levels and Risk Calculation (CLARC) table, then choose the Groundwater Method A value (Table 720-1).

3) If there is no Groundwater Method A cleanup value, then choose the Groundwater Method B (ingestion) value from the CLARC table.

4) If there is no Groundwater Method B cleanup value, then choose the most stringent Groundwater ARAR value available in CLARC.

Table 4
Soil Preliminary Cleanup Levels
VOCs
Bay Wood Products Site, Port of Everett
Everett, WA

CAS #	Analyte	Preliminary Cleanup Levels (PCL) (mg/kg)				Laboratory Practical Quantitation Limit (PQL) [E] (mg/kg)	Selected PCLs [F]	Parameters from CLARC Summary Table [G]							
		Soil Cleanup Based on Protection of Surface Water [A]	Soil Method A [B]	Soil Method B Direct Contact [C]	Terrestrial Ecological Receptors [D]			Aqueous Solubility (S) (mg/L)	Henrys Law Constant (unitless) (Hcc) (unitless)	Inhalation Cancer Potency Factor (CPFi) (kg-day/mg)	Inhalation Correction Factor (INH) (unitless)	Inhalation Reference Dose (RfDi) (mg/kg-day)	Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Oral Cancer Potency Factor (CPFo) (kg-day/mg)	Oral Reference Dose (RfDo) (mg/kg-day)
	Volatile Organic Compounds (VOCs) [H]														
67-64-1	**acetone**	3.21	Researched - No Data	8,000	--	0.05	3.21	1,000,000	0.0016	Researched-No Data	2	Researched-No Data	0.58	Researched-No Data	0.1
71-43-2	**benzene**	0.0068	0.03	18	--	0.001	0.0068	1,800	0.23	0.027	2	0.0086	62	0.055	0.004
74-97-5	**bromochloromethane**	NA	Researched - No Data	NA	--	0.001	0.001	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched
75-27-4	**bromodichloromethane**	0.0014	Researched - No Data	16	--	0.001	0.0014	6,700	0.066	Researched-No Data	2	Researched-No Data	55	0.062	0.02
75-25-2	**bromoform**	0.029	Researched - No Data	130	--	0.001	0.029	3,100	0.022	0.0039	2	Researched-No Data	130	0.0079	0.02
74-83-9	**bromomethane**	0.218	Researched - No Data	110	--	0.005	0.218	15,000	0.26	Researched-No Data	2	0.0014	9	Researched-No Data	0.0014
78-93-3	**butanone;2- (MEK)**	NA	Researched - No Data	48,000	--	0.1	48,000	Not Researched	Not Researched	Researched-No Data	2	0.29	Not Researched	Researched-No Data	0.6
75-15-0	**carbon disulfide**	5.6	Researched - No Data	8,000	--	0.001	5.6	1,200	1.2	Researched-No Data	2	0.2	46	Researched-No Data	0.1
56-23-5	**carbon tetrachloride**	0.0021	Researched - No Data	7.7	--	0.001	0.002	790	1.3	0.053	2	Researched-No Data	150	0.13	0.0007
108-90-7	**chlorobenzene**	1.126	Researched - No Data	1,600	--	0.001	1.126	470	0.15	Researched-No Data	2	0.005	220	Researched-No Data	0.02
75-00-3	**chloroethane**	NA	Researched - No Data	350	--	0.005	350	Not Researched	Not Researched	0.0029	2	2.9	Not Researched	0.029	0.4
67-66-3	**chloroform**	0.03	Researched - No Data	160	--	0.005	0.03	7,900	0.15	0.081	2	Researched-No Data	53	0.0061	0.01
74-87-3	**chloromethane**	NA	Researched - No Data	77	--	0.001	77	Not Researched	Not Researched	0.0063	2	Researched-No Data	6	0.013	Researched-No Data
110-82-7	**cyclohexane**	NA	Not Researched	NA	--	0.001	0.001	Not Researched	Not Researched	Not Researched	Not Researched	1.7	Not Researched	Not Researched	1.7
124-48-1	**dibromochloromethane**	0.002	Researched - No Data	12	--	0.001	0.002	2,600	0.032	Researched-No Data	2	Researched-No Data	63	0.084	0.02
96-12-8	**dibromo-3-chloropropane;1,2-**	NA	Researched - No Data	0.71	--	0.005	0.71	Not Researched	Not Researched	0.0024	2	0.000057	Not Researched	1.4	Researched-No Data
106-93-4	**1,2-Dibromoethane**	NA	0.005	0.012	--	0.001	0.005	Not Researched	Not Researched	0.77	2	0.0001	66	855	Researched-No Data
95-50-1	**1,2-Dichlorobenzene**	4.93	Researched - No Data	7,200	--	0.001	4.93	160	0.078	Researched-No Data	2	0.04	380	Researched-No Data	0.09
541-73-1	**1,3-Dichlorobenzene**	NA	Not Researched	NA	--	0.001	0.001	Not Researched	Not Researched	Not Researched	2	Not Researched	Not Researched	Not Researched	Not Researched
106-46-7	**1,4-Dichlorobenzene**	0.081	Researched - No Data	42	--	0.001	0.081	74	0.1	Researched-No Data	2	0.23	620	0.024	Researched-No Data
75-71-8	**dichlorodifluoromethane**	NA	Researched - No Data	16,000	--	0.001	16,000	Not Researched	Not Researched	Researched-No Data	2	0.05	Not Researched	Researched-No Data	0.2
75-34-3	**dichloroethane;1,1-**	4.37	Researched - No Data	8,000	--	0.001	4.37	5,100	0.23	Not Researched	2	0.1	53	Not Researched	0.1
107-06-2	**dichloroethane;1,2-**	0.002	Researched - No Data	11	--	0.001	0.002	8,500	0.04	0.091	2	0.0014	38	0.091	0.02
75-35-4	**dichloroethylene;1,1-**	0.00041	Researched - No Data	4,000	--	0.001	0.001	2,300	1.1	Researched-No Data	2	0.057	65	Researched-No Data	0.05
156-59-2	**dichloroethylene;1,2-,cis**	0.40	Researched - No Data	800	--	0.001	0.40	3,500	0.17	Researched-No Data	2	Researched-No Data	36	Researched-No Data	0.01
156-60-5	**dichloroethylene;1,2-,trans**	54	Researched - No Data	1,600	--	0.001	54	6,300	0.39	Researched-No Data	2	0.02	38	Researched-No Data	0.02
78-87-5	**dichloropropane;1,2-**	0.0026	Researched - No Data	15	--	0.001	0.0026	2,800	0.12	Researched-No Data	2	0.0011	47	0.068	Researched-No Data
541-75-6	**dichloropropene;1,3-**	0.003	Researched - No Data	5.6	--	0.001	0.003	2,800	0.73	0.014	2	0.0057	27	0.18	0.03
123-91-1	**dioxane;1,4-**	NA	Researched - No Data	91	--	0.10	91	Not Researched	Not Researched	Researched-No Data	2	Researched-No Data	Not Researched	0.011	Researched-No Data
100-41-4	**ethylbenzene**	4.53	6	8,000	--	0.001	4.53	170	0.32	Researched-No Data	2	0.29	200	Researched-No Data	0.1
591-78-6	**hexanone-2**	NA	NA	NA	--	0.01	0.01	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched
98-82-8	**isopropylbenzene**	NA	Researched - No Data	8,000	--	0.001	8,000	Not Researched	Not Researched	Researched-No Data	2	0.11	Not Researched	Researched-No Data	0.1
79-20-9	**methyl acetate**	NA	Researched - No Data	80,000	--	0.02	80,000	Not Researched	Not Researched	Researched-No Data	2	Researched-No Data	Not Researched	Researched-No Data	1
108-10-1	**4-methyl-2-pentanone**	NA	Researched - No Data	6,400	--	0.01	6,400	Not Researched	Not Researched	Researched-No Data	2	0.02	Not Researched	Researched-No Data	0.08
1634-04-4	**methyl tert-butyl ether**	0.085	0.1	560	--	0.001	0.085	50,000	0.018	Researched-No Data	2	0.86	11	0.0018	0.86
75-09-2	**methylene chloride**	0.087	0.02	130	--	0.005	0.02	13,000	0.09	0.0016	2	0.86	10	0.0075	0.06
108-87-2	**methylcyclohexane**	NA	Researched - No Data	NA	--	0.001	0.001	Not Researched	Not Researched	Researched-No Data	2	0.86	Not Researched	Researched-No Data	Researched-No Data
100-42-5	**styrene**	0.034	Researched - No Data	33	--	0.001	0.034	310	0.11	0.002	2	0.29	910	0.03	0.2
79-34-5	**tetrachloroethane;1,1,2,2-**	0.001	Researched - No Data	5	--	0.001	0.001	3,000	0.014	0.2	2	Researched-No Data	79	0.2	Researched-No Data
127-18-4	**tetrachloroethylene**	0.004	0.050	1.9	--	0.001	0.004	200	0.75	0.021	2	Researched-No Data	270	0.54	0.01
108-88-3	**toluene**	9.45	7	6,400	--	0.005	7	530	0.27	Researched-No Data	2	1.4	140	Researched-No Data	0.08
76-13-1	**1,1,2-trichloro-1,2,2-trifluoroethane**	NA	Researched - No Data	2,400,000	--	0.001	2,400,000	Not Researched	Not Researched	Researched-No Data	2	8.6	Not Researched	Researched-No Data	30
87-61-6	**1,2,3-trichlorobenzene**	NA	NA	NA	--	0.001	0.001	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched	Not Researched
120-82-1	**1,2,4-Trichlorobenzene**	1.33	Researched - No Data	800	--	0.001	1.33	300	0.058	Researched-No Data	2	0.057	1,700	Researched-No Data	0.01
71-55-6	**1,1,1-Trichloroethane**	3,373	2	72,000	--	0.001	2	1,300	0.71	Researched-No Data	2	3	140	Researched-No Data	0.9
79-00-5	**1,1,2-Trichloroethane**	0.0033	Researched - No Data	18	--	0.001	0.0033	4,400	0.037	0.056	2	Researched-No Data	75	0.057	0.004
79-01-6	**trichloroethylene**	0.01	0.030	2.5	--	0.001	0.01	1,100	0.42	0.4	2	0.01	94	0.4	0.0003
75-69-4	**trichlorofluoromethane**	NA	Researched - No Data	24,000	--	0.005	24,000	Not Researched	Not Researched	Researched-No Data	2	0.2	Not Researched	Researched-No Data	0.3
75-01-4	**vinyl chloride**	0.00016	Researched - No Data	0.67	--	0.001	0.001	2,800	1.1	0.031	2	0.029	19	1.5	0.003
1330-20-7	**xylenes**	9.09	9	16,000	--	0.003	9	170	0.28	Researched-No Data	2	0.029	230	Researched-No Data	0.2

Notes:

Shading denotes PCL value where the calculated PCL is less than the laboratory PQL or where no calculated PCL is available.

"Researched-No Data" means research has been conducted and no data exists in the database for this parameter.

"Not Researched" means research has not been conducted and no value exists in the database for this parameter.

A - PCLs calculated from calculated using Ecology's three phase partitioning model as described in WAC 173-340-747 to generate soil concentrations which are protective of surface water.

B - Soil Method A values for unrestricted land use from CLARC summary tables.

C - Soil Method B Direct Contact values for unrestricted land use from CLARC summary tables.

D - Terrestrial Ecological Evaluation Values from Ecology Toxics Cleanup Program Table 749-2: Priority contaminants of ecological concern for sites that qualify for the simplified terrestrial ecological evaluation.

E - Practical Quantitation Limit (PQL) from Environmental Sciences Corp environmental laboratory.

F - Selected PCL = Most restrictive PCL for Soil Cleanup, with the exception of analytes where PQL > calculated PCL or no calculated PCL is given. In these instances, the PQL will be selected as the PCL; if no PCL is available for Soil Cleanup Based on Protection of Surface Water, the Soil Method A or Method B value (if no Method A value) is selected.

G - Parameters from CLARC Summary Tables used for Worksheet for Calculating Soil Cleanup Levels for Unrestricted and Industrial Land Use.

H - VOCs per EPA Method 8260.

NA - Value Not Available.

Calculations - VOCs
Bay Wood Products Site, Port of Everett
Everett, WA

CAS #	Chemical	Soil Preliminary Cleanup Levels Based on Protection of Surface Water (mg/kg)	Aqueous Solubility (S) (mg/L)	Henrys Law Constant (unitless) (Hcc) (unitless)	Inhalation Cancer Potency Factor (CPFi) (kg-day/mg)	Inhalation Correction Factor (INH) (unitless)	Inhalation Reference Dose (RfDi) (mg/kg-day)	Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Oral Cancer Potency Factor (CPFo) (kg-day/mg)	Oral Reference Dose (RfDo) (mg/kg-day)	Selected Surface Water CUL from Table 3 (ug/L)	Calculated Non-Carcinogenic Direct Contact Soil Cleanup Level (mg/kg)	Calculated Carcinogenic Direct Contact Soil Cleanup Level (mg/kg)	Gastrointestinal Absorption Conversion Factor (GI)	Dermal Absorption Fraction (ABS)
	VOCS														
67-64-1	acetone	3.21	1,000,000	0.0016	No Data	2	No Data	0.58	No Data	0.1	800	7,390		0.8	0.03
71-43-2	benzene	0.0068	1,800	0.23	0.027	2	0.0086	62	0.055	0.004	1.2	296	16.80	0.8	0.03
74-97-5	bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA				
75-27-4	bromodichloromethane	0.0014	6,700	0.066	No Data	2	No Data	55	0.062	0.02	0.27	1,478	14.90	0.8	0.03
75-25-2	bromoform	0.029	3,100	0.022	0.0039	2	No Data	130	0.0079	0.02	4.3	1,478	116.94	0.8	0.03
74-83-9	bromomethane	0.22	15,000	0.26	No Data	2	0.0014	9	No Data	0.0014	47	103		0.8	0.03
78-93-3	butanone;2-		No Research	No Research	No Data	2	0.29	No Research	No Data	0.6	4,800	44,342		0.8	0.03
75-15-0	carbon disulfide	5.6	1,200	1.2	No Data	2	0.2	46	No Data	0.1	800	7,390		0.8	0.03
56-23-5	carbon tetrachloride	0.002	790	1.3	0.053	2	No Data	150	0.13	0.0007	0.23	52	7.11	0.8	0.03
108-90-7	chlorobenzene	1.13	470	0.15	No Data	2	0.005	220	No Data	0.02	130	1,478		0.8	0.03
75-00-3	chloroethane		No Research	No Research	0.0029	2	2.9	No Research	0.029	0.4	15	29,561	31.85	0.8	0.03
67-66-3	chloroform	0.030	7,900	0.15	0.081	2	No Data	53	0.0061	0.01	5.7	739	151.44	0.8	0.03
74-87-3	chloromethane		No Research	No Research	0.0063	2	No Data	6	0.013	No Data	130		71.06	0.8	0.03
110-82-7	cyclohexane		No Research	No Research	No Research	2	1.7	No Research	No Research	1.7		125,635		0.8	0.03
124-48-1	dibromochloromethane	0.0021	2,600	0.032	No Data	2	No Data	63	0.084	0.02	0.4	1,478	11.00	0.8	0.03
96-12-8	dibromo-3-chloropropane;1,2-		No Research	No Research	0.0024	2	0.000057	No Research	1.4	No Data	0.031		0.66	0.8	0.03
106-93-4	1,2-Dibromoethane		NA	NA	0.77	2	0.0001	66	85	NA	NA		0.01	0.8	0.03
95-50-1	1,2-Dichlorobenzene	4.93	160	0.078	No Data	2	0.04	380	No Data	0.09	420	6,651		0.8	0.03
541-73-1	1,3-Dichlorobenzene		No Research	No Research	No Research	2	No Research	No Research	No Research	No Research	320			0.8	0.03
106-46-7	1,4-Dichlorobenzene	0.081	74	0.1	No Data	2	0.23	620	0.024	No Data	4.9		38.49	0.8	0.03
75-71-8	dichlorodifluoromethane		No Research	No Research	No Data	2	0.05	No Research	No Data	0.2	1,600	14,781		0.8	0.03
75-34-3	dichloroethane;1,1-	4.37	5,100	0.23	No Research	2	0.1	53	No Research	0.1	800	7,390		0.8	0.03
107-06-2	dichloroethane;1,2-	0.0024	8,500	0.04	0.091	2	0.0014	38	0.091	0.02	0.5	1,478	10.15	0.8	0.03
75-35-4	dichloroethylene;1,1-	0.00041	2,300	1.1	No Research	2	0.057	65	No Data	0.05	0.057	3,695		0.8	0.03
156-59-2	dichloroethylene;1,2-,cis	0.40	3,500	0.17	No Data	2	No Data	36	No Data	0.01	80	739		0.8	0.03
156-60-5	dichloroethylene;1,2-,trans	54	6,300	0.39	No Data	2	0.02	38	No Data	0.02	10,000	1,478		0.8	0.03
78-87-5	dichloropropane;1,2-	0.0026	2,800	0.12	No Data	2	0.0011	47	0.068	No Data	0.5		13.59	0.8	0.03
542-75-6	dichloropropene;1,3-	0.003	2,800	0.73	0.014	2	0.0057	27	0.18	0.03	0.5	2,217	5.13	0.8	0.03
123-91-1	dioxane; 1,4-		No Research	No Research	No Data	2	No Data	No Research	0.011	No Data	100		83.98	0.8	0.03
100-41-4	ethylbenzene	4.53	170	0.32	No Data	2	0.29	200	No Data	0.1	530	7,390		0.8	0.03
591-78-6	hexanone; 2-		No Research	No Research	No Data	NA	No Data	No Research	No Data	No Data	2.5			0.8	0.03
98-82-8	isopropylbenzene		No Research	No Research	No Data	2	0.11	No Research	No Data	0.1	800	7,390		0.8	0.03
79-20-9	methyl acetate		No Research	No Research	No Data	2	No Data	No Research	No Data	1	8,000	73,903		0.8	0.03
108-10-1	4-methyl-2-pentanone		No Research	No Research	No Data	2	0.02	No Research	No Data	0.08	640	5,912		0.8	0.03
1634-04-4	methyl tert-butyl ether	0.085	50,000	0.018	No Data	2	0.86	11	0.0018	0.86	20	63,557	513.22	0.8	0.03
75-09-2	methylene chloride	0.087	13,000	0.09	0.0016	2	0.86	10	0.0075	0.06	20	4,434	123.17	0.8	0.03
108-87-2	methylcyclohexane		No Research	No Research	No Data	2	0.86	No Research	No Data	No Data	1			0.8	0.03
100-42-5	styrene	0.034	310	0.11	0.002	2	0.29	910	0.03	0.2	1.5	14,781	30.79	0.8	0.03
79-34-5	tetrachloroethane;1,1,1,2-		No Research	No Research	0.026	2	No Data	No Research	0.026	0.03	1.7	2,217	35.53	0.8	0.03
127-18-4	tetrachloroethylene	0.0042	200	0.75	0.021	2	No Data	270	0.54	0.01	0.39	739	1.71	0.8	0.03
108-88-3	toluene	9.45	530	0.27	No Data	2	1.4	140	No Data	0.08	1,300	5,912		0.8	0.03
76-13-1	trichloro-1,2,2-trifluoroethane;1,1,2-		No Research	No Research	No Data	2	8.6	No Research	No Data	30	240,000	2,217,090		0.8	0.03
87-61-6	trichlorobenzene; 1,2,3-		No Research	No Research	No Data	2	No Data	No Research	No Data	No Data	0.5			0.8	0.03
120-82-1	trichlorobenzene; 1,2,4-	1.33	300	0.058	No Data	2	0.057	1,700	No Data	0.01	35	739		0.8	0.03
71-55-6	trichloroethane; 1,1,1-	3,373	1,300	0.71	No Data	2	3	140	No Data	0.9	420,000	66,513		0.8	0.03
79-00-5	trichloroethane; 1,1,2-	0.0033	4,400	0.037	0.056	2	No Data	75	0.057	0.004	0.59	296	16.21	0.8	0.03
79-01-6	trichloroethylene	0.010	1,100	0.42	0.4	2	0.01	94	0.4	0.0003	1.5	22	2.31	0.8	0.03
75-69-4	trichlorofluoromethane		No Research	No Research	No Data	2	0.2	No Research	No Data	0.3	2,400	22,171		0.8	0.03
96-18-4	trichloropropane;1,2,3-		No Research	No Research	No Data	2	No Data	No Research	7	0.006	0.0063	443	0.13	0.8	0.03
75-01-4	vinyl chloride	0.00016	2,800	1.1	0.031	2	0.029	19	1.5	0.003	0.025	222	0.62	0.8	0.03
1330-20-7	xylenes	9.09	170	0.28	No Data	2	0.029	230	No Data	0.2	1,000	14,781		0.8	0.03

Table 5
Groundwater Preliminary Cleanup Levels
Metals, PCBs, Dioxin/Furan, TPH
Bay Wood Products Site, Port of Everett
Everett, WA

CAS #	Analyte	Calculated Groundwater Preliminary Cleanup Level (PCL) [A] (µg/L)	Reference [B]	Laboratory Practical Quantitation Limit (PQL) [C] (µg/L)	Selected PCLs [D]
	Metals [E]				
7440-36-0	**Antimony**	5.6	Surface Water ARAR	1	5.6
7440-38-2	**Arsenic**	0.018	Surface Water ARAR	1	1
7440-41-7	**Beryllium**	270	Surface Water Method B	1	270
7440-43-9	**Cadmium in Water**	0.25	Surface Water ARAR	1	1
18540-29-9	**Chromium [F]**	10	Groundwater Method A	1	10
7440-50-8	**Copper**	2.4	Surface Water ARAR	1	2.4
7439-92-1	**Lead**	0.54	Surface Water ARAR	1	1
7440-02-0	**Nickel [G]**	8.2	Surface Water ARAR	1	8.2
7782-49-2	**Selenium**	5	Surface Water ARAR	1	5
7440-22-4	**Silver**	0.32	Surface Water ARAR	0.5	0.5
7440-28-0	**Thallium [H]**	0.24	Surface Water ARAR	1	1
7440-66-6	**Zinc**	32	Surface Water ARAR	10	32
7439-97-6	**Mercury**	0.012	Surface Water ARAR	0.2	0.2
	Polychlorinated Biphenyls [I] (PCBs)				
1336-36-3	**Total PCBs**	0.000064	Surface Water Method B	0.01	0.01
	Total Dioxin / Furan [J]				
1746-01-6	**2,3,7,8 TCDD[K]**	0.000000005	Surface Water ARAR	0.00000001	0.00000001
	Total Petroleum Hydrocarbons [L] (TPH)				
N/A	TPH-Gx	1,000/800 [M]	Groundwater Method A	100	1,000/800 [M]
N/A	TPH-Dx	500	Groundwater Method A	100	500

Notes:

Shading denotes PCL value where the calculated PCL is less than the laboratory PQL or where no calculated PCL is available.

A - PCLs selected per Ecology recommended hierarchy as outlined below.

B - References source of groundwater cleanup levels selected using hierarchy provided below.

C - PQL from Environmental Sciences Corp environmental laboratory.

D - Selected PCL defined as calculated PCL, with the exception of analytes where PQL > calculated PCL. In these instances, the PQL will be selected as the PCL.

E - Metals per EPA Method 6020; Mercury per EPA Method 7470A.

F - Chromium VI.

G - Nickel, soluble salts.

H - Thallium soluble salts.

I - PCBs per EPA Method 8082.

J - Dioxin/Furan by EPA Method 1613.

K - Per Ecology Comment 45(d) to the Draft Final Work Plan, 2,3,7,8 TCDD has been used for total Dioxin/Furan.

L - Hydrocarbon per NW-TPH-Gx and NW-TPH-Dx methodologies.

M - Gasoline Range Organics 1,000 µg/L with no detectable benzene in groundwater; 800 µg/L if benzene present in groundwater.

NA - Value not available.

Hierarchy for Selection of PCLs

The groundwater cleanup levels were selected using the following hierarchy:

1) Choose the most stringent value among all the Surface Water ARARs and Surface Water Method B values per WAC-173-340-730.

2) If there is no Surface Water cleanup value available in the Cleanup Levels and Risk Calculation (CLARC) table, then choose the Groundwater Method A value (Table 720-1).

3) If there is no Groundwater Method A cleanup value, then choose the Groundwater Method B (ingestion) value from the CLARC table.

4) If there is no Groundwater Method B cleanup value, then choose the most stringent Groundwater ARAR value available in CLARC.

Table 6
Soil Preliminary Cleanup Levels
Metals, PCBs, Dioxin/Furan, and TPH
Bay Wood Products Site, Port of Everett
Everett, WA

CAS #	Analyte	Preliminary Cleanup Levels (PCL) (mg/kg)				Laboratory Practical Quantitation Limit (PQL) [E] (mg/kg)	Selected PCLs [F]	Parameters from CLARC Summary Table [G]							
		Soil Cleanup Based on Protection of Surface Water [A]	Soil Method A [B]	Soil Method B Direct Contact [C]	Terrestrial Ecological Receptors [D]			Aqueous Solubility (S) (mg/L)	Henrys Law Constant (unitless) (Hcc) (unitless)	Inhalation Cancer Potency Factor (CPFi) (kg-day/mg)	Inhalation Correction Factor (INH) (unitless)	Inhalation Reference Dose (RfDi) (mg/kg-day)	Kd (Distribution Coefficient for Metals) (L/kg)	Oral Cancer Potency Factor (CPFo) (kg-day/mg)	Oral Reference Dose (RfDo) (mg/kg-day)
	Metals [H]														
7440-36-0	**Antimony**	5.1	Researched - No Data	32	--	1	5.1	Not Researched	0	Researched-No Data	1	Researched-No Data	45	Researched-No Data	0.0004
7440-38-2	**Arsenic**	0.0105	20	0.67	20	1	1	Not Researched	0	15	1	15	29	1.5	0.0003
7440-41-7	**Beryllium**	4,267	Researched - No Data	160	25	0.1	25	Not Researched	0	8.4	1	0.0000057	790	Researched-No Data	0.002
7440-43-9	**Cadmium**	5.7	2	80	25	0.25	2	Not Researched	0	0.042	1	Researched-No Data	6.7	Researched-No Data	0.001
18540-29-9	**Chromium [I]**	3.84	19	240	42	0.5	3.84	Not Researched	0	Researched-No Data	1	0.0000023	19	Researched-No Data	0.003
7440-50-8	**Copper**	1.07	Researched - No Data	3,000	100	1	1.07	Not Researched	0	Researched-No Data	1	Researched-No Data	22	Researched-No Data	0.037
7439-92-1	**Lead**	108	250	Not Researched	220	0.25	108	Not Researched	0	Researched-No Data	1	Researched-No Data	10,000	Researched-No Data	Researched-No Data
7440-02-0	**Nickel [J]**	10.69	Researched - No Data	1,600	100	1	10.69	Not Researched	0	0.84	Not Researched	Researched-No Data	65	Researched-No Data	0.02
7782-49-2	**Selenium**	0.52	Researched - No Data	400	0.8	1	1	Not Researched	0	Researched-No Data	1	Researched-No Data	5	Researched-No Data	0.005
7440-22-4	**Silver**	0.054	Researched - No Data	400	--	0.5	0.5	Not Researched	0	Researched-No Data	1	Researched-No Data	8.3	Researched-No Data	0.005
7440-28-0	**Thallium [K]**	0.342	Researched - No Data	5.6	--	1	1	Not Researched	0	Researched-No Data	1	Researched-No Data	71	Researched-No Data	0.00007
7440-66-6	**Zinc**	39.8	Researched - No Data	24,000	270	1.5	39.8	Not Researched	0	Researched-No Data	1	Researched-No Data	62	Researched-No Data	0.3
7439-97-6	**Mercury**	0.013	2	24	0.7	0.02	0.02	Not Researched	0.47	Researched-No Data	1	0.000086	52	Researched-No Data	0.0003

CAS #	Analyte	Preliminary Cleanup Levels (PCL) (mg/kg)				Laboratory PQL [E] (mg/kg)	Selected PCLs [F]	Parameters from CLARC Summary Table [G]							
		Soil Cleanup Based on Protection of Surface Water [A]	Soil Method A [B]	Soil Method B Direct Contact [C]	Terrestrial Ecological Receptors [D]			Aqueous Solubility (S) (mg/L)	Henrys Law Constant (unitless) (Hcc) (unitless)	Inhalation Cancer Potency Factor (CPFi) (kg-day/mg)	Inhalation Correction Factor (INH) (unitless)	Inhalation Reference Dose (RfDi) (mg/kg-day)	Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Oral Cancer Potency Factor (CPFo) (kg-day/mg)	Oral Reference Dose (RfDo) (mg/kg-day)
	Polychlorinated Biphenyls [L] (PCBs)														
1336-36-3	**Total PCBs**	NA	1	0.50	--	0.0005	0.50	Not Researched	Not Researched	Researched-No Data	1	Researched-No Data	110,000	Researched-No Data	0.00007
	Total Dioxin / Furan														
1746-01-6	**2,3,7,8 TCDD [M]**	NA	NA	0.000011	--	0.000011	0.000011	Not Researched	Not Researched	150,000	1	Researched-No Data	Not Researched	150,000	Researched-No Data

Analyte	Preliminary Cleanup Levels (PCLs) (mg/kg)		Laboratory PQL (mg/kg)	Selected PCLs [E]
	Method A [B]	Terrestrial Ecological Receptors [D]		
TPH-Gx [N]	100/30 [O]	200	0.1	100/30
TPH-Dx [N]	2,000	460	4	460

Notes:

Shading denotes PCL value where the calculated PCL is less than the laboratory PQL or where no calculated PCL is available.

"Researched-No Data" means research has been conducted and no data exists in the database for this parameter.

"Not Researched" means research has not been conducted and no value exists in the database for this parameter.

A - PCLs calculated from calculated using Ecology's three phase partitioning model as described in WAC 173-340-747 to generate soil concentrations which are protective of surface water.

B - Soil Method A values for unrestricted land use from CLARC summary tables.

C - Soil Method B Direct Contact values for unrestricted land use from CLARC summary tables.

D - Terrestrial Ecological Evaluation Values from Ecology Toxics Cleanup Program Table 749-2: Priority contaminants of ecological concern for sites that qualify for the simplified terrestrial ecological evaluation.

E - Practical Quantitation Limit (PQL) from Environmental Sciences Corp environmental laboratory.

F - Selected PCL defined as most restrictive PCL for Soil Cleanup, with the exception of analytes where PQL > calculated PCL or no calculated PCL is given. In these instances, the PQL will be selected as the PCL; if no PCL is available for Soil Cleanup.

G - Parameters from CLARC Summary Tables used for Worksheet for Calculating Soil Cleanup Levels for Unrestricted and Industrial Land Use.

H - Priority Pollutant Metals per EPA Method 6010B.

I - Chromium VI.

J - Nickel, Soluble Salts.

K - Thallium, Soluble Salts.

L - PCBs per EPA Method 8082.

M - Per Ecology Comment 45(d) to the Draft Final Work Plan, 2,3,7,8 TCDD has been used for total Dioxin/Furan.

N - Hydrocarbon per NW-TPH-Gx and NW-TPH-Dx methodologies.

O - 100 mg/kg for gasoline mixtures without benzene and the total of ethylbenzene, toluene and xylene are less than 1% of the gasoline mixture, 30 mg/kg for all other gasoline mixtures.

NA - Value not available.

CAS #	Chemical	Soil Preliminary Cleanup Levels Based on Protection of Surface Water (mg/kg)	Aqueous Solubility (S) (mg/L)	Henrys Law Constant (unitless) (Hcc) (unitless)	Inhalation Cancer Potency Factor (CPFi) (kg-day/mg)	Inhalation Correction Factor (INH) (unitless)	Inhalation Reference Dose (RfDi) (mg/kg-day)	Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Distribution Coefficient for Metals(Kd) Soil Organic Carbon-Water Partitioning Coefficient (Koc) for PCBs and Dioxin/Furan L(kg)	Oral Cancer Potency Factor (CPFo) (kg-day/mg)	Oral Reference Dose (RfDo) (mg/kg-day)	Selected Surface Water CUL from Table 5 (ug/L)	Non-Carcinogenic Direct Contact Soil Cleanup Level (mg/kg)	Carcinogenic Direct Contact Soil Cleanup Level (mg/kg)	Gastrointestinal Absorption Conversion Factor (GI)	Dermal Absorption Fraction (ABS)
	Metals															
7440-36-0	Antimony	5.1	No Research	0	No Data	1	No Data	NA	45	No Data	0.0004	5.6	29		0.2	0.01
7440-38-2	Arsenic	0.0105	No Research	0	15	1	15	NA	29	1.5	0.0003	0.018	22	1	0.2	0.01
7440-41-7	Beryllium	4,267	No Research	0	8.4	1	0.0000057	NA	790	No Data	0.002	270	144		0.2	0.01
7440-43-9	Cadmium	5.7	No Research	0	6.3	1	No Data	NA	6.7	No Data	0.001	41	72		0.2	0.01
18540-29-9	Chromium VI	3.84	No Research	0	0.042	1	0.0000023	NA	19	No Data	0.003	10	NA		0.2	0.01
7440-50-8	Copper	1.07	No Research	0	No Data	1	No Data	NA	22	No Data	0.037	2.4	2,667		0.2	0.01
7439-92-1	Lead	108	No Research	0	No Data	1	No Data	NA	10,000	No Data	No Data	0.54	NA		0.2	0.01
7440-02-0	Nickel, soluble salts	10.69	No Research	0	No Data	1	No Data	NA	65	No Data	0.02	8.2	NA		0.2	0.01
7782-49-2	Selenium	0.52	No Research	0	No Data	1	No Data	NA	5	No Data	0.005	5	360		0.2	0.01
7440-22-4	Silver	0.054	No Research	0	No Data	1	No Data	NA	8.3	No Data	0.005	0.32	360		0.2	0.01
7440-28-0	Thallium, soluble	0.342	No Research	0	No Data	1	No Data	NA	71	No Data	0.00007	0.24	5		0.2	0.01
7440-66-6	Zinc	39.8	No Research	0	No Data	1	No Data	NA	62	No Data	0.3	32	21,622		0.2	0.01
7439-97-6	Mercury	0.013	No Research	0.47	No Data	1	0.000086	NA	52	No Data	0.0003	0.012	22		0.2	0.01
	PCBs															
	total PCBs		0.7	No Research	2	1	No Data	310,000	NA	2	No Data	0.01		NA	0.5	0.1
	Total Dioxin / Furan															
1746-01-6	2,3,7,8 TCDD		No Research	No Research	150,000	1	No Data	No Research	NA	150,000	No Data	0.00000001		0.00001	0.8	0.3