CELLS 3 AND 4 INTERIM ACTION WORK PLAN

FORMER PACIFIC WOOD TREATING CORPORATION

Prepared for

PORT OF RIDGEFIELD

LAKE RIVER INDUSTRIAL SITE

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Prepared by

Maul Foster & Alongi, Inc.

7223 NE Hazel Dell Avenue, Suite B

Vancouver, WA 98665

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The material and data in this report were prepared under the supervision and direction of the undersigned.

MAUL FOSTER & ALONGI, INC.

Jennifer King, PE
Project Engineer

State of Washington
2498
Licensed Geologist
Alan R. Hughes

Alan R. Hughes, LG
Project Geologist

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bgs	below ground surface
BNSF	BNSF Railroad
CFR	Code of Federal Regulations
Chem Waste Landfill	Chemical Waste Management, Subtitle C landfill
City	City of Ridgefield
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CUL	cleanup level
dioxins/furans	chlorinated dibenzo-p-dioxins and dibenzofurans
Ecology	Washington State Department of Ecology
FS	feasibility study
IHS	indicator hazardous substance
LRIS	Lake River Industrial Site
MFA	Maul Foster & Alongi, Inc.
mg/kg	milligrams per kilogram
MTCA	Model Toxics Control Act
µg/kg	micrograms per kilogram
ng/kg	nanograms per kilogram
OHW	ordinary high water
Order	Agreed Order No. 01TCPSR-3119
OSHA	Occupational Safety and Health Act
Pace	Pace Analytical Services, Inc.
PAH	polycyclic aromatic hydrocarbon
Plan	this interim action work plan
Port	Port of Ridgefield
PWT	Pacific Wood Treating Corporation
RA	risk assessment
RCW	Revised Code of Washington
REL	remediation level
RI	remedial investigation
SEPA	State Environmental Policy Act
SWPPP	stormwater pollution prevention plan
TEC	toxicity equivalent concentration
TEE	terrestrial ecological evaluation
UP	Union Pacific Railroad
USEPA	U.S. Environmental Protection Agency
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation

1 INTRODUCTION

On behalf of the Port of Ridgefield (Port), Maul Foster & Alongi, Inc. (MFA) has prepared this interim action work plan (Plan) to remove selected areas of soil from Cells 3 and 4 and complete soil grading and capping on Cells 3 and 4 at the Port's Lake River Industrial Site (LRIS) (see Figure 1-1). This work is being conducted in accordance with the requirements of Washington State Department of Ecology (Ecology) Agreed Order No. 01TCPSR-3119 (the Order) and the interim action requirements provided in the Model Toxics Control Act (MTCA), Washington Administrative Code (WAC) 173-340-430.

This Plan includes an evaluation that compares soil sampling data collected at the LRIS to MTCA Method C cleanup levels (CULs) identified as site-specific remediation levels in the draft Cell 3 feasibility study (FS) (MFA, 2008a) and draft Cell 4 remedial investigation (RI) and FS (MFA, 2009b). The response from Ecology regarding the Cell 4 RI/FS did not raise any issues with the proposed remediation levels (Appendix A).

For the purposes of this Plan, the areas where concentrations of chemicals in soil exceed Method C CULs are identified as "hot spots." The hot spots are areas of unsaturated soil that will be excavated and disposed of off site as the interim action.

Excavated soil will be disposed of at Chemical Waste Management, a Subtitle C landfill in Arlington, Oregon (Chem Waste Landfill) or the Aragonite incineration facility in Aragonite, Utah, depending on the results from the waste profiling.

This Plan describes the placement of a soil cap on Cells 3 and 4, as evaluated in the draft Cell 3 FS (MFA, 2008a) and draft Cell 4 RI/FS (MFA, 2009b) and identified as a component of the preferred remedial action. Soil from the new Interstate 5 interchange currently being constructed at Exit 14 (269th Street) is being provided by the Washington State Department of Transportation (WSDOT). This soil was analyzed for chemicals of concern and was approved by Ecology for use as clean fill (Appendix B).

2 SITE DESCRIPTION AND OVERVIEW

2.1 Location and Background

The LRIS occupies approximately 40 acres in the northwest corner of the northeast corner of section 24, township 4 north, range 1 west, Willamette Meridian (see Figure 1-1). The LRIS is currently zoned for mixed waterfront use, but was historically zoned industrial.

The LRIS is the former location of the Pacific Wood Treating Corporation (PWT) facility. PWT surface treated and pressure treated lumber at the LRIS. Previous environmental work completed on site under the Order documented that soil and groundwater on the LRIS have been impacted by wood-treating chemicals.

2.2 Overview of Historical Operations and Impacts

The LRIS consists of four areas designated as "Cells" (1, 2, 3, and 4). Portions of Cells 1 and 2 are heavily contaminated with wood-treatment chemicals from several decades of spills and other uncontrolled releases of nonaqueous-phase liquid to the underlying soil and groundwater during PWT's operations. Cell 3, formerly referred to as the south pole yard, was used to store treated lumber; for approximately ten years, a drip trough was operated on Cell 3. Cell 4, formerly referred to as the north pole yard, was used to store untreated lumber and to peel poles. The historical operations of each cell are detailed in Volume I of the 2004 RI work plan (MFA, 2004b).

Impacted soil in Cells 3 and 4 is believed to have been caused by the incidental drippage and associated activities from wood storage. Because soil in Cells 3 and 4 contain wood-preserving wastes from former PWT operations, under the state's Dangerous Waste Regulations (WAC 173-303) they are designated as listed wastes and are subject to Land Disposal Restrictions (WAC 173-303-140). The following waste codes (WAC 173-303-9904) apply to soil that will be removed from Cells 3 and 4 and disposed of:

- Listed Waste code F032—Preservative drippage in soil that contains chlorophenolic wastes
- Listed Waste code F034—Preservative drippage in soil that contains creosote wastes
- Listed Waste code F035—Preservative drippage in soil that contains arsenic and chromium wastes

3 SOIL EVALUATION

3.1 Overview of Soil Investigations at LRIS

Investigations have been conducted on the LRIS since 1985. The following documents detail the investigations and analytical results and were used to prepare this Plan:

- Volume I—RI work plan for Port LRIS (MFA, 2004b)
- Volume II—Cell 3 RI/FS work plan for Port LRIS (MFA, 2004a)
- Cell 3 RI and risk assessment (RA) report (MFA, 2007)
- Draft Cell 3 FS report (MFA, 2008a)
- Boundary soil sampling results (MFA, 2009a)
- Draft Cell 4 RI/FS report (MFA, 2009b)

The results of these investigations have established the nature and extent of site indicator hazardous substances (IHSs) and allowed evaluation of remedial options. This Plan is consistent with the findings of the preferred alternative actions discussed in the draft FS reports for Cells 3 and 4 (MFA, 2008a and 2009b).

3.2 Comparison of Soil Analytical Results to Method C CULs

In the draft Cell 3 FS and draft Cell 4 RI/FS reports, soil remediation levels were developed based on the MTCA Method C soil CULs. A component of the preferred alternative remedial actions in the draft Cell 3 FS and draft Cell 4 RI/FS reports is removal of soil above Method C soil CULs, referred to as "hot spots." In Cell 3, the following locations have confirmed detections of IHSs that exceed Method C CULs:

- MW-9S: arsenic (111 milligrams per kilogram [mg/kg]) and carcinogenic polycyclic aromatic hydrocarbon (cPAH) toxicity equivalent concentration (TEC) (29,840 micrograms per kilogram [µg/kg]) at 0.5 foot below ground surface (bgs)
- SPY-01A: cPAH TEC (25,540 µg/kg) at 1 foot bgs
- SPY-01B: arsenic (98.6 mg/kg) at 5 feet bgs
- SS-7: arsenic at 374 mg/kg and chlorinated dibenzo-p-dioxins and dibenzofurans (dioxins/furans) at 7,924 nanograms per kilogram (ng/kg) at 0.3 foot bgs

In Cell 4, the following locations have confirmed detections of IHSs that exceed Method C CULs:

- SS-4B detected dioxin/furan TEC (1,523 ng/kg) at 0.3 foot bgs
- SS-30 detected dioxin/furan TEC (1,600 ng/kg) at 0.5 foot bgs

Soil with confirmed detections above Method C CULs for arsenic, cPAHs, and dioxins/furans will be removed as part of this interim action.

3.3 Comparison of Soil Analytical Results to Method B CULs

In soil samples collected throughout Cells 3 and 4, results from one or more of the IHSs generally exceeded MTCA Method B soil CULs, potentially posing risk to human health. IHS exceedances of ecological screening criteria also generally occurred throughout Cells 3 and 4. In order to address the risk posed by the soil, capping was determined to be the preferred alternative action proposed in the draft Cell 3 FS (MFA, 2008a) and draft Cell 4 RI/FS (MFA, 2009b). As further discussed in the terrestrial ecological evaluation (TEE) (MFA, 2010), soil capping will also be protective of potential ecological receptors.

The extent of IHSs in Cells 3 and 4 was discussed in the Cell 3 RI/RA report (MFA, 2007) and the draft Cell 4 RI/FS report (MFA, 2009b). Figures 4-10 through 4-12 from the Cell 3 RI/RA report and Figure 5-5 from the draft Cell 4 RI/FS report are included in Appendix C. These figures show the extent of IHS exceedances in Cells 3 and 4.

4 SITE PREPARATION

4.1 Surveying and Mobilization

The hot spot excavations will be located by a registered land surveyor. The surveyor will re-mark the sample locations, originally surveyed when completed, where concentrations of IHSs exceed Method C CULs in Cells 3 and 4. The initial dimensions of the hot spot excavations will be measured from the re-surveyed sample locations which will be used to identify the excavation centers. The final extent of the excavations will be confirmed by soil sampling. Before excavation, the locations of subsurface utilities will be identified within 50 feet of the excavation areas by "One Call" public notification and a private utility locating company.

Exclusion zones and associated site controls will be established in accordance with the site health and safety plan.

Equipment will be mobilized to the site and is expected to include, but not be limited to, the following:

- Trackhoe excavator
- Front-end loader
- Dump truck
- Water truck
- Support vehicles and equipment

One of the interim action excavation locations is centered on monitoring well MW-9S. Capping will also be employed in this area. If the well is damaged or obstructs the excavation, a licensed driller will repair or abandon and replace the monitoring well, as necessary. The protective bollards around the well will be removed to facilitate the excavation but will be reinstalled after the excavation is backfilled.

4.2 Work on Property Not Owned by Port

The Port is proposing to complete a portion of the interim action on property within the Cell 3 designation that is owned by Union Pacific Railroad (UP). Excavation (SPY-01A, SPY01B, and SS-7) and capping will be conducted on UP property only if UP is in agreement with this Plan and Ecology approves the Plan. The Port will coordinate activities and access directly with UP and anticipates UP cooperation.

4.3 Soil Excavation and Management

Oversight and monitoring for consistency with this Plan will be performed by a professional engineer or geologist registered in Washington State or by a qualified technician under the direct supervision of a professional engineer or geologist registered in Washington State.

Excavations will be conducted at the following sampling locations with the initial excavation area as shown below:

Table 4-1
Proposed Excavation Areas

Location	Approximate Excavation Dimensions (feet)	Approx. Volumes (cubic yards)	IHSs
Cell 3 (Figure 4-1)			
MW-9S	20x20, 1 foot deep	14.8	Arsenic and cPAHs
SPY-01A	20x20, 2 feet deep	29.6	cPAHs
SPY-01B	20x20, 6 feet deep	88.9	Arsenic
SS-7	20x10, 1 foot deep	7.4	Arsenic and dioxins/furans
Cell 4 (Figure 4-2)			
SS-4B	10x10, 1 foot deep	3.7	Dioxins/furans
SS-30	10x10, 1 foot deep	3.7	Dioxins/furans

The minimum lateral extent of the excavations will be delineated in the field before excavation begins. The estimated volume of in-place soil to be removed is 148 cubic yards. The final extent of excavation may be expanded if results from confirmation samples exceed MTCA Method C CULs, to the extent that access is granted from adjacent property owners.

Some of the proposed excavation locations (SS-4B, SS-7, and SS-30) are located near the cell boundaries with the adjacent railroad east of the LRIS, which is currently owned by BNSF Railroad (BNSF). SS-4B and SS-30 are on Port property and SS-7 is located on UP property. At these locations the Port will excavate up to the property boundary with BNSF. If confirmation sampling at the property boundary exceeds MTCA Method C CULs, the Port will contact BNSF to obtain an access agreement to complete the excavation on BNSF's property.

Most of the excavations are shallow (less than 3 feet bgs) and will not need sloped sides or shoring. The deeper excavation at SPY-01B will be completed to approximately 6 feet bgs, with sloped sides to ensure a safe work environment. Based on the depth of the excavation and past site work, shoring is not expected to be necessary; however, shoring will be implemented if site conditions warrant. Soil will be excavated using conventional excavation equipment (e.g., trackhoe).

Once soil is removed from the excavation, it will be temporarily stockpiled or placed in drop boxes for profiling. Soil stockpiles will be established in locations approved by the Port, either adjacent to the excavations or in a central location. Soil will only be stockpiled together if it is from the same profile group as discussed in Section 4.3.1.

Best management practices will be used to secure excavated material in stockpiles or drop boxes. Stockpiles will be placed on impermeable liners and will be covered and secured at the end of each workday. Before placing liners, the contractor will clear the existing ground surface of debris and sharp objects. Soil stockpile covers will be secured to prevent displacement by wind as well as contact between precipitation and excavated soils. Berms will be constructed around stockpiles to prevent run-on and runoff. Drop boxes will be lined and covered to prevent erosion by wind or precipitation.

Once the soil stockpiles have been profiled for disposal (see Section 4.3.1), trucks will be loaded adjacent to stockpiles in a manner that prevents spilling or tracking of contaminated soil. Loose material that falls onto the truck exterior during loading will be removed before the truck leaves the loading area. Any material collected on the ground surface in the loading area will be placed back into the truck. The soil will then be transferred to the appropriate off-site facility. Excavated soil will be disposed of at Chem Waste Landfill or the Aragonite incinerator, depending on the results from the waste profiling.

Once the lateral and vertical extent of the excavation has been reached, confirmation samples will be collected as discussed in Section 4.3.2. Excavations will be left open during laboratory analysis of confirmation samples; adequate barriers will be installed to protect against unauthorized entry.

4.3.1 Stockpile Profiling Sampling and Analysis

The excavated soil will be profiled for disposal purposes. Historical analytical results from the proposed excavation locations are not adequate for waste profiling purposes, as they represent discrete samples. The proposed hot spot excavations are on UP and Port properties; therefore, soil stockpiling and waste profiling of excavated soil will be conducted based on discrete sample results and the generator (i.e., property owner). For example, the SS-7 discrete soil sample indicated a 1,2,3,6,7,8-hexachloro dibenzo-p-dioxin result above the land-disposal restriction treatment standard. Therefore, the excavated material from the SS-7 sample location will be stockpiled and profiled separately from the rest of the excavated soils.

The soil excavations will be profiled per the following profile groups:

- SS-7 – The soil from this excavation on UP's property totals approximately 7 cubic yards.

- SPY-01A and SPY-01B – The soil from these excavations on UP's property will be profiled together and total approximately 118 cubic yards.
- MW-9S, SS-4B, and SS-30 – The soil from these excavations on the Port's property will be profiled together and total approximately 22 cubic yards.

Four soil samples will be randomly collected at varying depths from soil generated in each profile group. The four discrete samples will be homogenized to create a composite stockpile sample for each profile group.

The samples will be collected with standard industry techniques, using a properly decontaminated hand auger or stainless steel spoons. The profile samples will be tested for the constituents outlined in the waste codes indicated in Section 2 and will include the following:

- Semivolatile organic compounds, including polycyclic aromatic hydrocarbons (PAHs), chlorinated phenolics, pentachlorophenol, and 2,4-dimethylphenol, by U.S. Environmental Protection Agency (USEPA) Method 8270C
- Dioxin/furan congeners with tetra-, penta-, and hexa- prefixes, by USEPA Method 8290
- Arsenic and chromium, by toxicity characteristic leaching procedure USEPA Method 1311/6010B

The soil samples will be placed on ice in a shipping container with chain-of-custody paperwork and transported to either Specialty Analytical, of Clackamas, Oregon, or Pace Analytical Services, Inc. (Pace), of Minneapolis, Minnesota, for analyses. Pace will conduct analyses for dioxin/furans and Specialty Analytical will conduct analyses for all other IHSs.

Once the data have been received, they will be provided to Waste Management to profile the excavated soil for disposal.

4.3.2 Confirmation Sampling and Analysis

Analytical results will be used to evaluate whether the final extent of excavation has been reached, or whether additional soil removal is necessary. Confirmation samples will be collected from the floor and side walls of each excavation and analyzed for the specific IHSs that exceeded Method C CULs at the excavation area (see Table 4-1).

A minimum of one sample will be collected from the floor of each excavation for analysis. Discrete soil samples will be collected every 20 linear feet along the side walls of the excavation at a location approximately halfway between the floor of the

excavation and the original ground surface. Soil samples will be submitted to the Port's analytical laboratory under chain-of-custody documentation for analysis.

The soil samples will be collected using stainless steel sampling equipment and new nitrile gloves. If the excavation is deeper than 3 feet bgs, the excavator or trackhoe bucket will be used to collect the soil samples. Care will be taken to make sure that no soil sample contacts the excavation equipment.

Analysis will be performed using the following methods: for arsenic, by USEPA Method 6010; for PAHs, by USEPA Method 8270 selective ion monitoring; and for dioxins/furans, by USEPA Method 8290. The soil samples will be placed on ice in a shipping container with chain-of-custody paperwork and transported to either Specialty Analytical or Pace for analyses. Pace will conduct analyses for dioxin/furans and Specialty Analytical will conduct analyses for all other IHSs.

Excavations will remain open, with safety measures in place, until confirmation sampling analysis is completed and demonstrates results below MTCA Method C CULs.

4.4 Backfilling

The excavations will not be backfilled until confirmation sample analysis indicates that the "hot spots" have been adequately addressed. Excavations will be filled using WSDOT I-5 interchange soils (discussed in Section 5), fill discussed below, or fill generated from grading within the cell. If a source other than WSDOT soil or grading within the cell is used to fill the excavations, the Port will obtain Ecology approval before placement.

4.4.1 Additional LRIS Stockpiled Soil

There are two on-site soil stockpiles proposed for incorporation (i.e., graded into low spots) on Cell 3 before the soil cap is constructed. The soil stockpiles were generated during reconnaissance drilling in Cell 2 and the Ridgefield National Wildlife Refuge in May and June 2008 (approximately 30 cubic yards) and during the City of Ridgefield's (City's) wastewater treatment plant expansion into Cell 2 (approximately 2,000 cubic yards).

The May and June 2008 reconnaissance drilling generated soil was initially stockpiled into a 10-cubic yard and a 20-cubic yard drop box. A letter documenting this work was submitted to Ecology outlining the sampling procedures and results (MFA, 2008b). In summary, six samples were collected from each drop box and composited into two samples for analysis. The samples were tested for petroleum hydrocarbons, metals (i.e., arsenic, chromium, copper, and zinc), and semivolatile organic compounds. Arsenic was the only analyte which exceeded Method B CULs. Arsenic was detected in the both samples at 3.1 mg/kg (20-cubic yard drop box) and 12.1 mg/kg (10-cubic yard drop box), above the Method B CUL of 0.67 mg/kg (see

analytical results in Appendix D). Only one of the samples exceeded the natural occurring background concentration of 5.81 mg/kg for Clark County (Ecology, 1999). The soil detections are below preliminary remediation levels (RELs) for arsenic which is the Method C CUL of 88 mg/kg arsenic.

In October 2000, Ecology indicated that the City's waste water treatment facility (WWTF) could be expanded (Ecology, 2000). The soil in the area of expansion contained some IHSs above Method B and Method C CULs. Locations with contaminant levels above Method C soil CULs were excavated for removal. The approval for WWTF expansion was based on earlier soil investigation and excavation confirmation sampling results following removal of soil exceeding Method C soil CULs. The expansion of the WWTF created excess soil which has been stockpiled adjacent to the WWTF. In August 2008, the City retained GeoEngineers, Inc. to collect and analyze two soil samples from the stockpiled soils for PCP, PAHs, and metals (i.e., arsenic, cadmium, copper, and zinc). A GeoEngineers memorandum related to the sampling and analyses is included in Appendix E. Arsenic was the only compound detected above the Method B soil CULs at 8.10 mg/kg and 9.76 mg/kg. Arsenic detections also exceeded the natural background concentration of 5.81 mg/kg. The soil detections are below preliminary RELs (Method C CULs) and the results are consistent with previous sampling in the area of the WWTF expansion.

The 30- and 2,000-cubic yard soil stockpiles have contaminant concentrations lower or similar to those in surface soils of Cell 3. Grading the soil stockpiles on Cell 3 before cap construction is appropriate for the following reasons:

- The soil is from the site and movement of soil within a site is allowed under the area of contamination policy (Ecology, 1991).

- The soil concentrations are below preliminary RELs and are similar or lower than current concentrations of IHSs in Cell 3 soil.

The soil cap which will be constructed on Cell 3, above the stockpiled soils, is appropriate to address any risk the soil may pose.

4.5 Subgrade Preparation

Cell 4 is generally flat and free of obstructions. Obstructions on Cell 3 will be removed before placement of the soil cap. In addition, Cell 3 has areas of the site that will require grading to facilitate capping. Actions required to address existing site features in Cell 3 include the following:

- Demolition of Building 11.

- Demolition of the timber bulkhead and loading ramp on the western boundary with Lake River.

- Removal of the power pole for Building 11, if necessary, and treated poles located along Lake River.

- Renovation of the existing storm system on Cell 3, including removal of the existing catch basin and outfall and replacement with an upgraded stormwater system (see Appendix F).

- Stormwater improvements on Cell 3 including decommissioning of existing Outfall 1 and replacement with two new outfalls of (see Appendix F).

- Grading of the site, including the bank along Lake River down to mean high tide. The grading will reduce the slope of the bank, allow placement of a soil cap, and promote stabilization by vegetation. The soil created from the grading will be incorporated on site before the clean soil cap placement.

- Placement of soil from the May and June 2008 groundwater investigation currently stockpiled in Cell 3, approximately 30 cubic yards (see Section 4.4.1). The soil will be incorporated on site before the clean soil cap placement.

- Placement of soil from Cell 2, within the area leased by the City, approximately 2,000 cubic yards (see Section 4.4.1). The soil will be incorporated on site before the clean soil cap placement.

- Concrete rubble located in Cell 3 will be crushed and graded into the site before placing the soil cap and geotextile fabric.

- Decommissioning of monitoring well MW-28S will be conducted by a licensed well driller. Monitoring well MW-28S was not installed deep enough to intersect groundwater.

- Elevations of monitoring wells MW-9S, MW-45S, MW-45D, MW-46D, MW-46S, MW20-D, MW-20S, and MW-29D will be adjusted by a licensed well driller to finished grade, following completion of excavation and capping. The measuring point elevation of modified monitoring wells will be surveyed after alteration to the nearest 0.01 foot (National Geodetic Vertical Datum 29) by a licensed surveyor. Bollards will be replaced around monitoring wells.

- Removal of the UP spur railroad line.

- Construction of an emergency access to allow traffic to move from Mill Street to Division Street will be re-established.

Once Cell 3 has been graded and prepared for the soil cap, an interim survey will be conducted. A second survey will be conducted after the soil cap has been placed. The

two surveys will be compared to ensure that the required minimum soil cap thickness is maintained.

Stormwater improvements will also be implemented on Cell 4, included placement of a pipe to direct stormwater to Cell 2 (see Appendix F).

4.6 Health and Safety Procedures

The interim action will be conducted according to WAC 173-340-810, the Occupational Safety and Health Act (OSHA) of 1970 (29 U.S.C. Sec. 651 et seq.), the Washington Industrial Safety and Health Act (Chapter 49.17 Revised Code of Washington [RCW]), and relevant regulations. Before implementation of the interim action, the Port will prepare a health and safety plan for Ecology's review and comment.

The Port will retain a contractor that will complete the interim actions in compliance with OSHA regulations. The contractor will be required to use a crew that has received Hazardous Waste Operations and Emergency Response Standard 40-hour training and received refresher training in the past year for placement of the geotextile and handling of any soil material on site besides the clean stockpile soil.

Dust-suppression techniques will be employed during handling of soil materials, as necessary.

5 SOIL PLACEMENT ON CELLS 3 AND 4

The Port is receiving approximately 140,000 cubic yards of soil from WSDOT's construction at the new interchange on Interstate 5 at 269th Street (Pioneer Street). The WSDOT soil was analyzed in accordance with the Ecology-approved soil acceptance plan (MFA, 2009c), and the results were presented to Ecology in a letter report (MFA, 2009d). The soil was determined to be acceptable for use as a clean soil cap and fill on the LRIS. Based on analytical results, soil from two locations was excluded from acceptance at the LRIS (Klasner, 2009a,b).

The stockpiled soil has been managed in accordance with the Stormwater Pollution Prevention Plan submitted to Ecology (Group MacKenzie, 2009). Implementation of best management practices will be continued to control stormwater generated at the site during the interim action.

The soil cap will be constructed as specified in the interim action plan set included as Appendix F. The soil capping actions are summarized below.

5.1 Upland Capping

As part of the interim action, soil will be placed on Cells 3 and 4 as a cap above the impacted surface soil. The soil cap will be constructed consistent with the soil cap options discussed in the TEE report submitted and approved by Ecology (MFA, 2010).

A geotextile (SKAPS GT-160 Nonwoven Geotextile™ or equivalent) will be placed on a smooth, prepared surface, free of puncture obstructions, between the contaminated surface and the clean fill.

Clean soil is currently being stockpiled in Cell 4 by WSDOT, and a geotextile (SKAPS GT-160 Nonwoven Geotextile™) has been placed beneath the stockpiles to distinguish clean soil from site soils. The geotextile used as demarcation layer will also serve as a component of the cap. The "hot spots" will be removed, the subgrade will be modified as necessary, a geotextile will be placed on areas in Cells 3 and 4 that do not have a geotextile, and the soil cap will be placed.

A minimum of 2 feet of soil will be placed and compacted. The cap will be deeper in certain areas to allow for additional vegetation for stabilization (e.g., the bank along Lake River in Cell 3) and to contour the cap to control stormwater. In addition, capping will be elevated in the upland area in order to protect the cap from potential flooding, as the cap is partially located within the 100-year floodplain, and in preparation for development. The extent and anticipated elevation of the interim action capping on Cells 3 and 4 is shown in Sheets G2.1 and G2.2, respectively, in Appendix F.

Following its placement, the cap will be stabilized by Ecology-approved vegetation (Appendix G). Any landscaping will correspond to the shallow-rooted species specified in the TEE (MFA, 2010), based on the thickness of the clean soil cap. The capping will be inspected and maintained in accordance with a soil management and cap maintenance plan, yet to be completed.

Note that, before fill placement, the Port's geotechnical consultant will inspect surface conditions and evaluate the competence of the existing surface soil. The fill material will be graded and compacted according to the engineer's specifications.

5.2 Work on Property Not Owned by Port

The Port is proposing to complete a portion of the interim action on property within the Cell 3 and 4 designations. A portion of Cell 3 is owned by UP. Capping will be conducted on UP property only if UP is in agreement with this Plan and Ecology approves the plan. The Port is coordinating activities and access directly with UP and anticipates UP cooperation.

6 APPLICABLE, RELEVANT, AND APPROPRIATE REQUIREMENTS

This interim action will protect human health and the environment by substantially reducing the potential for human and ecological exposure to soils above CULs in Cells 3 and 4 of the LRIS. The interim action will comply with federal, state, and local laws, under WAC 173-340-710.

Under WAC 173-340-710, applicable requirements are "cleanup standards, standards of control, and other environmental protection requirements, criteria, or limitations adopted under state or federal law that specifically address a hazardous substance, cleanup action, location, or other circumstances at the site." Relevant and appropriate requirements are "cleanup standards, standards of control, and other environmental requirements, criteria, or limitations established under state or federal law that, while not legally applicable to the hazardous substance, cleanup action, location, or other circumstance at a site, address problems or situations sufficiently similar to those encountered at a site that their use is well suited to the particular site."

Remedial actions conducted under an agreed order are exempt from the procedural requirements of certain laws. This exemption applies to the following laws: Chapters 70.94 (Air), 70.95 (Solid Waste), 70.105 (Hazardous Waste), 75.20 (Hydraulic Permit), 90.48 (Water Quality), and 90.58 (Shorelands) RCW.

The following is a discussion of regulatory requirements and their potential application, relevance, and appropriateness to the interim action:

- **Washington Water Quality Standards for Surface Waters (Chapter 90.48 RCW and Chapter 173-201A WAC).** These regulations pertain to discharges to surface water in Washington State. The interim action construction plan is designed to prevent any discharge of excavated or fill material into surface water bodies. The Port will meet the substantive requirements in preventing a discharge to surface water in Washington State, during excavation and fill work as part of interim action.

- **Clean Water Act, Section 404—Dredge or Fill Regulations (33 Code of Federal Regulations [CFR] Parts 320–330, 40 CFR Part 230).** These requirements are applicable to construction activities conducted below the OHW mark. They are intended to limit the discharge of dredged or fill material into navigable waters. No discharge of material to navigable waters is anticipated. Excavation and filling below the OHW mark is not anticipated during implementation of this interim action.

- **Hydraulics Project Approval (Chapter 220-110 WAC).** This regulation applies to construction, which may require work waterward of the OHW mark that could change the natural flow or bed of the water body (and therefore has the potential to affect fish habitat). The requirements include bank protection (WAC 220-110-050), bed materials restrictions, siltation minimization, and debris disposal (WAC-222-110-270). Work will not occur waterward of the OHW mark, and therefore does not apply to this interim action. An application to the jurisdiction will be completed to ensure the interim action meets substantive requirements.

- **Washington Hazardous Waste Management Act Regulations (Chapter 173- 303 WAC) and Resource Conservation and Recovery Act Subtitle C Regulations (40 CFR Parts 261 and 268).** These regulations are applicable to the identification and disposal of solid wastes designated as dangerous (including federally hazardous) wastes. Requirements for designation, management, and disposal of dangerous/hazardous waste apply to this interim action.

- **Washington Solid Waste Management Act Regulations (Chapter 173-350 WAC).** These regulations are applicable to the management and disposal of solid waste materials that are not Washington dangerous wastes. They provide minimum functional standards for solid waste handling. These requirements apply to solid (nonhazardous) wastes generated during the project.

- **Washington Water Pollution Control Law and Federal Clean Water Act Storm Water Multi-Sector General Permit for Construction Activities (Chapter 90.48 RCW and 40 CFR 122.26, respectively).** These regulations provide that discharges of stormwater associated with "construction activities over 1 acre" require a National Pollutant Discharge Elimination System permit. The general permit provides for use of sediment and erosion controls and for stormwater management measures. Although a permit will not be required for implementing the interim action on the site, as it is not applicable to the handing of contaminated soils, the substantive requirements of the state Construction Stormwater General Permit apply to activities that could result in discharges of stormwater, including excavation and fill placement. The Port will comply with the substantive requirements of the regulations by implementing the interim action in accordance with a construction stormwater pollution prevention plan (SWPPP).

- **Washington State Environmental Policy Act (SEPA) (Chapter 197-11 WAC).** These regulations require the lead state or local agency to evaluate the environmental impacts of actions and identify possible alternatives before committing to a particular course of action. SEPA also provides for the preparation of environmental documentation and mitigation for project impacts where applicable, and encourages public involvement in the decision making process. Ecology is the lead agency under SEPA for this interim

action. A SEPA checklist has been completed for the interim action and is attached as Appendix H.

- **Washington Shoreline Management Act of 1971 (Chapter 90.58 RCW), Shoreline Master Program Planning Guidelines (Chapter 173-26 WAC), Shoreline Management Permit and Enforcement Procedures (Chapter 173-27 WAC), City of Ridgefield Shoreline Regulations (Chapter 18.820), and Clark County Shoreline Master Program, 1974.** Management of shorelines in the City has been delegated to Clark County. The shoreline of Carty Lake is within the boundaries of the Ridgefield National Wildlife Refuge and is not subject to the Shoreline Management Act. Shorelines along Lake River are classified as an "urban environment" and development activities within the banks or floodplains of the shoreline must comply with the substantive requirements of the County's Shoreline Management Program. The interim action will result in a more gently sloping bank, restoring ecological function to the extent possible without working waterward of the OHW. Public access and public recreation objectives are components of the Port's overall remediation and development of the shoreline.

- **Washington Archaeological Sites and Resources Act (Chapter 27.53 RCW).** This state law requires identification, preservation, and special handling of cultural and archaeological resources. No known archaeological sites are located within the project area. As the bank excavation may encounter native soils below fill, the Department of Archaeology and Historic Preservation will be consulted. If required, the Port will contract an independent, qualified cultural resource firm to observe any excavation in native soils.

- **Washington State Growth Management Act RCW 36.70., City of Ridgefield Critical Areas Ordinance (Chapter 18.280), and City of Ridgefield Flood Control Development Code (Chapter 18.750).** The Critical Areas Ordinance pertains to the designation, classification, and protection of critical areas within the existing and future municipal limits of the City.

  The interim action will be conducted in "frequently flooded" critical areas. In accordance with the Ridgefield Code, filling within floodways is prohibited unless certification by a registered professional engineer is provided, demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment will not result in any increase in flood levels during the base flood discharge. Minimal filling within the 100-year floodplain will occur; however, this fill is mitigated by creation of additional flood storage via bank excavation in the current interim action in Cell 3 and concurrent with a planned interim action in Cell 2. Documentation of the balanced fill calculation will be provided to Ecology and the local regulatory authority.

> The remedial action is an activity conducted to prevent an immediate threat to public health, safety, or welfare and may be exempt from the requirements of the code. As avoiding filling within the floodway is not feasible because the cap must be elevated above the floodway to protect human health and the environment, the Port will minimize the impact of the activity and mitigate to the extent necessary to achieve the activity's purpose and the purpose of Chapter 18.750.

The interim action will meet the substantive requirements for applicable, relevant, and appropriate requirements, as discussed above. Permits and/or documentation from the appropriate regulatory agencies will confirm that the interim action will meet substantive requirements.

7 SCHEDULE

Ecology approval is required before the interim action can begin; this approval process includes a public comment period. The Port will proceed with the excavation, grading, and capping activities once Ecology has approved the interim action.

Once the interim action has been completed, a technical memorandum addressing the following items will be prepared for Ecology's review:

- Descriptions of field activities and observations
- Survey showing the final lateral and vertical extent of the excavations, finished grade, and constructed soil cap thickness
- Tables summarizing the confirmation sampling analytical results
- Copies of the waste disposal manifest
- Copies of laboratory analytical results

LIMITATIONS

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

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

Group MacKenzie. 2009. Stormwater pollution prevention plan. Prepared for Port of Ridgefield. Group MacKenzie. August 13.

Ecology 1991. Interprogram Policy, Area of Contamination. Prepared by Washington State Department of Ecology, Waste Management Program, Solid and Hazardous Waste program, and Toxics Cleanup Program. August 20.

Ecology. 1999. Natural Background Soil Metals Concentrations in Washington State. Publication #94-115. Washington State Department of Ecology. October.

Klasner. 2009a. Letter (re I-5 interchange soil acceptance plan dated May 7, 2009, Ecology approval of soil acceptance) to M. Clark, Washington State Department of Transportation, from L. Klasner, Washington State Department of Ecology. July 17.

Klasner, L. 2009b. Electronic mail communications (re PWT, conditional approval for SWPPP, revised September 15, 2009) to B. Grening, Port of Ridgefield. September 18.

MFA. 2004a. Remedial investigation and feasibility study workplan for Port of Ridgefield Lake River industrial site. Vol. II, Cell 3. Prepared for the Port of Ridgefield. Maul Foster & Alongi, Inc., Vancouver, Washington. July 2.

MFA. 2004b. Remedial investigation workplan for Port of Ridgefield Lake River industrial site. Vol. I, Cells 1, 2, and 4. Prepared for the Port of Ridgefield. Maul Foster & Alongi, Inc., Vancouver, Washington. July 2.

MFA. 2007. Cell 3 remedial investigation and risk assessment report. Prepared for the Port of Ridgefield. Maul Foster & Alongi, Inc., Vancouver, Washington. February 23.

MFA. 2008a. Draft Cell 3 feasibility study report. Prepared for the Port of Ridgefield. Maul Foster & Alongi, Inc., Vancouver, Washington. April 21.

MFA. 2008b. Letter (re Request for soil placement) to Laura Klasner, Washington State Department of Ecology, from Steve Taylor and Alan Hughes, Maul Foster & Alongi, Inc. November 10.

MFA. 2009a. Letter (re: boundary soil sampling results at the former Pacific Wood Treating site) to L. Klasner, Washington State Department of Ecology, from Maul Foster & Alongi, Inc. February 9 (revised).

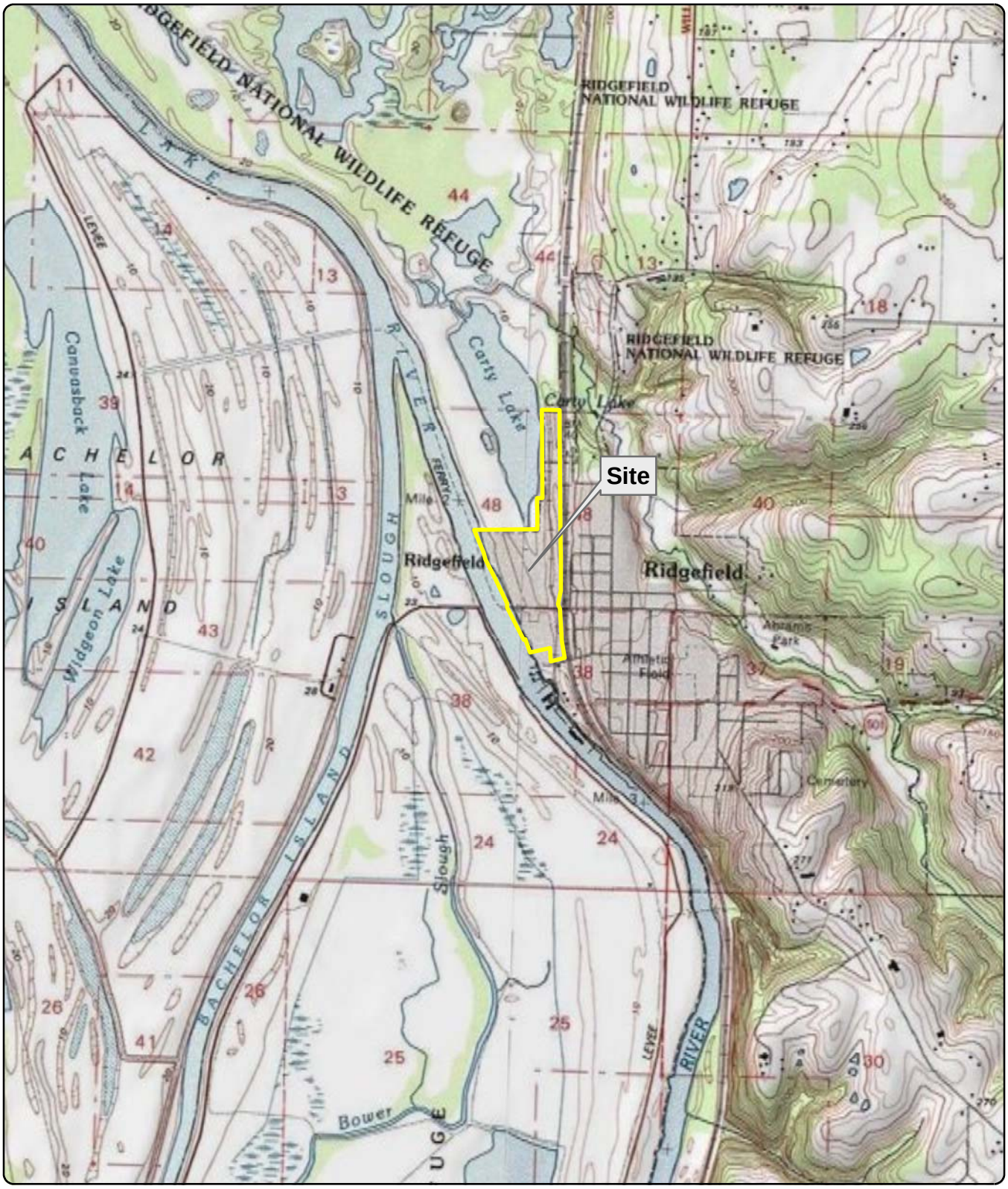
MFA. 2009b. Cell 4 remedial investigation and feasibility study report. Draft. Prepared for the Port of Ridgefield. Maul Foster & Alongi, Inc., Vancouver, Washington. March 20.

MFA. 2009c. I-5 interchange soil acceptance plan. Prepared for the Port of Ridgefield. Maul Foster & Alongi, Inc., Vancouver, Washington. May 18.

MFA. 2009d. I-5 interchange soil sampling results. Prepared for the Port of Ridgefield. Maul Foster & Alongi, Inc., Vancouver, Washington. August 6.

MFA. 2010. Letter (re: final terrestrial ecological evaluation for the former Pacific Wood Co. Treating site, Agreed Order No. 01TCPSR-3119) to C. Rankine, Washington State Department of Ecology, from Maul Foster & Alongi, Inc. April 13.

FIGURES



Address: Lake River Industrial Site
111 W. Division Street, Ridgefield, WA 98642
Source: USGS (1990) 7.5 Minute Topo Quads:
Saint Helens & Ridgefield
Section 24, Township 4N, Range 1W of Willamette Meridian

Legend

Site Boundary

Figure 1-1
Site Location

Port of Ridgefield
Ridgefield, Washington

0 1,000 2,000
Feet

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File: X:\9003.01 Port of Ridgefield\43\Projects\Fig1-1_Site Location.mxd
Print Date: 09-01-2009
Approved By: A. Hughes
Produced By: R. Maronn
Project: 9003.01.43/00

Figure 4-1
Proposed Cell 3 Soil Removal Interim Action Locations

Port of Ridgefield
Ridgefield, Washington

Legend

- Monitoring Well To Be Decommissioned
- Monitoring Well
- Timber Pole/Piling To Be Removed
- Surface Soil Samples
- Soil Boring
- Test Pit
- Excavate to 1 Ft BGS
- Excavate to 2 Ft BGS
- Excavate to 6 Ft BGS
- Loading Dock
- Cell 3 Boundary
- Tax Lot Boundary

Cell 3 Tax Lots

OWNER

- Port of Ridgefield
- Union Pacific Railway Company

Note:
Ft BGS = Feet Below Ground Surface

0 50 100
Feet

Source: Aerial photograph (2007) obtained from Clark County GIS Department

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File: X:\9003.01 Port of Ridgefield\20\Interim Action Workplan\Project\Fig4-1_Proposed Cell 3 Soil Removal Interim Action Locations.mxd
Print Date: 04-12-2010
Approved By: J. King
Produced By: Hines/Padilla
Project: 9003.01.20/00

Source: Aerial photograph (2007) and tax lots obtained from Clark County GIS Department

Note:
Ft BGS = Feet Below Ground Surface

Legend

- Soil Boring
- Test Pit
- Surface Soil Sample
- Excavate to 1 Ft BGS
- Cell 4 Boundary
- Tax Lot Boundary

Cell 4 Tax Lots

OWNER

- Port of Ridgefield
- BNSF Railroad

Figure 4-2
Proposed Cell 4 Soil Removal Interim Action Locations

Port of Ridgefield
Ridgefield, Washington

0 60 120
Feet

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Project: 9003.01.20/00 Produced By: Hines/Padilla Approved By: J. King Print Date: 04/12/2010

APPENDIX A

LETTER FROM L. KLASNER, RE: ECOLOGY COMMENTS ON THE DRAFT CELL 4 REMEDIAL INVESTIGATION AND FEASIBILITY STUDY, DATED JUNE 4, 2009

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

CERTIFIED MAIL
7008 2810 0001 3939 5767

June 4, 2009

Brent Grening, Executive Director
Port of Ridgefield
PO Box 55
Ridgefield, WA 98642

Dear Mr. Grening:

Re: Ecology comments on the Draft Cell 4 Remedial Investigation and Feasibility Study Report, Former Pacific Wood Treating Corporation (FS/ID# 1019), April 27, 2009

This letter provides the Port of Ridgefield (Port) with comments from the Washington State Department of Ecology (Ecology) for the Draft Cell 4 Remedial Investigation and Feasibility Study Report, Former Pacific Wood Treating Corporation Site (Site), dated March 20, 2009. Formal approval is required by Agreed Order Number DE 01TCPSR-3119, negotiated between Ecology and the Port. Please submit a revised report for Ecology's review and approval.

The following outlines Ecology's comments on the Draft Cell 4 Remedial Investigation and Feasibility Study Report:

1) Throughout remedial activities completed to date, the Port has presented Remedial Investigation/Feasibility Study (RI/FS) results on a cell-by-cell basis, as allowed in the existing Agreed Order. The sum of cell-specific RI/FS reports will collectively complete the RI/FS for the entire Site, at which time a Cleanup Action Plan (CAP) will be drafted. At our March 26, 2009 meeting, we discussed that remedial actions performed under the Agreed Order are considered "interim actions". The intent of both the Port and Ecology is to design and evaluate these interim actions to sufficiently meet the requirements of MTCA for protection of human health and environment, so that they may dovetail into a single, site-wide Cleanup Action Plan (CAP). However, until a site-wide CAP is finalized, language within the RI/FS should reflect that, in addition to remediation levels (RELs), cleanup levels and remedial actions described in the proposed cleanup alternatives will be considered "interim". Please modify the text to reflect this (ex. "preliminary cleanup levels" for cleanup levels & "interim cleanup actions" or "interim actions" for the cleanup phases identified in the FS).

2) Executive Summary, Recommended Alternative: Please include groundwater use restriction in the description of institutional controls for Alternative 2.

3) Section 4.7.1: Will uses for Cell 4 be restricted to industrial and commercial only? If public or residential uses may be a possibility, please include these as well (ex. public walking trails, educational facilities, apartments, etc.)?

4) Section 5.1.6, Table 5-6, and Figure 5.5: Not all soil locations that were found to exceed Terrestrial Ecological Evaluation (TEE) screening level are indicated on Figure 5.5 or Table 5-6. A natural background concentration of 2.2 mg/kg 2,3,7,8-TCDD (as a dioxin/furan toxicity equivalent concentration) should be used as a screening level for the TEE, per Ecology's 2007 publication number 07-09-108, *Concise Explanatory Statement and Responsiveness Summary for the Amendment of Chapter 173-340 WAC, Model Toxics Control Act Cleanup Regulation.*

5) Sections 4.7.2, 5.1.7: Although the data presented support the hypothesis that bioaccumulation of dioxins may be higher than specified in MTCA, site-specific evaluation of bioaccumulation factors (BAFs) is needed to evaluate dioxin findings on the RNWR property. Three co-located worm and soil samples should be collected from the RNWR near the Cell 4 boundary and analyzed for dioxins. Collecting the three worm samples near the previous soil sample locations will save on analysis costs, by avoiding duplication of soil analysis. The results will be evaluated and may be useful for establishing BAFs and site-specific cleanup levels.

6) Section 6.2.1: The proposed engineered cap design specifies 6 inches and 3 inches of clean fill over a geotextile membrane for permeable (landscaped) and impermeable (asphalt, concrete, building) areas, respectively. However, for all landscaped areas, clean fill thickness should be increased to 2 feet to prevent exposure.

7) Section 7.3: WAC 173-340-370(4) contains guidance for reasonable restoration time frames, not implementation time frames. Alternative 3b would have the shortest time frame for restoration to natural background concentrations.

8) Section 6, Section 7.4, and Table 6.1, Alternative 1: In Section 6 and Table 6.1 calculations, the exposure barrier consists of a geotextile membrane and clean fill. However, in Section 7.4 a gravel barrier is included in the Alternative 1 description. If the proposed cap will contain a gravel layer, it should be included in the cost estimates as well. Please clarify.

9) Figure 4-1: Ecology considers the surface and subsurface soil exposure pathways as potentially complete for ecological receptors. Please revise the figure accordingly.

Please do not hesitate to contact me with questions. I can be reached at (360) 407-6265 or lkla461@ecy.wa.gov.

Sincerely,

Laura Klasner

Laura Klasner
Site Manager/Hydrogeologist
Toxic Cleanup Program
Southwest Regional Office

LK/ksc:Cell 4 RIFS ECY comments 0509 pb(lk1)

cc: Laurie Olin, Port of Ridgefield
Bruce Wiseman, Port of Ridgefield
Steve Taylor, MFA
Alan Hughes, MFA
Lisa Pearson, Ecology, TCP/SWRO
Rebecca Lawson, Ecology, TCP/SWRO

APPENDIX B

LETTER FROM L. KLASNER, RE: ECOLOGY APPROVAL OF SOIL ACCEPTANCE, DATED JULY 17, 2009

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

July 17, 2009

Mike Clark
Engineering Services Manager
Washington State Department of Transportation
PO Box 1709
Vancouver, WA 98668-1709

Re: I-5 Interchange Soil Acceptance Plan dated May 7, 2009, Ecology Approval of Soil Acceptance, Pacific Wood Treating, FS/ID#1019

Dear Mr. Clark:

I understand that you are the contact person representing Washington State Department of Transportation (WSDOT) in negotiating and organizing the transport of excess soils expected to be generated from the I-5 interchange 14 upgrade to the Port of Ridgefield (Port) property. I work as Department of Ecology's (Ecology) Toxics Cleanup Program Site Manager for the Pacific Wood Treating Site (Site), located on the Port's property.

I am writing to you regarding Ecology's recommendations and requirements for the Port's acceptance of soil for use as fill and engineered cap material on the Site. Ecology has been working with the Port to determine the suitability of the interchange material for the Site with respect to the ongoing investigation and cleanup and has approved the above-referenced soil acceptance plan. This plan outlines testing requirements and acceptance criteria for fill estimated at up to 190,000 cubic yards in volume. We received results from recent testing of the interchange soils. There were two sample locations identified (NB-4A at 0.5 feet below ground surface (ft bgs) and SR-1A at 0.5 ft bgs) that exceeded the criteria for acceptance based on dioxin and lead concentrations. As a result, Ecology has approved the acceptance of the majority of the material, with the exception of an estimated 6,200 cubic yards in the vicinity of these two sample locations. I understand that these locations were identified to you in a July 16, 2009 email from Randy Mueller of the Port.

With respect to the approximately 6,200 cubic yards of material, Ecology recommends keeping this material on the same I-5 interchange location (ex. beneath the road). This recommendation is specific to this situation only and is consistent on the Model Toxics Control Act (MTCA, Chapter 173-340 WAC and Chapter 70.105D RCW) and Dangerous Waste policy.

Please do not hesitate to contact me with questions. I can be reached at 360-407-6265 or lkla461@ecy.wa.gov.

Sincerely,

Laura Klasner

Laura Klasner, PE
Site Manager
Toxic Cleanup Program
Southwest Regional Office

LMK/ksc:WA DOT fill acceptance letter July 2009

cc: Brent Grening, Port of Ridgefield
Laurie Olin, Port of Ridgefield
Bruce Wiseman, Port of Ridgefield
Steve Taylor, MFA
Alan Hughes, MFA
Marian Abbett, TCP-SWRO
Rebecca Lawson, TCP-SWRO

APPENDIX C

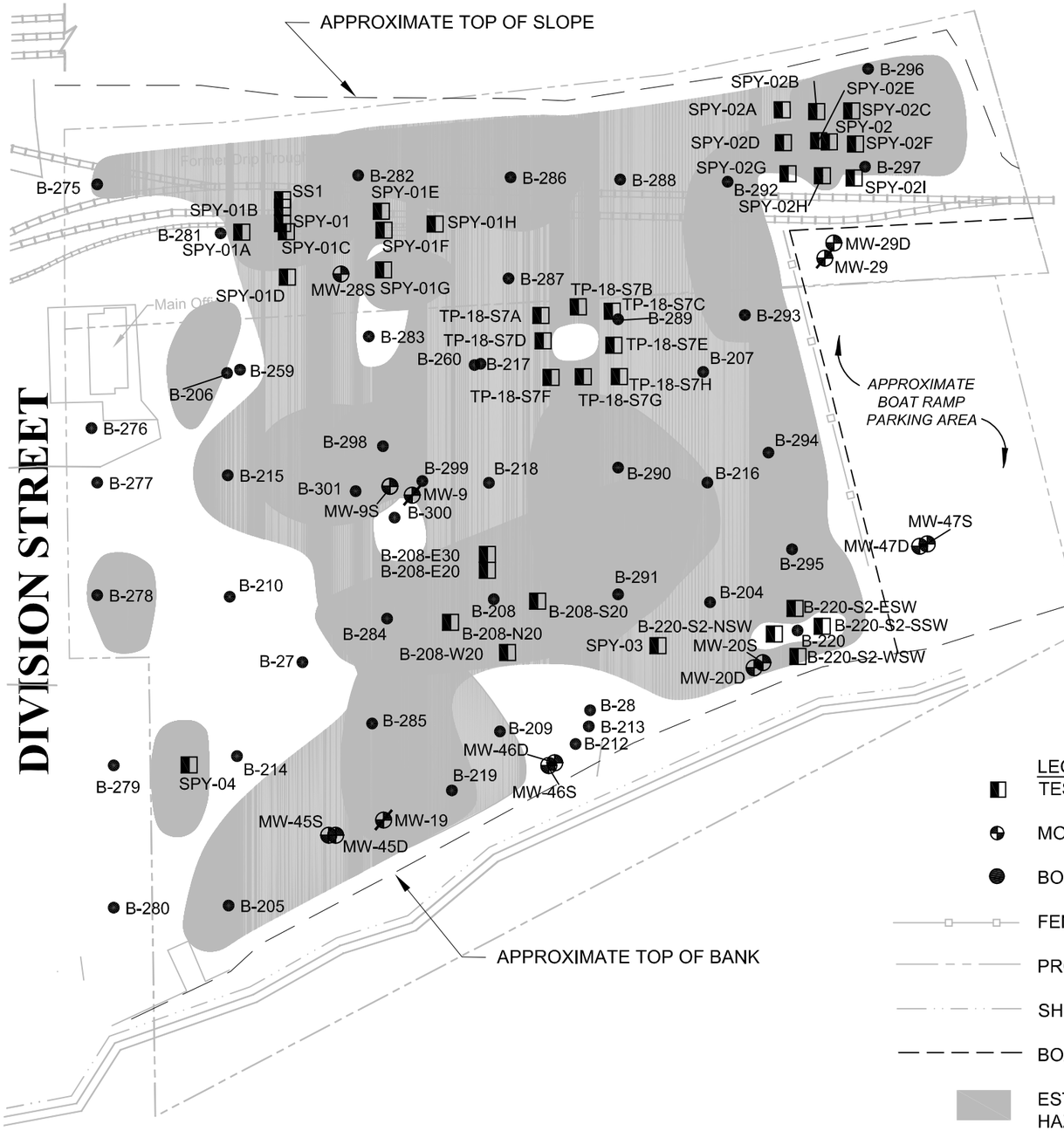
FIGURES FROM CELL 3 RI/RA REPORT (4-10 THROUGH 4-12)

FIGURE FROM DRAFT CELL 4 RI/FS REPORT (5-5)

Figure 4-10

Estimated Distribution of Indicator Hazardous Substances in Soil, 0-3 Foot Depth Interval

Port of Ridgefield
Ridgefield, Washington



GENERAL EXPLANATION:
S = SHALLOW PORTION OF THE UPPER WATER-BEARING ZONE

D = DEEP PORTION OF THE UPPER WATER-BEARING ZONE

LEGEND:
- TEST PIT
- MONITORING WELL
- BORING
- FENCELINE
- PROPERTY BOUNDARY
- SHORELINE
- BOAT RAMP PARKING
- ESTIMATED DISTRIBUTION OF INDICATOR HAZARDOUS SUBSTANCES EXCEEDING RELATIVE SCREENING CRITERIA IN SOIL.

NOTE:
DISTRIBUTION OF INDICATOR HAZARDOUS SUBSTANCES CREATED BY OVERLAYING ESTIMATED SOIL EXCEEDANCE OF ARSENIC OF MTCA METHOD A CLEANUP LEVEL (DIRECT CONTACT PATHWAY) OF 20 MILLIGRAMS PER KILOGRAM, PENTACHLOROPHENOL OF MTCA METHOD B CLEANUP LEVEL (DIRECT CONTACT PATHWAY) OF 8,330 MICROGRAMS PER KILOGRAM (ug/kg), AND CHRYSENE OF MTCA METHOD B CLEANUP LEVEL (DIRECT CONTACT PATHWAY) OF 137 ug/kg.

N

0 100 200
FEET

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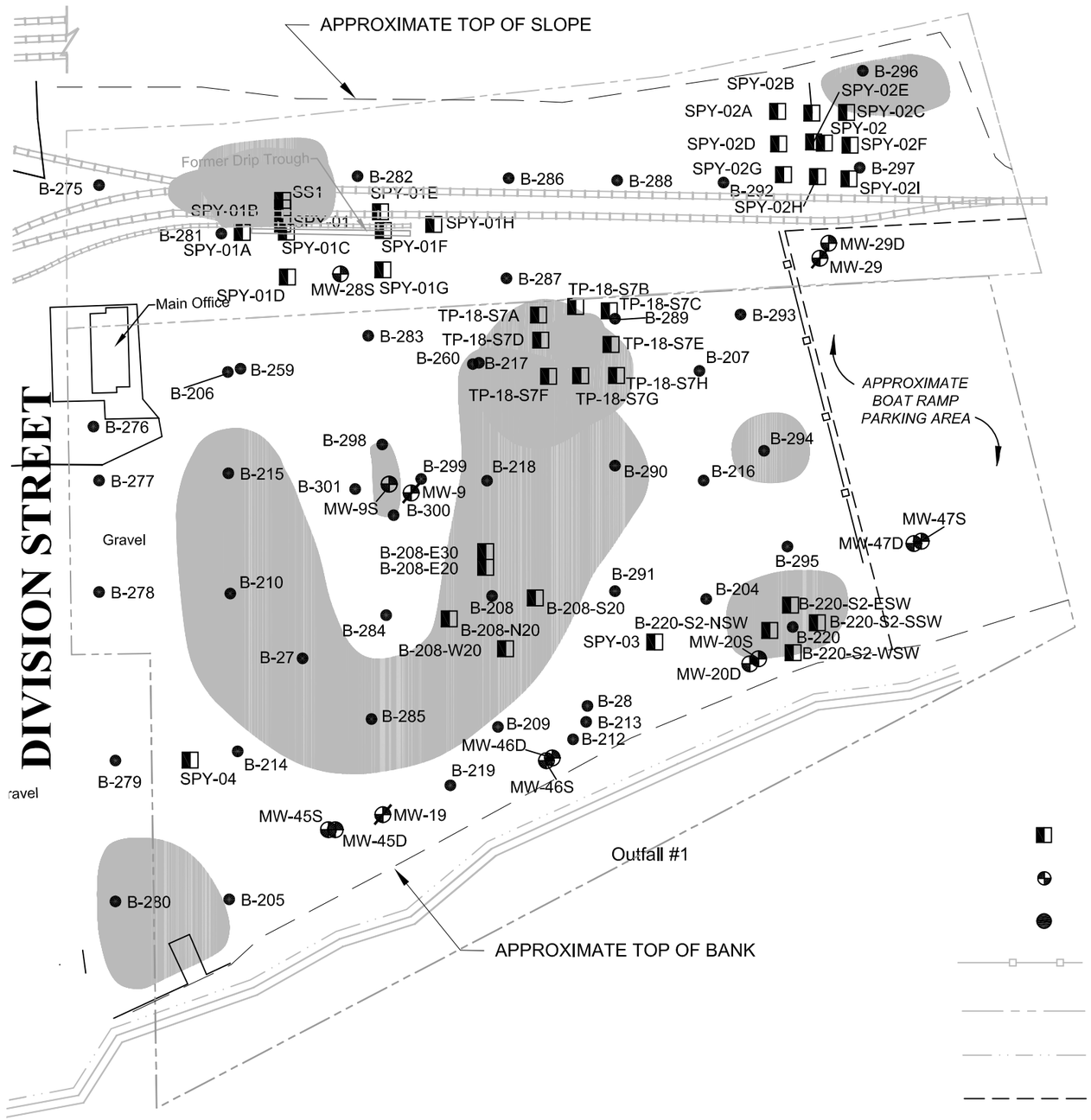
Vancouver, WA | Portland, OR | www.MFAinc.org

File: G:\9003.01 PORT OF RIDGEFIELD\31_FINAL RI-RA REPORT-CELL 3\FIG4-10_HAZARDOUS SUBSTANCES.DWG Last edited: FEB. 15, 2007 @ 10:00 a.m. by: jfisher Xr

Layout: 1 Project: 9003.01.31 Drawn By: J. Fisher Approved By: A.Hughes



LEGEND:

- TEST PIT
- MONITORING WELL
- BORING
- FENCELINE
- PROPERTY BOUNDARY
- SHORELINE
- BOAT RAMP PARKING
- ESTIMATED DISTRIBUTION OF INDICATOR HAZARDOUS SUBSTANCES EXCEEDING RELATIVE SCREENING CRITERIA IN SOIL.

Figure 4-11

Estimated Distribution of Indicator Hazardous Substances in Soil, 4-9 Foot Depth Interval

Port of Ridgefield
Ridgefield, Washington

GENERAL EXPLANATION:

S = SHALLOW PORTION OF THE UPPER WATER-BEARING ZONE

D = DEEP PORTION OF THE UPPER WATER-BEARING ZONE

NOTE:

DISTRIBUTION OF INDICATOR HAZARDOUS SUBSTANCES CREATED BY OVERLAYING ESTIMATED SOIL EXCEEDANCE OF ARSENIC OF MTCA METHOD A CLEANUP LEVEL (DIRECT CONTACT PATHWAY) OF 20 MILLIGRAMS PER KILOGRAM, PENTACHLOROPHENOL OF MTCA METHOD B CLEANUP LEVEL (DIRECT CONTACT PATHWAY) OF 8,330 MICROGRAMS PER KILOGRAM (ug/kg), AND CHRYSENE OF MTCA METHOD B CLEANUP LEVEL (DIRECT CONTACT PATHWAY) OF 137 ug/kg.

N

0 100 200

FEET

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Layout: 1 Project: 9003.01.31 Drawn By: J. Fisher Approved By: A.Hughes

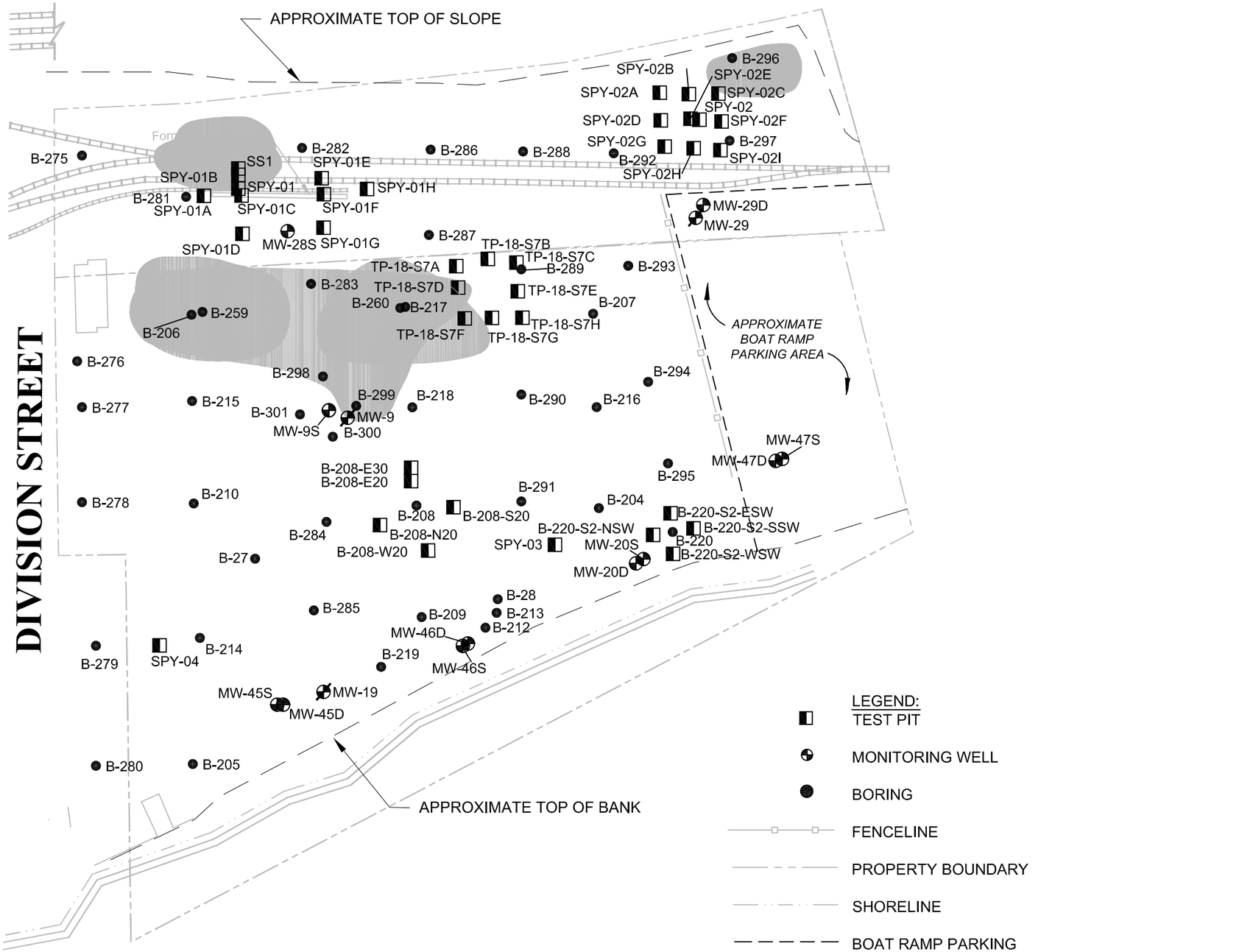

Figure 4-12

Estimated Distribution of Indicator Hazardous Substances in Soil, 10-15 Foot Depth Interval

Port of Ridgefield
Ridgefield, Washington

GENERAL EXPLANATION:
S = SHALLOW PORTION OF THE UPPER WATER-BEARING ZONE

D = DEEP PORTION OF THE UPPER WATER-BEARING ZONE

NOTE:
DISTRIBUTION OF INDICATOR HAZARDOUS SUBSTANCES CREATED BY OVERLAYING ESTIMATED SOIL EXCEEDANCE OF ARSENIC OF MTCA METHOD A CLEANUP LEVEL (DIRECT CONTACT PATHWAY) OF 20 MILLIGRAMS PER KILOGRAM, PENTACHLOROPHENOL OF MTCA METHOD B CLEANUP LEVEL (DIRECT CONTACT PATHWAY) OF 8,330 MICROGRAMS PER KILOGRAM (ug/kg), AND CHRYSENE OF MTCA METHOD B CLEANUP LEVEL (DIRECT CONTACT PATHWAY) OF 137 ug/kg.

N

0 100 200
FEET

MAUL FOSTER ALONGI INC.
ENVIRONMENTAL & ENGINEERING CONSULTANTS
Vancouver, WA | Portland, OR | www.MFAinc.org

File: G:\9003.01 PORT OF RIDGEFIELD\31_FINAL RI-RA REPORT-CELL 3\FIG4-12_HAZARDOUS SUBSTANCES.DWG Last edited: FEB. 15, 2007 @ 10:06 a.m. by: jfisher Xr

Layout: 1 Project: 9003.01.31 Drawn By: J. Fisher Approved By: A.Hughes

Legend

- Soil Boring
- Surface Soil Sample
- Test Pit
- Tax Lot Boundary
- Cell 4 Boundary
- IHS Exceedance in Surface Soil (0 to 2.5 ft bgs)
- IHS Exceedance in Surface and Subsurface Soil (0 to 10.0 ft bgs)

Notes:
1. ft bgs = feet below ground surface
2. IHS = indicator hazardous substance
3. IHS exceedances are arsenic, chromium, copper, zinc, pentachlorophenol, carcinogenic polycyclic aromatic hydrocarbons, and dioxin/furan concentrations which exceed MTCA Method B soil cleanup levels, background concentrations, and/or ecological screening levels.

Source: Aerial photograph (2007) and tax lot data (September 2008) obtained from Clark County

N

0 120 240

Feet

Figure 5-5
Indicator Hazardous Substance Exceedances in Soil in Cell 4

Port of Ridgefield
Ridgefield, Washington

MAUL FOSTER ALONGI

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Project: 9003.01.36/07 Produced By: Hines Approved By: A. Hughes

APPENDIX D

ANALYTICAL DATA – SOIL GENERATED FROM GROUNDWATER INVESTIGATION

Specialty Analytical

11711 SE Capps Road
Clackamas, OR 97015
(503) 607-1331
Fax (503) 607-1336

July 07, 2008

Alan Hughes
Maul, Foster & Alongi
7223 NE Hazel Dell Avenue
Suite B
Vancouver, WA 98665

TEL: (360) 694-2691
FAX (360) 906-1958

RE: Port of Ridgefield / 9003.01.36

Order No.: 0806103

Dear Alan Hughes:

Specialty Analytical received 5 samples on 6/23/2008 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical

Date: *07-Jul-08*

CLIENT:	Maul, Foster & Alongi	**Lab Order:**	0806103
Project:	Port of Ridgefield / 9003.01.36		

Lab ID:	0806103-01	**Collection Date:**	6/18/2008 3:01:00 PM
Client Sample ID:	MW58D-S-0.0	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		**PER CLIENT**				Analyst: **ADM**
Hold	Hold				1	6/24/2008

Lab ID:	0806103-02	**Collection Date:**	6/18/2008 3:25:00 PM
Client Sample ID:	MW58D-S-5.0	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		**PER CLIENT**				Analyst: **ADM**
Hold	Hold				1	6/24/2008

Specialty Analytical

Date: *07-Jul-08*

CLIENT: Maul, Foster & Alongi
Project: Port of Ridgefield / 9003.01.36
Lab Order: 0806103

Lab ID: 0806103-03
Client Sample ID: MW58D-S-10.0
Collection Date: 6/18/2008 3:29:00 PM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX		**NWTPH-DX**				Analyst: **kms**
Diesel	33.3	16.3	A1	mg/Kg-dry	1	6/24/2008
Lube Oil	103	54.4		mg/Kg-dry	1	6/24/2008
Surr: o-Terphenyl	73.4	50-150		%REC	1	6/24/2008
TOTAL METALS BY ICP		**E6010**				Analyst: **zau**
Arsenic	15.0	1.62		mg/Kg-dry	1	6/24/2008 4:01:32 PM
Chromium	27.0	0.406		mg/Kg-dry	1	6/24/2008 4:01:32 PM
Copper	18.8	0.812		mg/Kg-dry	1	6/24/2008 4:01:32 PM
Zinc	117	0.812		mg/Kg-dry	1	6/24/2008 4:01:32 PM
SEMIVOLATILE ORGANICS BY GC/MS		**SW8270D**				Analyst: **bda**
1-Methylnaphthalene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
2,3,4,6-Tetrachlorophenol	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
2,3,4-Trichlorophenol	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
2,3,5,6-Tetrachlorophenol	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
2,3,5-Trichlorophenol	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
2,3,6-Trichlorophenol	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
2,4,5-Trichlorophenol	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
2,4,6-Trichlorophenol	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
2-Methylnaphthalene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
3,4,5-Trichlorophenol	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Acenaphthene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Acenaphthylene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Anthracene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Benz(a)anthracene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Benzo(a)pyrene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Benzo(b)fluoranthene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Benzo(g,h,i)perylene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Benzo(k)fluoranthene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Bis(2-ethylhexyl)phthalate	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Carbazole	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Chrysene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Dibenz(a,h)anthracene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Dibenzofuran	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Fluoranthene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Fluorene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Indeno(1,2,3-cd)pyrene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Naphthalene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Pentachlorophenol	720	54.4		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Phenanthrene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM

CLIENT: Maul, Foster & Alongi
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SEMIVOLATILE ORGANICS BY GC/MS		SW8270D				Analyst: **bda**
Pyrene	ND	36.3		µg/Kg-dry	1	6/27/2008 10:04:00 PM
Surr: 2,4,6-Tribromophenol	54.7	57.8-119	S	%REC	1	6/27/2008 10:04:00 PM
Surr: 2-Fluorobiphenyl	69.5	52.6-93.2		%REC	1	6/27/2008 10:04:00 PM
Surr: 2-Fluorophenol	46.6	40.7-111		%REC	1	6/27/2008 10:04:00 PM
Surr: 4-Terphenyl-d14	76.7	49.8-118		%REC	1	6/27/2008 10:04:00 PM
Surr: Nitrobenzene-d5	53.2	44.8-103		%REC	1	6/27/2008 10:04:00 PM
Surr: Phenol-d6	48.2	47.5-117		%REC	1	6/27/2008 10:04:00 PM

VOLATILES BY GC/MS		SW8260B				Analyst: **das**
1,1,1,2-Tetrachloroethane	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,1,1-Trichloroethane	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,1,2,2-Tetrachloroethane	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,1,2-Trichloroethane	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,1-Dichloroethane	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,1-Dichloroethene	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,1-Dichloropropene	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,2,3-Trichlorobenzene	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,2,3-Trichloropropane	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,2,4-Trichlorobenzene	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,2,4-Trimethylbenzene	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,2-Dibromo-3-chloropropane	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,2-Dibromoethane	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,2-Dichlorobenzene	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,2-Dichloroethane	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,2-Dichloropropane	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,3,5-Trimethylbenzene	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,3-Dichlorobenzene	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,3-Dichloropropane	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
1,4-Dichlorobenzene	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
2,2-Dichloropropane	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
2-Butanone	ND	21.8		µg/Kg-dry	1	7/2/2008 4:18:00 AM
2-Chlorotoluene	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
2-Hexanone	ND	21.8		µg/Kg-dry	1	7/2/2008 4:18:00 AM
4-Chlorotoluene	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
4-Isopropyltoluene	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
4-Methyl-2-pentanone	ND	21.8		µg/Kg-dry	1	7/2/2008 4:18:00 AM
Acetone	ND	54.4		µg/Kg-dry	1	7/2/2008 4:18:00 AM
Benzene	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
Bromobenzene	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
Bromochloromethane	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
Bromodichloromethane	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
Bromoform	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
Bromomethane	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
Carbon disulfide	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM
Carbon tetrachloride	ND	10.9		µg/Kg-dry	1	7/2/2008 4:18:00 AM

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VOLATILES BY GC/MS		SW8260B			Analyst: das
Chlorobenzene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Chloroethane	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Chloroform	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Chloromethane	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
cis-1,2-Dichloroethene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
cis-1,3-Dichloropropene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Dibromochloromethane	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Dibromomethane	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Dichlorodifluoromethane	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Ethylbenzene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Hexachlorobutadiene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Isopropylbenzene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
m,p-Xylene	ND	21.8	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Methyl tert-butyl ether	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Methylene chloride	ND	54.4	µg/Kg-dry	1	7/2/2008 4:18:00 AM
n-Butylbenzene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
n-Propylbenzene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Naphthalene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
o-Xylene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
sec-Butylbenzene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Styrene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
tert-Butylbenzene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Tetrachloroethene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Toluene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
trans-1,2-Dichloroethene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
trans-1,3-Dichloropropene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Trichloroethene	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Trichlorofluoromethane	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Vinyl chloride	ND	10.9	µg/Kg-dry	1	7/2/2008 4:18:00 AM
Surr: 1,2-Dichloroethane-d4	100	71.5-112	%REC	1	7/2/2008 4:18:00 AM
Surr: 4-Bromofluorobenzene	95.4	75.7-122	%REC	1	7/2/2008 4:18:00 AM
Surr: Dibromofluoromethane	105	64.3-124	%REC	1	7/2/2008 4:18:00 AM
Surr: Toluene-d8	95.3	74.9-120	%REC	1	7/2/2008 4:18:00 AM

Specialty Analytical

Date: *07-Jul-08*

CLIENT: Maul, Foster & Alongi
Project: Port of Ridgefield / 9003.01.36
Lab Order: 0806103

Lab ID: 0806103-04
Client Sample ID: MW58D-S-13.5
Collection Date: 6/18/2008 3:45:00 PM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX		**NWTPH-DX**				Analyst: **kms**
Diesel	74.9	22.4	A1	mg/Kg-dry	1	6/24/2008
Lube Oil	96.8	74.5	A2	mg/Kg-dry	1	6/24/2008
Surr: o-Terphenyl	77.3	50-150		%REC	1	6/24/2008
TOTAL METALS BY ICP		**E6010**				Analyst: **zau**
Arsenic	4.47	2.48		mg/Kg-dry	1	6/24/2008 4:21:43 PM
Chromium	23.5	0.621		mg/Kg-dry	1	6/24/2008 4:21:43 PM
Copper	32.5	1.24		mg/Kg-dry	1	6/24/2008 4:21:43 PM
Zinc	162	1.24		mg/Kg-dry	1	6/24/2008 4:21:43 PM
SEMIVOLATILE ORGANICS BY GC/MS		**SW8270D**				Analyst: **bda**
1-Methylnaphthalene	1090	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
2,3,4,6-Tetrachlorophenol	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
2,3,4-Trichlorophenol	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
2,3,5,6-Tetrachlorophenol	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
2,3,5-Trichlorophenol	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
2,3,6-Trichlorophenol	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
2,4,5-Trichlorophenol	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
2,4,6-Trichlorophenol	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
2-Methylnaphthalene	103	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
3,4,5-Trichlorophenol	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Acenaphthene	512	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Acenaphthylene	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Anthracene	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Benz(a)anthracene	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Benzo(a)pyrene	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Benzo(b)fluoranthene	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Benzo(g,h,i)perylene	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Benzo(k)fluoranthene	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Bis(2-ethylhexyl)phthalate	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Carbazole	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Chrysene	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Dibenz(a,h)anthracene	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Dibenzofuran	50.2	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Fluoranthene	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Fluorene	68.6	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Indeno(1,2,3-cd)pyrene	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Naphthalene	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Pentachlorophenol	ND	74.5		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Phenanthrene	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM

CLIENT: Maul, Foster & Alongi **Lab Order:** 0806103
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SEMIVOLATILE ORGANICS BY GC/MS		**SW8270D**				Analyst: **bda**
Pyrene	ND	49.7		µg/Kg-dry	1	6/27/2008 9:32:00 PM
Surr: 2,4,6-Tribromophenol	52.8	57.8-119	S	%REC	1	6/27/2008 9:32:00 PM
Surr: 2-Fluorobiphenyl	68.0	52.6-93.2		%REC	1	6/27/2008 9:32:00 PM
Surr: 2-Fluorophenol	50.1	40.7-111		%REC	1	6/27/2008 9:32:00 PM
Surr: 4-Terphenyl-d14	79.3	49.8-118		%REC	1	6/27/2008 9:32:00 PM
Surr: Nitrobenzene-d5	57.1	44.8-103		%REC	1	6/27/2008 9:32:00 PM
Surr: Phenol-d6	49.5	47.5-117		%REC	1	6/27/2008 9:32:00 PM
VOLATILES BY GC/MS		**SW8260B**				Analyst: **das**
1,1,1,2-Tetrachloroethane	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,1,1-Trichloroethane	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,1,2,2-Tetrachloroethane	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,1,2-Trichloroethane	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,1-Dichloroethane	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,1-Dichloroethene	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,1-Dichloropropene	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,2,3-Trichlorobenzene	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,2,3-Trichloropropane	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,2,4-Trichlorobenzene	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,2,4-Trimethylbenzene	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,2-Dibromo-3-chloropropane	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,2-Dibromoethane	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,2-Dichlorobenzene	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,2-Dichloroethane	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,2-Dichloropropane	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,3,5-Trimethylbenzene	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,3-Dichlorobenzene	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,3-Dichloropropane	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
1,4-Dichlorobenzene	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
2,2-Dichloropropane	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
2-Butanone	ND	29.8		µg/Kg-dry	1	7/2/2008 4:53:00 AM
2-Chlorotoluene	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
2-Hexanone	ND	29.8		µg/Kg-dry	1	7/2/2008 4:53:00 AM
4-Chlorotoluene	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
4-Isopropyltoluene	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
4-Methyl-2-pentanone	ND	29.8		µg/Kg-dry	1	7/2/2008 4:53:00 AM
Acetone	ND	74.5		µg/Kg-dry	1	7/2/2008 4:53:00 AM
Benzene	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
Bromobenzene	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
Bromochloromethane	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
Bromodichloromethane	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
Bromoform	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
Bromomethane	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
Carbon disulfide	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM
Carbon tetrachloride	ND	14.9		µg/Kg-dry	1	7/2/2008 4:53:00 AM

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Project: Port of Ridgefield / 9003.01.36
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VOLATILES BY GC/MS		SW8260B			Analyst: das
Chlorobenzene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Chloroethane	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Chloroform	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Chloromethane	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
cis-1,2-Dichloroethene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
cis-1,3-Dichloropropene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Dibromochloromethane	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Dibromomethane	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Dichlorodifluoromethane	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Ethylbenzene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Hexachlorobutadiene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Isopropylbenzene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
m,p-Xylene	ND	29.8	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Methyl tert-butyl ether	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Methylene chloride	ND	74.5	µg/Kg-dry	1	7/2/2008 4:53:00 AM
n-Butylbenzene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
n-Propylbenzene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Naphthalene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
o-Xylene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
sec-Butylbenzene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Styrene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
tert-Butylbenzene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Tetrachloroethene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Toluene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
trans-1,2-Dichloroethene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
trans-1,3-Dichloropropene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Trichloroethene	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Trichlorofluoromethane	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Vinyl chloride	ND	14.9	µg/Kg-dry	1	7/2/2008 4:53:00 AM
Surr: 1,2-Dichloroethane-d4	105	71.5-112	%REC	1	7/2/2008 4:53:00 AM
Surr: 4-Bromofluorobenzene	94.9	75.7-122	%REC	1	7/2/2008 4:53:00 AM
Surr: Dibromofluoromethane	107	64.3-124	%REC	1	7/2/2008 4:53:00 AM
Surr: Toluene-d8	96.5	74.9-120	%REC	1	7/2/2008 4:53:00 AM

Specialty Analytical

Date: *07-Jul-08*

CLIENT: Maul, Foster & Alongi
Project: Port of Ridgefield / 9003.01.36
Lab Order: 0806103

Lab ID: 0806103-05
Collection Date: 6/20/2008 2:00:00 PM
Client Sample ID: Box-Comp-1
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX		**NWTPH-DX**				Analyst: **kms**
Diesel	23.2	19.3	A1	mg/Kg-dry	1	6/24/2008
Lube Oil	ND	64.4		mg/Kg-dry	1	6/24/2008
Surr: o-Terphenyl	66.4	50-150		%REC	1	6/24/2008
TOTAL METALS BY ICP		**E6010**				Analyst: **zau**
Arsenic	12.1	1.98		mg/Kg-dry	1	6/24/2008 4:26:41 PM
Chromium	35.5	0.495		mg/Kg-dry	1	6/24/2008 4:26:41 PM
Copper	15.5	0.990		mg/Kg-dry	1	6/24/2008 4:26:41 PM
Zinc	102	0.990		mg/Kg-dry	1	6/24/2008 4:26:41 PM
SEMIVOLATILE ORGANICS BY GC/MS		**SW8270D**				Analyst: **bda**
1-Methylnaphthalene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
2,3,4,6-Tetrachlorophenol	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
2,3,4-Trichlorophenol	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
2,3,5,6-Tetrachlorophenol	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
2,3,5-Trichlorophenol	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
2,3,6-Trichlorophenol	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
2,4,5-Trichlorophenol	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
2,4,6-Trichlorophenol	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
2-Methylnaphthalene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
3,4,5-Trichlorophenol	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Acenaphthene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Acenaphthylene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Anthracene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Benz(a)anthracene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Benzo(a)pyrene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Benzo(b)fluoranthene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Benzo(g,h,i)perylene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Benzo(k)fluoranthene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Bis(2-ethylhexyl)phthalate	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Carbazole	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Chrysene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Dibenz(a,h)anthracene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Dibenzofuran	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Fluoranthene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Fluorene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Indeno(1,2,3-cd)pyrene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Naphthalene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Pentachlorophenol	ND	64.4		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Phenanthrene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM

Specialty Analytical

Date: *07-Jul-08*

CLIENT: Maul, Foster & Alongi
Project: Port of Ridgefield / 9003.01.36

Lab Order: 0806103

SEMIVOLATILE ORGANICS BY GC/MS		SW8270D				Analyst: **bda**
Pyrene	ND	42.9		µg/Kg-dry	1	6/27/2008 9:00:00 PM
Surr: 2,4,6-Tribromophenol	56.8	57.8-119	S	%REC	1	6/27/2008 9:00:00 PM
Surr: 2-Fluorobiphenyl	81.1	52.6-93.2		%REC	1	6/27/2008 9:00:00 PM
Surr: 2-Fluorophenol	55.9	40.7-111		%REC	1	6/27/2008 9:00:00 PM
Surr: 4-Terphenyl-d14	78.5	49.8-118		%REC	1	6/27/2008 9:00:00 PM
Surr: Nitrobenzene-d5	67.3	44.8-103		%REC	1	6/27/2008 9:00:00 PM
Surr: Phenol-d6	55.5	47.5-117		%REC	1	6/27/2008 9:00:00 PM

CLIENT: Maul, Foster & Alongi
Work Order: 0806103
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MBLK-21332**	SampType: **MBLK**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **6/24/2008**	Run ID: **TJA IRIS_080624D**
Client ID: **ZZZZZ**	Batch ID: **21332**	TestNo: **E6010**		Analysis Date: **6/24/2008**	SeqNo: **544994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	2.00									
Chromium	ND	0.500									
Copper	ND	1.00									
Zinc	0.17	1.00									J

Sample ID: **LCS-21332**	SampType: **LCS**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **6/24/2008**	Run ID: **TJA IRIS_080624D**
Client ID: **ZZZZZ**	Batch ID: **21332**	TestNo: **E6010**		Analysis Date: **6/24/2008**	SeqNo: **544995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	103.9	2.00	100	0	104	85.1	107	0	0		
Chromium	27.35	0.500	25	0	109	84	113	0	0		
Copper	51.67	1.00	50	0	103	91.3	111	0	0		
Zinc	52.46	1.00	50	0	105	86.8	112	0	0		

Sample ID: **0806090-02AMS**	SampType: **MS**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **6/24/2008**	Run ID: **TJA IRIS_080624D**
Client ID: **ZZZZZ**	Batch ID: **21332**	TestNo: **E6010**		Analysis Date: **6/24/2008**	SeqNo: **544998**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	91.55	1.72	86.21	6.491	98.7	86.1	109	0	0		
Chromium	30.77	0.431	21.55	10.52	94	75	121	0	0		
Copper	48.05	0.862	43.1	6.095	97.3	75.1	126	0	0		
Zinc	68.55	0.862	43.1	29.91	89.7	86.2	113	0	0		

Sample ID: **0806090-02AMSD**	SampType: **MSD**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **6/24/2008**	Run ID: **TJA IRIS_080624D**
Client ID: **ZZZZZ**	Batch ID: **21332**	TestNo: **E6010**		Analysis Date: **6/24/2008**	SeqNo: **544999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	89.66	1.69	84.75	6.491	98.1	86.1	109	91.55	2.09	20	
Chromium	30.46	0.424	21.19	10.52	94.1	75	121	30.77	1.01	20	

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blanl
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: Maul, Foster & Alongi
Work Order: 0806103
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **0806090-02AMSD**	SampType: **MSD**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **6/24/2008**	Run ID: **TJA IRIS_080624D**
Client ID: **ZZZZZ**	Batch ID: **21332**	TestNo: **E6010**		Analysis Date: **6/24/2008**	SeqNo: **544999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	48.08	0.847	42.37	6.095	99.1	75.1	126	48.05	0.0687	20	
Zinc	65.26	0.847	42.37	29.91	83.4	86.2	113	68.55	4.92	20	S

Sample ID: **0806090-02ADUP**	SampType: **DUP**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **6/24/2008**	Run ID: **TJA IRIS_080624D**
Client ID: **ZZZZZ**	Batch ID: **21332**	TestNo: **E6010**		Analysis Date: **6/24/2008**	SeqNo: **544997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	5.798	1.75	0	0	0	0	0	6.491	11.3	20	
Chromium	10.3	0.439	0	0	0	0	0	10.52	2.10	20	
Copper	5.702	0.877	0	0	0	0	0	6.095	6.66	20	
Zinc	29.24	0.877	0	0	0	0	0	29.91	2.26	20	

Sample ID: **CCV**	SampType: **CCV**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date:	Run ID: **TJA IRIS_080624D**
Client ID: **ZZZZZ**	Batch ID: **21332**	TestNo: **E6010**		Analysis Date: **6/24/2008**	SeqNo: **544993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	104.5	2.00	100	0	104	90	110	0	0		
Chromium	26.79	0.500	25	0	107	90	110	0	0		
Copper	50.55	1.00	50	0	101	90	110	0	0		
Zinc	51.87	1.00	50	0	104	90	110	0	0		

Sample ID: **CCV**	SampType: **CCV**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date:	Run ID: **TJA IRIS_080624D**
Client ID: **ZZZZZ**	Batch ID: **21332**	TestNo: **E6010**		Analysis Date: **6/24/2008**	SeqNo: **545001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	104.4	2.00	100	0	104	90	110	0	0		
Chromium	26.99	0.500	25	0	108	90	110	0	0		
Copper	50.69	1.00	50	0	101	90	110	0	0		
Zinc	51.77	1.00	50	0	104	90	110	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0806103
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **CCV**	SampType: **CCV**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date:	Run ID: **TJA IRIS_080624D**
Client ID: **ZZZZZ**	Batch ID: **21332**	TestNo: **E6010**		Analysis Date: **6/24/2008**	SeqNo: **545006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	104.6	2.00	100	0	105	90	110	0	0		
Chromium	26.76	0.500	25	0	107	90	110	0	0		
Copper	50.59	1.00	50	0	101	90	110	0	0		
Zinc	51.64	1.00	50	0	103	90	110	0	0		

Sample ID: **ICV**	SampType: **ICV**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date:	Run ID: **TJA IRIS_080624D**
Client ID: **ZZZZZ**	Batch ID: **21332**	TestNo: **E6010**		Analysis Date: **6/24/2008**	SeqNo: **544992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	100.8	2.00	100	0	101	90	110	0	0		
Chromium	26.12	0.500	25	0	104	90	110	0	0		
Copper	49.67	1.00	50	0	99.3	90	110	0	0		
Zinc	50.88	1.00	50	0	102	90	110	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0806103
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **MB-21367** SampType: **MBLK** TestCode: **8260_S** Units: **µg/Kg** Prep Date: **7/1/2008** Run ID: **5973J_080701A**
Client ID: **ZZZZZ** Batch ID: **21367** TestNo: **SW8260B** Analysis Date: **7/1/2008** SeqNo: **546060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	10.0									
1,1,1-Trichloroethane	ND	10.0									
1,1,2,2-Tetrachloroethane	ND	10.0									
1,1,2-Trichloroethane	ND	10.0									
1,1-Dichloroethane	ND	10.0									
1,1-Dichloroethene	ND	10.0									
1,1-Dichloropropene	ND	10.0									
1,2,3-Trichlorobenzene	ND	10.0									
1,2,3-Trichloropropane	ND	10.0									
1,2,4-Trichlorobenzene	ND	10.0									
1,2,4-Trimethylbenzene	ND	10.0									
1,2-Dibromo-3-chloropropane	ND	10.0									
1,2-Dibromoethane	ND	10.0									
1,2-Dichlorobenzene	ND	10.0									
1,2-Dichloroethane	ND	10.0									
1,2-Dichloropropane	ND	10.0									
1,3,5-Trimethylbenzene	ND	10.0									
1,3-Dichlorobenzene	ND	10.0									
1,3-Dichloropropane	ND	10.0									
1,4-Dichlorobenzene	ND	10.0									
2,2-Dichloropropane	ND	10.0									
2-Butanone	ND	20.0									
2-Chlorotoluene	ND	10.0									
2-Hexanone	ND	20.0									
4-Chlorotoluene	ND	10.0									
4-Isopropyltoluene	ND	10.0									
4-Methyl-2-pentanone	ND	20.0									
Acetone	ND	50.0									
Benzene	ND	10.0									
Bromobenzene	ND	10.0									
Bromochloromethane	ND	10.0									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0806103
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **MB-21367** SampType: **MBLK** TestCode: **8260_S** Units: **µg/Kg** Prep Date: **7/1/2008** Run ID: **5973J_080701A**
Client ID: **ZZZZZ** Batch ID: **21367** TestNo: **SW8260B** Analysis Date: **7/1/2008** SeqNo: **546060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Bromodichloromethane	ND	10.0									
Bromoform	ND	10.0									
Bromomethane	ND	10.0									
Carbon disulfide	ND	10.0									
Carbon tetrachloride	ND	10.0									
Chlorobenzene	ND	10.0									
Chloroethane	ND	10.0									
Chloroform	ND	10.0									
Chloromethane	0.51	10.0									J
cis-1,2-Dichloroethene	ND	10.0									
cis-1,3-Dichloropropene	ND	10.0									
Dibromochloromethane	ND	10.0									
Dibromomethane	ND	10.0									
Dichlorodifluoromethane	ND	10.0									
Ethylbenzene	ND	10.0									
Hexachlorobutadiene	ND	10.0									
Isopropylbenzene	ND	10.0									
m,p-Xylene	ND	20.0									
Methyl tert-butyl ether	ND	10.0									
Methylene chloride	5.63	50.0									J
n-Butylbenzene	ND	10.0									
n-Propylbenzene	ND	10.0									
Naphthalene	ND	10.0									
o-Xylene	ND	10.0									
sec-Butylbenzene	ND	10.0									
Styrene	ND	10.0									
tert-Butylbenzene	ND	10.0									
Tetrachloroethene	ND	10.0									
Toluene	ND	10.0									
trans-1,2-Dichloroethene	ND	10.0									
trans-1,3-Dichloropropene	ND	10.0									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0806103
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **MB-21367**	SampType: **MBLK**	TestCode: **8260_S**	Units: **µg/Kg**	Prep Date: **7/1/2008**	Run ID: **5973J_080701A**
Client ID: **ZZZZZ**	Batch ID: **21367**	TestNo: **SW8260B**		Analysis Date: **7/1/2008**	SeqNo: **546060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichloroethene	ND	10.0									
Trichlorofluoromethane	ND	10.0									
Vinyl chloride	ND	10.0									
Surr: 1,2-Dichloroethane-d4	106.3	0	100	0	106	71.5	112	0	0		
Surr: 4-Bromofluorobenzene	96.67	0	100	0	96.7	75.7	122	0	0		
Surr: Dibromofluoromethane	107.3	0	100	0	107	64.3	124	0	0		
Surr: Toluene-d8	95.85	0	100	0	95.8	74.9	120	0	0		

Sample ID: **LCS-21367**	SampType: **LCS**	TestCode: **8260_S**	Units: **µg/Kg**	Prep Date: **7/1/2008**	Run ID: **5973J_080701A**
Client ID: **ZZZZZ**	Batch ID: **21367**	TestNo: **SW8260B**		Analysis Date: **7/1/2008**	SeqNo: **546059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	61.16	10.0	60	0	102	65.4	133	0	0		
Benzene	58.57	10.0	60	0	97.6	78	123	0	0		
Chlorobenzene	55.43	10.0	60	0	92.4	79.5	125	0	0		
Toluene	58	10.0	60	0	96.7	77.5	132	0	0		
Trichloroethene	57.75	10.0	60	0	96.2	72.4	124	0	0		

Sample ID: **0806103-03BMS**	SampType: **MS**	TestCode: **8260_S**	Units: **µg/Kg-dry**	Prep Date: **7/1/2008**	Run ID: **5973J_080701A**
Client ID: **MW58D-S-10.0**	Batch ID: **21367**	TestNo: **SW8260B**		Analysis Date: **7/2/2008**	SeqNo: **546066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	60.37	10.9	65.26	0	92.5	69.2	158	0	0		
Benzene	55.16	10.9	65.26	0	84.5	71.7	147	0	0		
Chlorobenzene	51	10.9	65.26	0	78.2	75	148	0	0		
Toluene	52.63	10.9	65.26	0	80.6	75.8	153	0	0		
Trichloroethene	54.17	10.9	65.26	0	83	77.1	138	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0806103
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: **0806103-03BMSD**	SampType: **MSD**	TestCode: **8260_S**	Units: **µg/Kg-dry**	Prep Date: **7/1/2008**	Run ID: **5973J_080701A**
Client ID: **MW58D-S-10.0**	Batch ID: **21367**	TestNo: **SW8260B**		Analysis Date: **7/2/2008**	SeqNo: **546063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	49.74	10.9	65.26	0	76.2	69.2	158	60.37	19.3	20	
Benzene	48.63	10.9	65.26	0	74.5	71.7	147	55.16	12.6	20	
Chlorobenzene	44.78	10.9	65.26	0	68.6	75	148	51	13.0	20	S
Toluene	46.42	10.9	65.26	0	71.1	75.8	153	52.63	12.5	20	S
Trichloroethene	47.28	10.9	65.26	0	72.4	77.1	138	54.17	13.6	20	S

Sample ID: **CCV**	SampType: **CCV**	TestCode: **8260_S**	Units: **µg/Kg**	Prep Date:	Run ID: **5973J_080701A**
Client ID: **ZZZZZ**	Batch ID: **21367**	TestNo: **SW8260B**		Analysis Date: **7/1/2008**	SeqNo: **546058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	62.32	10.0	60	0	104	80	120	0	0		
1,2-Dichloropropane	59.81	10.0	60	0	99.7	80	120	0	0		
Chloroform	60.19	10.0	60	0	100	80	120	0	0		
Ethylbenzene	58.3	10.0	60	0	97.2	80	120	0	0		
Toluene	58.7	10.0	60	0	97.8	80	120	0	0		
Vinyl chloride	62.07	10.0	60	0	103	80	120	0	0		

Sample ID: **CCV**	SampType: **CCV**	TestCode: **8260_S**	Units: **µg/Kg**	Prep Date:	Run ID: **5973J_080701A**
Client ID: **ZZZZZ**	Batch ID: **21367**	TestNo: **SW8260B**		Analysis Date: **7/2/2008**	SeqNo: **546064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	54.29	10.0	60	0	90.5	80	120	0	0		
1,2-Dichloropropane	53.34	10.0	60	0	88.9	80	120	0	0		
Chloroform	57.37	10.0	60	0	95.6	80	120	0	0		
Ethylbenzene	53.34	10.0	60	0	88.9	80	120	0	0		
Toluene	52.91	10.0	60	0	88.2	80	120	0	0		
Vinyl chloride	50.26	10.0	60	0	83.8	80	120	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0806103
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270POR_S

Sample ID: **MB-21330** SampType: **MBLK** TestCode: **8270POR_S** Units: **µg/Kg** Prep Date: **6/24/2008** Run ID: **5973G_080627A**
Client ID: **ZZZZZ** Batch ID: **21330** TestNo: **SW8270D** Analysis Date: **6/27/2008** SeqNo: **545625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1-Methylnaphthalene	ND	33.3									
2,3,4,6-Tetrachlorophenol	ND	33.3									
2,3,4-Trichlorophenol	ND	33.3									
2,3,5,6-Tetrachlorophenol	ND	33.3									
2,3,5-Trichlorophenol	ND	33.3									
2,3,6-Trichlorophenol	ND	33.3									
2,4,5-Trichlorophenol	ND	33.3									
2,4,6-Trichlorophenol	ND	33.3									
2-Methylnaphthalene	ND	33.3									
3,4,5-Trichlorophenol	ND	33.3									
Acenaphthene	ND	33.3									
Acenaphthylene	ND	33.3									
Anthracene	ND	33.3									
Benz(a)anthracene	ND	33.3									
Benzo(a)pyrene	29.67	33.3									J
Benzo(b)fluoranthene	22.33	33.3									J
Benzo(g,h,i)perylene	38.33	33.3									
Benzo(k)fluoranthene	27.67	33.3									J
Bis(2-ethylhexyl)phthalate	ND	33.3									
Carbazole	ND	33.3									
Chrysene	9.333	33.3									J
Dibenz(a,h)anthracene	37.33	33.3									
Dibenzofuran	ND	33.3									
Fluoranthene	ND	33.3									
Fluorene	ND	33.3									
Indeno(1,2,3-cd)pyrene	38.67	33.3									
Naphthalene	ND	33.3									
Pentachlorophenol	ND	50.0									
Phenanthrene	ND	33.3									
Pyrene	ND	33.3									
Surr: 2,4,6-Tribromophenol	1837	0	3333	0	55.1	57.8	119	0	0		S

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0806103
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270POR_S

Sample ID: **MB-21330** SampType: **MBLK** TestCode: **8270POR_S** Units: **µg/Kg** Prep Date: **6/24/2008** Run ID: **5973G_080627A**
Client ID: **ZZZZZ** Batch ID: **21330** TestNo: **SW8270D** Analysis Date: **6/27/2008** SeqNo: **545625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	2408	0	3333	0	72.3	52.6	93.2	0	0		
Surr: 2-Fluorophenol	1461	0	3333	0	43.8	40.7	111	0	0		
Surr: 4-Terphenyl-d14	2736	0	3333	0	82.1	49.8	118	0	0		
Surr: Nitrobenzene-d5	1760	0	3333	0	52.8	44.8	103	0	0		
Surr: Phenol-d6	1406	0	3333	0	42.2	47.5	117	0	0		S

Sample ID: **LCS-21330** SampType: **LCS** TestCode: **8270POR_S** Units: **µg/Kg** Prep Date: **6/24/2008** Run ID: **5973G_080627A**
Client ID: **ZZZZZ** Batch ID: **21330** TestNo: **SW8270D** Analysis Date: **6/27/2008** SeqNo: **545626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	1167	33.3	1667	0	70	30.9	106	0	0		
1,4-Dichlorobenzene	1025	33.3	1667	0	61.5	31.4	98.2	0	0		
2,4-Dinitrotoluene	1429	33.3	1667	0	85.7	59.7	111	0	0		
2-Chlorophenol	1021	33.3	1667	0	61.2	46.2	105	0	0		
4-Chloro-3-methylphenol	1304	33.3	1667	0	78.3	47.4	114	0	0		
4-Nitrophenol	1227	167	1667	0	73.6	45.3	114	0	0		
Acenaphthene	1253	33.3	1667	0	75.2	48.2	105	0	0		
N-Nitrosodi-n-propylamine	992	33.3	1667	0	59.5	42.4	101	0	0		
Pentachlorophenol	882.7	50.0	1667	0	53	46.8	120	0	0		
Phenol	1017	33.3	1667	0	61	51.1	103	0	0		
Pyrene	1326	33.3	1667	0	79.6	56.7	130	0	0		

Sample ID: **0806103-03AMS** SampType: **MS** TestCode: **8270POR_S** Units: **µg/Kg-dry** Prep Date: **6/24/2008** Run ID: **5973G_080627A**
Client ID: **MW58D-S-10.0** Batch ID: **21330** TestNo: **SW8270D** Analysis Date: **6/27/2008** SeqNo: **545630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	1332	36.3	1813	0	73.5	31.1	92.7	0	0		
1,4-Dichlorobenzene	1329	36.3	1813	0	73.3	16.5	85.6	0	0		
2,4-Dinitrotoluene	1406	36.3	1813	0	77.6	43.4	118	0	0		
2-Chlorophenol	1369	36.3	1813	0	75.5	36.8	103	0	0		
4-Chloro-3-methylphenol	1410	36.3	1813	0	77.8	49.5	119	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
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R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0806103
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270POR_S

Sample ID: **0806103-03AMS**	SampType: **MS**	TestCode: **8270POR_S**	Units: **µg/Kg-dry**	Prep Date: **6/24/2008**	Run ID: **5973G_080627A**
Client ID: **MW58D-S-10.0**	Batch ID: **21330**	TestNo: **SW8270D**		Analysis Date: **6/27/2008**	SeqNo: **545630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
4-Nitrophenol	1113	181	1813	0	61.4	45	111	0	0		
Acenaphthene	1339	36.3	1813	0	73.9	45.1	102	0	0		
N-Nitrosodi-n-propylamine	1324	36.3	1813	0	73.1	45.6	94.1	0	0		
Pentachlorophenol	1770	54.4	1813	719.7	57.9	36.6	112	0	0		
Phenol	1327	36.3	1813	0	73.2	37.7	107	0	0		
Pyrene	1347	36.3	1813	0	74.3	42.4	131	0	0		

Sample ID: **0806103-03AMSD**	SampType: **MSD**	TestCode: **8270POR_S**	Units: **µg/Kg-dry**	Prep Date: **6/24/2008**	Run ID: **5973G_080627A**
Client ID: **MW58D-S-10.0**	Batch ID: **21330**	TestNo: **SW8270D**		Analysis Date: **6/27/2008**	SeqNo: **545631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	1212	36.3	1813	0	66.8	31.1	92.7	1332	9.46	20	
1,4-Dichlorobenzene	1180	36.3	1813	0	65.1	16.5	85.6	1329	11.9	20	
2,4-Dinitrotoluene	1314	36.3	1813	0	72.5	43.4	118	1406	6.80	20	
2-Chlorophenol	1205	36.3	1813	0	66.5	36.8	103	1369	12.7	20	
4-Chloro-3-methylphenol	1306	36.3	1813	0	72.1	49.5	119	1410	7.66	20	
4-Nitrophenol	1057	181	1813	0	58.3	45	111	1113	5.11	20	
Acenaphthene	1259	36.3	1813	0	69.4	45.1	102	1339	6.20	20	
N-Nitrosodi-n-propylamine	1129	36.3	1813	0	62.3	45.6	94.1	1324	15.9	20	
Pentachlorophenol	1686	54.4	1813	719.7	53.3	36.6	112	1770	4.85	20	
Phenol	1153	36.3	1813	0	63.6	37.7	107	1327	14.0	20	
Pyrene	1254	36.3	1813	0	69.2	42.4	131	1347	7.08	20	

Sample ID: **CCV-21330**	SampType: **CCV**	TestCode: **8270POR_S**	Units: **µg/Kg**	Prep Date:	Run ID: **5973G_080627A**
Client ID: **ZZZZZ**	Batch ID: **21330**	TestNo: **SW8270D**		Analysis Date: **6/27/2008**	SeqNo: **545624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	2121	33.3	2000	0	106	80	120	0	0		
2,4,6-Trichlorophenol	2331	33.3	2000	0	117	80	120	0	0		
2,4-Dichlorophenol	2192	33.3	2000	0	110	80	120	0	0		
2-Chlorophenol	2108	33.3	2000	0	105	80	120	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0806103
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270POR_S

Sample ID: **CCV-21330** SampType: **CCV** TestCode: **8270POR_S** Units: **µg/Kg** Prep Date: Run ID: **5973G_080627A**
Client ID: **ZZZZZ** Batch ID: **21330** TestNo: **SW8270D** Analysis Date: **6/27/2008** SeqNo: **545624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Nitrophenol	2033	167	2000	0	102	80	120	0	0		
4-Chloro-3-methylphenol	2034	33.3	2000	0	102	80	120	0	0		
Acenaphthene	1888	33.3	2000	0	94.4	80	120	0	0		
Benzo(a)pyrene	1993	33.3	2000	0	99.7	80	120	0	0		
Di-n-octyl phthalate	2036	33.3	2000	0	102	80	120	0	0		
Fluoranthene	1658	33.3	2000	0	82.9	80	120	0	0		
Hexachlorobutadiene	2061	33.3	2000	0	103	80	120	0	0		
N-Nitrosodiphenylamine	1788	33.3	2000	0	89.4	80	120	0	0		
Pentachlorophenol	1954	50.0	2000	0	97.7	80	120	0	0		
Phenol	2113	33.3	2000	0	106	80	120	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0806103
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID: **MB-21331**	SampType: **MBLK**	TestCode: **NWTPHDX_S**	Units: **mg/Kg**	Prep Date: **6/24/2008**	Run ID: **GC-M_080624A**
Client ID: **ZZZZZ**	Batch ID: **21331**	TestNo: **NWTPH-Dx**		Analysis Date: **6/24/2008**	SeqNo: **545033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	15.0									
Lube Oil	ND	50.0									
Surr: o-Terphenyl	28.2	0	33.33	0	84.6	50	150	0	0		

Sample ID: **LCS-21331**	SampType: **LCS**	TestCode: **NWTPHDX_S**	Units: **mg/Kg**	Prep Date: **6/24/2008**	Run ID: **GC-M_080624A**
Client ID: **ZZZZZ**	Batch ID: **21331**	TestNo: **NWTPH-Dx**		Analysis Date: **6/24/2008**	SeqNo: **545034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	172.6	15.0	166.6	0	104	76.3	125	0	0		
Lube Oil	169.8	50.0	166.6	0	102	69.9	127	0	0		

Sample ID: **0806103-04ADUP**	SampType: **DUP**	TestCode: **NWTPHDX_S**	Units: **mg/Kg-dry**	Prep Date: **6/24/2008**	Run ID: **GC-M_080624A**
Client ID: **MW58D-S-13.5**	Batch ID: **21331**	TestNo: **NWTPH-Dx**		Analysis Date: **6/24/2008**	SeqNo: **545037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	81.53	22.4	0	0	0	0	0	74.94	8.41	20	A1
Lube Oil	122.2	74.5	0	0	0	0	0	96.77	23.2	20	R, MI, A2

Sample ID: **CCV**	SampType: **CCV**	TestCode: **NWTPHDX_S**	Units: **mg/Kg**	Prep Date:	Run ID: **GC-M_080624A**
Client ID: **ZZZZZ**	Batch ID: **21331**	TestNo: **NWTPH-Dx**		Analysis Date: **6/24/2008**	SeqNo: **545032**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	973.6	15.0	999.9	0	97.4	85	115	0	0		
Lube Oil	514.4	50.0	500	0	103	85	115	0	0		

Sample ID: **CCV**	SampType: **CCV**	TestCode: **NWTPHDX_S**	Units: **mg/Kg**	Prep Date:	Run ID: **GC-M_080624A**
Client ID: **ZZZZZ**	Batch ID: **21331**	TestNo: **NWTPH-Dx**		Analysis Date: **6/24/2008**	SeqNo: **545039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	1338	15.0	1333	0	100	85	115	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
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R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0806103
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID: **CCV**	SampType: **CCV**	TestCode: **NWTPHDX_S**	Units: **mg/Kg**	Prep Date:	Run ID: **GC-M_080624A**
Client ID: **ZZZZZ**	Batch ID: **21331**	TestNo: **NWTPH-Dx**		Analysis Date: **6/24/2008**	SeqNo: **545039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Lube Oil	694.6	50.0	666.6	0	104	85	115	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

KEY TO FLAGS

A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.

A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.

A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.

A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.

B The blank exhibited a positive result greater than the reporting limit for this compound.

CN See Case Narrative.

D Result is based from a dilution.

E Result exceeds the calibration range for this compound. The result should be considered as estimate.

F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.

H Sample was analyzed outside recommended hold time.

HT At clients request, sample was analyzed outside recommended hold time.

J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.

K Diesel result is biased high due to amount of Oil contained in the sample.

L Diesel result is biased high due to amount of Gasoline contained in the sample.

M Oil result is biased high due to amount of Diesel contained in the sample.

N Gasoline result is biased high due to amount of Diesel contained in the sample.

MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.

MI Result is outside control limits due to matrix interference.

MSA Value determined by Method of Standard Addition.

O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.

P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.

Q Detection levels elevated due to sample matrix.

R RPD control limits were exceeded.

RF Duplicate failed due to result being at or near the method-reporting limit.

RP Matrix spike values exceed established QC limits, post digestion spike is in control.

S Recovery is outside control limits.

SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.

* The result for this parameter was greater that the maximum contaminant level of the TCLP regulatory limit.

CHAIN OF CUSTODY RECORD

Specialty Analytical
11711 SE Capps Road
Clackamas, OR 97015
Phone: 503-607-1331
Fax: 503-607-1336

Contact Person/Project Manager: Alan Hughes
Company: Maul Foster & Alongi
Address: 7223 NE Hazel Dell Ave
Vancouver, WA
Phone: _____ Fax: _____
Project No. 9003.01.36 Project Name: Port
Project Site Location OR: _____ WA: X Other: _____
Invoice To: MFA P.O. No.: _____

Collected By:
Signature: JR
Printed: Justin Pounds

Signature: _____
Printed: _____

Turn Around Time
☒ Normal 5-7 Business Days
☐ Rush _____
Specify
Rush Analyses Must Be Scheduled With The Lab In Advance

For Laboratory Use
Lab Job No. 0806103
Shipped Via: Specialty
Air Bill No. _____
Temperature On Receipt _____ °C
Specialty Analytical Containers? Y / N
Specialty Analytical Trip Blanks? Y / N

Date	Time	Sample I.D.	Matrix	No. of Containers	Analyses: NWTPH-Dx	SVOC - Port list	VOC - low level SIM	Metals, Arsenic, Zinc Chromium, Copper	Comments	Lab I.D.
6/18/08	1501	MW58D-S-0.0	S	2					please archive	
6/18/08	1525	MW58D-S-5.0	S	2					samples for	
6/18/08	1529	MW58D-S-10.0	S	2	X	X	X	X	~~add~~ further analysis	
~~6/18/08~~	1545	MW58D-S-13.5	S	2	X	X	X	X		
6/20/08	1400	Box-comp-1	S	2	X	X		X		

Relinquished By:	Date	Time	Received By:	Relinquished By:	Date	Time
JR	6/23/08	1320	Nikki Sutton	~~Company:~~		
Company: MFA			Company: Specialty			

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.
Samples held beyond 60 days subject to storage fee(s)

Received For Lab By: Nikki Sutton Date: 6/23/08 Time: 1516

Copies: White-Original Yellow-Project File Pink-Customer Copy

Specialty Analytical

11711 SE Capps Road
Clackamas, OR 97015
(503) 607-1331
Fax (503) 607-1336

July 30, 2008

Alan Hughes
Maul, Foster & Alongi
7223 NE Hazel Dell Avenue
Suite B
Vancouver, WA 98665

TEL: (360) 694-2691
FAX: (360) 906-1958

RE: Port of Ridgefield / 9003.01.36

Dear Alan Hughes:

Order No.: 0807091

Specialty Analytical received 1 sample on 7/18/2008 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

Specialty Analytical

Date: *30-Jul-08*

CLIENT:	Maul, Foster & Alongi	**Client Sample ID:**	DB-2
Lab Order:	0807091	**Collection Date:**	7/16/2008 1:05:00 PM
Project:	Port of Ridgefield / 9003.01.36		
Lab ID:	0807091-01	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX		**NWTPH-DX**				Analyst: **jrp**
Diesel	24.5	15.5		mg/Kg-dry	1	7/21/2008
Lube Oil	ND	51.6		mg/Kg-dry	1	7/21/2008
Surr: o-Terphenyl	65.6	50-150		%REC	1	7/21/2008
TOTAL METALS BY ICP		**E6010**				Analyst: **zau**
Chromium	19.8	0.497		mg/Kg-dry	1	7/21/2008 1:55:17 PM
Copper	7.37	0.993		mg/Kg-dry	1	7/21/2008 1:55:17 PM
Zinc	223	0.993		mg/Kg-dry	1	7/21/2008 1:55:17 PM
TOTAL METALS BY ICP/MS		**SW6020**				Analyst: **zau**
Arsenic	3100	99.3		µg/Kg-dry	1	7/21/2008 5:10:00 PM
SEMIVOLATILE ORGANICS BY GC/MS		**SW8270D**				Analyst: **bda**
1-Methylnaphthalene	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
2,3,4,6-Tetrachlorophenol	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
2,3,4-Trichlorophenol	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
2,3,5,6-Tetrachlorophenol	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
2,3,5-Trichlorophenol	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
2,3,6-Trichlorophenol	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
2,4,5-Trichlorophenol	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
2,4,6-Trichlorophenol	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
2-Methylnaphthalene	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
3,4,5-Trichlorophenol	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Acenaphthene	51.6	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Acenaphthylene	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Anthracene	49.2	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Benz(a)anthracene	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Benzo(a)pyrene	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Benzo(b)fluoranthene	35.1	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Benzo(g,h,i)perylene	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Benzo(k)fluoranthene	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Bis(2-ethylhexyl)phthalate	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Carbazole	43.4	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Chrysene	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Dibenz(a,h)anthracene	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Dibenzofuran	48.2	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Fluoranthene	181	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Fluorene	67.1	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Indeno(1,2,3-cd)pyrene	ND	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Naphthalene	42.0	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Pentachlorophenol	365	51.6		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Phenanthrene	292	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM

Specialty Analytical

Date: *30-Jul-08*

CLIENT:	Maul, Foster & Alongi	**Client Sample ID:**	DB-2
Lab Order:	0807091	**Collection Date:**	7/16/2008 1:05:00 PM
Project:	Port of Ridgefield / 9003.01.36		
Lab ID:	0807091-01	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS BY GC/MS		**SW8270D**				Analyst: **bda**
Pyrene	126	34.4		µg/Kg-dry	1	7/29/2008 2:50:00 PM
Surr: 2,4,6-Tribromophenol	79.8	57.8-119		%REC	1	7/29/2008 2:50:00 PM
Surr: 2-Fluorobiphenyl	86.3	52.6-93.2		%REC	1	7/29/2008 2:50:00 PM
Surr: 2-Fluorophenol	79.0	40.7-111		%REC	1	7/29/2008 2:50:00 PM
Surr: 4-Terphenyl-d14	77.6	49.8-118		%REC	1	7/29/2008 2:50:00 PM
Surr: Nitrobenzene-d5	69.5	44.8-103		%REC	1	7/29/2008 2:50:00 PM
Surr: Phenol-d6	95.2	47.5-117		%REC	1	7/29/2008 2:50:00 PM

CLIENT: Maul, Foster & Alongi
Work Order: 0807091
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **MBLK-21441**	SampType: **MBLK**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **7/21/2008**	Run ID: **TJA IRIS_080721A**
Client ID: **ZZZZZ**	Batch ID: **21441**	TestNo: **E6010**		Analysis Date: **7/21/2008**	SeqNo: **548124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	0.500									
Copper	ND	1.00									
Zinc	0.23	1.00									J

Sample ID: **LCS-21441**	SampType: **LCS**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date: **7/21/2008**	Run ID: **TJA IRIS_080721A**
Client ID: **ZZZZZ**	Batch ID: **21441**	TestNo: **E6010**		Analysis Date: **7/21/2008**	SeqNo: **548125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.51	0.500	25	0	106	84	113	0	0		
Copper	50.52	1.00	50	0	101	91.3	111	0	0		
Zinc	51.41	1.00	50	0	103	86.8	112	0	0		

Sample ID: **0807091-01AMS**	SampType: **MS**	TestCode: **6010_S**	Units: **mg/Kg-dry**	Prep Date: **7/21/2008**	Run ID: **TJA IRIS_080721A**
Client ID: **DB-2**	Batch ID: **21441**	TestNo: **E6010**		Analysis Date: **7/21/2008**	SeqNo: **548128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	52.27	0.487	24.36	19.76	133	75	121	0	0		S
Copper	58.64	0.974	48.71	7.368	105	75.1	126	0	0		
Zinc	369.5	0.974	48.71	222.7	301	86.2	113	0	0		S,MC

Sample ID: **0807091-01AMSD**	SampType: **MSD**	TestCode: **6010_S**	Units: **mg/Kg-dry**	Prep Date: **7/21/2008**	Run ID: **TJA IRIS_080721A**
Client ID: **DB-2**	Batch ID: **21441**	TestNo: **E6010**		Analysis Date: **7/21/2008**	SeqNo: **548129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	54.24	0.497	24.83	19.76	139	75	121	52.27	3.70	20	S
Copper	60.3	0.993	49.65	7.368	107	75.1	126	58.64	2.78	20	
Zinc	481	0.993	49.65	222.7	520	86.2	113	369.5	26.2	20	S,R,MC

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0807091
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: **0807091-01ADUP**	SampType: **DUP**	TestCode: **6010_S**	Units: **mg/Kg-dry**	Prep Date: **7/21/2008**	Run ID: **TJA IRIS_080721A**
Client ID: **DB-2**	Batch ID: **21441**	TestNo: **E6010**		Analysis Date: **7/21/2008**	SeqNo: **548127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	22.36	0.497	0	0	0	0	0	19.76	12.4	20	
Copper	7.765	0.993	0	0	0	0	0	7.368	5.25	20	
Zinc	305.2	0.993	0	0	0	0	0	222.7	31.2	20	R

Sample ID: **CCV**	SampType: **CCV**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date:	Run ID: **TJA IRIS_080721A**
Client ID: **ZZZZZ**	Batch ID: **21441**	TestNo: **E6010**		Analysis Date: **7/21/2008**	SeqNo: **548134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	26.3	0.500	25	0	105	90	110	0	0		
Copper	49.74	1.00	50	0	99.5	90	110	0	0		
Zinc	50.95	1.00	50	0	102	90	110	0	0		

Sample ID: **ICV**	SampType: **ICV**	TestCode: **6010_S**	Units: **mg/Kg**	Prep Date:	Run ID: **TJA IRIS_080721A**
Client ID: **ZZZZZ**	Batch ID: **21441**	TestNo: **E6010**		Analysis Date: **7/21/2008**	SeqNo: **548123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	25.78	0.500	25	0	103	90	110	0	0		
Copper	49.44	1.00	50	0	98.9	90	110	0	0		
Zinc	50.5	1.00	50	0	101	90	110	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0807091
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_S

Sample ID: **MBLK-21442**	SampType: **MBLK**	TestCode: **6020_S**	Units: **µg/Kg**	Prep Date: **7/21/2008**	Run ID: **ICPMS_080721A**
Client ID: **ZZZZZ**	Batch ID: **21442**	TestNo: **SW6020**		Analysis Date: **7/21/2008**	SeqNo: **548037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.01	100									J

Sample ID: **LCS-21442**	SampType: **LCS**	TestCode: **6020_S**	Units: **µg/Kg**	Prep Date: **7/21/2008**	Run ID: **ICPMS_080721A**
Client ID: **ZZZZZ**	Batch ID: **21442**	TestNo: **SW6020**		Analysis Date: **7/21/2008**	SeqNo: **548038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4379	100	5000	0	87.6	75	115	0	0		

Sample ID: **0807092-06AMS**	SampType: **MS**	TestCode: **6020_S**	Units: **µg/Kg-dry**	Prep Date: **7/21/2008**	Run ID: **ICPMS_080721A**
Client ID: **ZZZZZ**	Batch ID: **21442**	TestNo: **SW6020**		Analysis Date: **7/21/2008**	SeqNo: **548041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8180	101	5032	3723	88.6	70	130	0	0		

Sample ID: **0807092-06AMSD**	SampType: **MSD**	TestCode: **6020_S**	Units: **µg/Kg-dry**	Prep Date: **7/21/2008**	Run ID: **ICPMS_080721A**
Client ID: **ZZZZZ**	Batch ID: **21442**	TestNo: **SW6020**		Analysis Date: **7/21/2008**	SeqNo: **548042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	8136	101	5032	3723	87.7	70	130	8180	0.531	20	

Sample ID: **0807092-06ADUP**	SampType: **DUP**	TestCode: **6020_S**	Units: **µg/Kg-dry**	Prep Date: **7/21/2008**	Run ID: **ICPMS_080721A**
Client ID: **ZZZZZ**	Batch ID: **21442**	TestNo: **SW6020**		Analysis Date: **7/21/2008**	SeqNo: **548040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	3697	102	0	0	0	0	0	3723	0.709	20	

Sample ID: **CCV**	SampType: **CCV**	TestCode: **6020_S**	Units: **µg/Kg**	Prep Date:	Run ID: **ICPMS_080721A**
Client ID: **ZZZZZ**	Batch ID: **21442**	TestNo: **SW6020**		Analysis Date: **7/21/2008**	SeqNo: **548036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:
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R - RPD outside accepted recovery limits
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CLIENT: Maul, Foster & Alongi
Work Order: 0807091
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_S

Sample ID: **CCV**	SampType: **CCV**	TestCode: **6020_S**	Units: **µg/Kg**	Prep Date:	Run ID: **ICPMS_080721A**
Client ID: **ZZZZZ**	Batch ID: **21442**	TestNo: **SW6020**		Analysis Date: **7/21/2008**	SeqNo: **548036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4932	100	5000	0	98.6	90	110	0	0		

Sample ID: **CCV**	SampType: **CCV**	TestCode: **6020_S**	Units: **µg/Kg**	Prep Date:	Run ID: **ICPMS_080721A**
Client ID: **ZZZZZ**	Batch ID: **21442**	TestNo: **SW6020**		Analysis Date: **7/21/2008**	SeqNo: **548043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4941	100	5000	0	98.8	90	110	0	0		

Sample ID: **CCV**	SampType: **CCV**	TestCode: **6020_S**	Units: **µg/Kg**	Prep Date:	Run ID: **ICPMS_080721A**
Client ID: **ZZZZZ**	Batch ID: **21442**	TestNo: **SW6020**		Analysis Date: **7/21/2008**	SeqNo: **548051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4798	100	5000	0	96	90	110	0	0		

Sample ID: **ICV**	SampType: **ICV**	TestCode: **6020_S**	Units: **µg/Kg**	Prep Date:	Run ID: **ICPMS_080721A**
Client ID: **ZZZZZ**	Batch ID: **21442**	TestNo: **SW6020**		Analysis Date: **7/21/2008**	SeqNo: **548035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4952	100	5000	0	99	90	110	0	0		

Qualifiers:
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B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0807091
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270POR_S

Sample ID: **MB-21484** SampType: **MBLK** TestCode: **8270POR_S** Units: **µg/Kg** Prep Date: **7/28/2008** Run ID: **5973G_080729A**
Client ID: **ZZZZZ** Batch ID: **21484** TestNo: **SW8270D** Analysis Date: **7/29/2008** SeqNo: **548800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	ND	33.3									
1,2-Dichlorobenzene	ND	33.3									
1,3-Dichlorobenzene	ND	33.3									
1,4-Dichlorobenzene	ND	33.3									
1-Methylnaphthalene	6	33.3									J
2,3,4,6-Tetrachlorophenol	ND	33.3									
2,3,4-Trichlorophenol	ND	33.3									
2,3,5,6-Tetrachlorophenol	ND	33.3									
2,3,5-Trichlorophenol	ND	33.3									
2,3,6-Trichlorophenol	ND	33.3									
2,4,5-Trichlorophenol	ND	33.3									
2,4,6-Trichlorophenol	ND	33.3									
2,4-Dichlorophenol	ND	33.3									
2,4-Dimethylphenol	ND	33.3									
2,4-Dinitrophenol	ND	333									
2,4-Dinitrotoluene	ND	33.3									
2-Chloronaphthalene	ND	33.3									
2-Chlorophenol	ND	33.3									
2-Methylnaphthalene	5.667	33.3									J
2-Methylphenol	ND	33.3									
2-Nitroaniline	ND	33.3									
2-Nitrophenol	ND	167									
3,3-Dichlorobenzidine	ND	167									
3,4,5-Trichlorophenol	ND	33.3									
3-&4-Methylphenol	ND	33.3									
3-Nitroaniline	ND	33.3									
4,6-Dinitro-2-methylphenol	ND	167									
4-Bromophenyl phenyl ether	ND	33.3									
4-Chloro-3-methylphenol	ND	33.3									
4-Chloroaniline	ND	33.3									
4-Chlorophenyl phenyl ether	ND	33.3									

Qualifiers:
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CLIENT: Maul, Foster & Alongi
Work Order: 0807091
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270POR_S

Sample ID: **MB-21484** SampType: **MBLK** TestCode: **8270POR_S** Units: **µg/Kg** Prep Date: **7/28/2008** Run ID: **5973G_080729A**
Client ID: **ZZZZZ** Batch ID: **21484** TestNo: **SW8270D** Analysis Date: **7/29/2008** SeqNo: **548800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
4-Nitroaniline	ND	33.3									
4-Nitrophenol	ND	167									
Acenaphthene	15	33.3									J
Acenaphthylene	ND	33.3									
Anthracene	ND	33.3									
Benz(a)anthracene	ND	33.3									
Benzo(a)pyrene	ND	33.3									
Benzo(b)fluoranthene	ND	33.3									
Benzo(g,h,i)perylene	18.67	33.3									J
Benzo(k)fluoranthene	7.667	33.3									J
Benzoic Acid	ND	667									
Benzyl Alcohol	ND	33.3									
Bis(2-chloroethoxy)methane	ND	33.3									
Bis(2-chloroethyl)ether	ND	33.3									
Bis(2-chloroisopropyl)ether	ND	33.3									
Bis(2-ethylhexyl)phthalate	ND	33.3									
Butyl benzyl phthalate	ND	33.3									
Carbazole	ND	33.3									
Chrysene	ND	33.3									
Di-n-butyl phthalate	ND	33.3									
Di-n-octyl phthalate	ND	33.3									
Dibenz(a,h)anthracene	15.33	33.3									J
Dibenzofuran	ND	33.3									
Diethyl phthalate	ND	33.3									
Dimethyl phthalate	ND	33.3									
Fluoranthene	ND	33.3									
Fluorene	ND	33.3									
Hexachlorobenzene	ND	33.3									
Hexachlorobutadiene	ND	33.3									
Hexachlorocyclopentadiene	ND	33.3									
Hexachloroethane	ND	33.3									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0807091
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270POR_S

Sample ID: **MB-21484** SampType: **MBLK** TestCode: **8270POR_S** Units: **µg/Kg** Prep Date: **7/28/2008** Run ID: **5973G_080729A**
Client ID: **ZZZZZ** Batch ID: **21484** TestNo: **SW8270D** Analysis Date: **7/29/2008** SeqNo: **548800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Indeno(1,2,3-cd)pyrene	ND	33.3									
Isophorone	ND	33.3									
N-Nitrosodi-n-propylamine	ND	33.3									
N-Nitrosodiphenylamine	7.333	33.3									J
Naphthalene	9.667	33.3									J
Nitrobenzene	ND	33.3									
Pentachlorophenol	ND	50.0									
Phenanthrene	ND	33.3									
Phenol	ND	33.3									
Pyrene	ND	33.3									
Surr: 2,4,6-Tribromophenol	2002	0	3333	0	60.1	57.8	119	0	0		
Surr: 2-Fluorobiphenyl	2672	0	3333	0	80.2	52.6	93.2	0	0		
Surr: 2-Fluorophenol	2342	0	3333	0	70.3	40.7	111	0	0		
Surr: 4-Terphenyl-d14	2835	0	3333	0	85	49.8	118	0	0		
Surr: Nitrobenzene-d5	2229	0	3333	0	66.9	44.8	103	0	0		
Surr: Phenol-d6	2533	0	3333	0	76	47.5	117	0	0		

Sample ID: **LCS-21484** SampType: **LCS** TestCode: **8270POR_S** Units: **µg/Kg** Prep Date: **7/28/2008** Run ID: **5973G_080729A**
Client ID: **ZZZZZ** Batch ID: **21484** TestNo: **SW8270D** Analysis Date: **7/29/2008** SeqNo: **548799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	1448	33.3	1667	0	86.9	30.9	106	0	0		
1,4-Dichlorobenzene	1181	33.3	1667	0	70.8	31.4	98.2	0	0		
2,4-Dinitrotoluene	1697	33.3	1667	0	102	59.7	111	0	0		
2-Chlorophenol	1559	33.3	1667	0	93.5	46.2	105	0	0		
4-Chloro-3-methylphenol	1704	33.3	1667	0	102	47.4	114	0	0		
4-Nitrophenol	1749	167	1667	0	105	45.3	114	0	0		
Acenaphthene	1657	33.3	1667	15	98.5	48.2	105	0	0		
N-Nitrosodi-n-propylamine	1668	33.3	1667	0	100	42.4	101	0	0		
Pentachlorophenol	1177	50.0	1667	0	70.6	46.8	120	0	0		
Phenol	1797	33.3	1667	0	108	51.1	103	0	0		S,O

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0807091
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270POR_S

Sample ID: **LCS-21484**	SampType: **LCS**	TestCode: **8270POR_S**	Units: **µg/Kg**	Prep Date: **7/28/2008**	Run ID: **5973G_080729A**
Client ID: **ZZZZZ**	Batch ID: **21484**	TestNo: **SW8270D**		Analysis Date: **7/29/2008**	SeqNo: **548799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Pyrene	1754	33.3	1667	0	105	56.7	130	0	0		

Sample ID: **A0807122-01AMS**	SampType: **MS**	TestCode: **8270POR_S**	Units: **µg/Kg**	Prep Date: **7/28/2008**	Run ID: **5973G_080729A**
Client ID: **ZZZZZ**	Batch ID: **21484**	TestNo: **SW8270D**		Analysis Date: **7/29/2008**	SeqNo: **548803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	918.3	33.3	1667	0	55.1	31.1	92.7	0	0		
1,4-Dichlorobenzene	772.3	33.3	1667	0	46.3	16.5	85.6	0	0		
2,4-Dinitrotoluene	1234	33.3	1667	0	74	43.4	118	0	0		
2-Chlorophenol	1009	33.3	1667	0	60.5	36.8	103	0	0		
4-Chloro-3-methylphenol	1267	33.3	1667	0	76	49.5	119	0	0		
4-Nitrophenol	1193	167	1667	0	71.6	45	111	0	0		
Acenaphthene	1248	33.3	1667	0	74.9	45.1	102	0	0		
N-Nitrosodi-n-propylamine	1098	33.3	1667	0	65.9	45.6	94.1	0	0		
Pentachlorophenol	727.3	50.0	1667	0	43.6	36.6	112	0	0		
Phenol	1341	33.3	1667	0	80.5	37.7	107	0	0		
Pyrene	1449	33.3	1667	46.33	84.2	42.4	131	0	0		

Sample ID: **A0807122-01AMSD**	SampType: **MSD**	TestCode: **8270POR_S**	Units: **µg/Kg**	Prep Date: **7/28/2008**	Run ID: **5973G_080729A**
Client ID: **ZZZZZ**	Batch ID: **21484**	TestNo: **SW8270D**		Analysis Date: **7/29/2008**	SeqNo: **548804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	1209	33.3	1667	0	72.6	31.1	92.7	918.3	27.4	20	R
1,4-Dichlorobenzene	1018	33.3	1667	0	61.1	16.5	85.6	772.3	27.4	20	R
2,4-Dinitrotoluene	1499	33.3	1667	0	89.9	43.4	118	1234	19.4	20	
2-Chlorophenol	1271	33.3	1667	0	76.3	36.8	103	1009	23.0	20	R
4-Chloro-3-methylphenol	1523	33.3	1667	0	91.4	49.5	119	1267	18.3	20	
4-Nitrophenol	1442	167	1667	0	86.5	45	111	1193	18.9	20	
Acenaphthene	1510	33.3	1667	0	90.6	45.1	102	1248	19.0	20	
N-Nitrosodi-n-propylamine	1369	33.3	1667	0	82.2	45.6	94.1	1098	22.0	20	R
Pentachlorophenol	823.3	50.0	1667	0	49.4	36.6	112	727.3	12.4	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0807091
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270POR_S

Sample ID: **A0807122-01AMSD**	SampType: **MSD**	TestCode: **8270POR_S**	Units: **µg/Kg**	Prep Date: **7/28/2008**	Run ID: **5973G_080729A**
Client ID: **ZZZZZ**	Batch ID: **21484**	TestNo: **SW8270D**		Analysis Date: **7/29/2008**	SeqNo: **548804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	2072	33.3	1667	0	124	37.7	107	1341	42.8	20	S,R
Pyrene	1715	33.3	1667	46.33	100	42.4	131	1449	16.8	20	

Sample ID: **CCV-21484**	SampType: **CCV**	TestCode: **8270POR_S**	Units: **µg/Kg**	Prep Date:	Run ID: **5973G_080729A**
Client ID: **ZZZZZ**	Batch ID: **21484**	TestNo: **SW8270D**		Analysis Date: **7/29/2008**	SeqNo: **548798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	1900	33.3	2000	0	95	80	120	0	0		
2,4,6-Trichlorophenol	1974	33.3	2000	0	98.7	80	120	0	0		
2,4-Dichlorophenol	2031	33.3	2000	0	102	80	120	0	0		
2-Chlorophenol	2010	33.3	2000	0	100	80	120	0	0		
2-Nitrophenol	1985	167	2000	0	99.2	80	120	0	0		
4-Chloro-3-methylphenol	2060	33.3	2000	0	103	80	120	0	0		
Acenaphthene	1985	33.3	2000	0	99.2	80	120	0	0		
Benzo(a)pyrene	2087	33.3	2000	0	104	80	120	0	0		
Di-n-octyl phthalate	1970	33.3	2000	0	98.5	80	120	0	0		
Fluoranthene	1868	33.3	2000	0	93.4	80	120	0	0		
Hexachlorobutadiene	2078	33.3	2000	0	104	80	120	0	0		
N-Nitrosodiphenylamine	1778	33.3	2000	0	88.9	80	120	0	0		
Pentachlorophenol	1805	50.0	2000	0	90.2	80	120	0	0		
Phenol	2267	33.3	2000	0	113	80	120	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0807091
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID: **MB-21448**	SampType: **MBLK**	TestCode: **NWTPHDX_S**	Units: **mg/Kg**	Prep Date: **7/21/2008**	Run ID: **GC-M_080721A**
Client ID: **ZZZZZ**	Batch ID: **21448**	TestNo: **NWTPH-Dx**		Analysis Date: **7/21/2008**	SeqNo: **548159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	15.0									
Lube Oil	ND	50.0									
Surr: o-Terphenyl	28.28	0	33.33	0	84.9	50	150	0	0		

Sample ID: **LCS-21448**	SampType: **LCS**	TestCode: **NWTPHDX_S**	Units: **mg/Kg**	Prep Date: **7/21/2008**	Run ID: **GC-M_080721A**
Client ID: **ZZZZZ**	Batch ID: **21448**	TestNo: **NWTPH-Dx**		Analysis Date: **7/21/2008**	SeqNo: **548160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	178.6	15.0	167.3	0	107	76.3	125	0	0		
Lube Oil	178.6	50.0	168.3	0	106	69.9	127	0	0		

Sample ID: **0807091-01ADUP**	SampType: **DUP**	TestCode: **NWTPHDX_S**	Units: **mg/Kg-dry**	Prep Date: **7/21/2008**	Run ID: **GC-M_080721A**
Client ID: **DB-2**	Batch ID: **21448**	TestNo: **NWTPH-Dx**		Analysis Date: **7/21/2008**	SeqNo: **548163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	23.7	15.5	0	0	0	0	0	24.55	3.50	20	
Lube Oil	26.45	51.6	0	0	0	0	0	44.12	0	20	J

Sample ID: **CCV**	SampType: **CCV**	TestCode: **NWTPHDX_S**	Units: **mg/Kg**	Prep Date:	Run ID: **GC-M_080721A**
Client ID: **ZZZZZ**	Batch ID: **21448**	TestNo: **NWTPH-Dx**		Analysis Date: **7/21/2008**	SeqNo: **548161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	999.6	15.0	999.9	0	100	85	115	0	0		
Lube Oil	497.6	50.0	500	0	99.5	85	115	0	0		

Sample ID: **CCV**	SampType: **CCV**	TestCode: **NWTPHDX_S**	Units: **mg/Kg**	Prep Date:	Run ID: **GC-M_080721A**
Client ID: **ZZZZZ**	Batch ID: **21448**	TestNo: **NWTPH-Dx**		Analysis Date: **7/21/2008**	SeqNo: **548164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	1329	15.0	1333	0	99.7	85	115	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

CLIENT: Maul, Foster & Alongi
Work Order: 0807091
Project: Port of Ridgefield / 9003.01.36

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID: **CCV** SampType: **CCV** TestCode: **NWTPHDX_S** Units: **mg/Kg** Prep Date: Run ID: **GC-M_080721A**
Client ID: **ZZZZZ** Batch ID: **21448** TestNo: **NWTPH-Dx** Analysis Date: **7/21/2008** SeqNo: **548164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Lube Oil	686.7	50.0	666.6	0	103	85	115	0	0		

Sample ID: **CCV** SampType: **CCV** TestCode: **NWTPHDX_S** Units: **mg/Kg** Prep Date: Run ID: **GC-M_080721A**
Client ID: **ZZZZZ** Batch ID: **21448** TestNo: **NWTPH-Dx** Analysis Date: **7/22/2008** SeqNo: **548288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	1002	15.0	999.9	0	100	85	115	0	0		
Lube Oil	488.9	50.0	500	0	97.8	85	115	0	0		

Sample ID: **CCV** SampType: **CCV** TestCode: **NWTPHDX_S** Units: **mg/Kg** Prep Date: Run ID: **GC-M_080721A**
Client ID: **ZZZZZ** Batch ID: **21448** TestNo: **NWTPH-Dx** Analysis Date: **7/22/2008** SeqNo: **548299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	1377	15.0	1333	0	103	85	115	0	0		
Lube Oil	665.7	50.0	666.6	0	99.9	85	115	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blanl

KEY TO FLAGS

A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards.

A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.

A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.

A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.

B The blank exhibited a positive result greater than the reporting limit for this compound.

CN See Case Narrative.

D Result is based from a dilution.

E Result exceeds the calibration range for this compound. The result should be considered as estimate.

F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.

H Sample was analyzed outside recommended hold time.

HT At clients request, sample was analyzed outside recommended hold time.

J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.

K Diesel result is biased high due to amount of Oil contained in the sample.

L Diesel result is biased high due to amount of Gasoline contained in the sample.

M Oil result is biased high due to amount of Diesel contained in the sample.

N Gasoline result is biased high due to amount of Diesel contained in the sample.

MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.

MI Result is outside control limits due to matrix interference.

MSA Value determined by Method of Standard Addition.

O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.

P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.

Q Detection levels elevated due to sample matrix.

R RPD control limits were exceeded.

RF Duplicate failed due to result being at or near the method-reporting limit.

RP Matrix spike values exceed established QC limits, post digestion spike is in control.

S Recovery is outside control limits.

SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.

* The result for this parameter was greater that the maximum contaminant level of the TCLP regulatory limit.

CHAIN OF CUSTODY RECORD

Specialty Analytical
11711 SE Capps Road
Clackamas, OR 97015
Phone: 503-607-1331
Fax: 503-607-1336

Contact Person/Project Manager: Alan Hughes
Company: Maul Foster & Alongi
Address: 7223 NE Hazel Dell Ave
Vancouver, WA
Phone: _____ Fax: _____
Project No. 9003.01.36 Project Name: Port of Ridgefield
Project Site Location OR: _____ WA: X Other: _____
Invoice To: Port of Ridgefield P.O. No. 9003.01.36

Collected By:
Signature: [signature]
Printed: Justin Paunds

Signature: _____
Printed: _____

Turn Around Time
☒ Normal 5-7 Business Days
☐ Rush _____
Specify
Rush Analyses Must Be Scheduled With The Lab In Advance

For Laboratory Use
Lab Job No. 0804091
Shipped Via: Specialty
Air Bill No. _____
Temperature On Receipt 4 °C
Specialty Analytical Containers? Y / N
Specialty Analytical Trip Blanks? Y / N

Date	Time	Sample I.D.	Matrix	No. of Containers	Analyses: Port list SVOC	Analyses: metals, copper, chromium, arsenic, zinc	Analyses: Dx	Comments	Lab I.D.
7/16/08	1305	DB-2	S	2	X	X	X		

Relinquished By	Date	Time	Received By	Relinquished By	Date	Time
[signature]	7/18/08	1230	Nikki Delton			
Company: MFA			Company:	Company:		

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.
Samples held beyond 60 days subject to storage fee(s)

Received For Lab By: Nikki Delton Date: 7/18/08 Time: 1525

Copies: White-Original Yellow-Project File Pink-Customer Copy

APPENDIX E

ANALYTICAL DATA – SOIL FROM CITY STOCKPILE

GeoEngineers

15055 SW Sequoia Pkwy, Suite 140, Portland, OR 97224, Telephone: (503) 624-9274, Fax: (503) 620-5940 www.geoengineers.com

MEMORANDUM

TO: Mr. Ken Alexander, Gray and Osborne, Inc.

FROM: Chris Breemer, L.G

DATE: September 16, 2008

FILE: 12383-001-01

SUBJECT: Summary of Soil Analytical Data – Ridgefield WWTP Soil Stockpile

INTRODUCTION

GeoEngineers, Inc. (GeoEngineers) prepared this memorandum to document soil sampling and chemical testing activities that GeoEngineers conducted on behalf of Gray and Osborne, Inc. at the City of Ridgefield Wastewater Treatment Plant (WWTP) in Ridgefield, Washington. The purpose of the sampling activities was to obtain chemical analytical data necessary for further characterizing the chemical characteristics of stockpiled soil at the WWTP. The City of Ridgefield intends to transfer the stockpiled soil to nearby property owned by the Port of Ridgefield. GeoEngineers conducted the sampling and testing activities at your request and in accordance with our proposal dated August 21, 2008.

SOIL SAMPLING

GeoEngineers collected two soil samples on September 5, 2008 from soil stockpiled at the northeast corner of the WWTP. Mr. John Duback, an employee of the WWTP identified the location of the stockpile. The soil samples were collected at depths of approximately 1 foot below ground surface (bgs) using decontaminated shovels. One sample was collected from the north portion of the stockpile (sample "Soil #1") and one sample was collected from the southern portion of the stockpile (sample "Soil #2"). The soil samples were placed in laboratory-supplied jars and stored in an iced cooler under chain-of-custody procedures.

CHEMICAL ANALYSES

GeoEngineers submitted the soil samples to Apex Laboratory in Tigard, Oregon for analysis of polycyclic aromatic hydrocarbons (PAHs) and pentachlorophenol (PCP) by U.S. Environmental Protection Agency (EPA) Method 8270C-SIM and arsenic, cadmium, copper, and zinc by EPA Method 6020. The laboratory report is included as Attachment A.

PAHs were not detected in either soil sample. PCP was detected in sample "Soil #2" at a concentration of 233 micrograms per kilogram (µg/kg). Arsenic was detected in both soil samples at concentrations ranging between 8.10 and 9.76 milligrams per kilogram (mg/kg). Copper was detected in both soil samples at concentrations ranging between 23.0 and 25.4 mg/kg. Zinc was detected in both soil samples at concentrations ranging between 61.8 and 87.3 mg/kg.

GeoEngineers reviewed the laboratory analytical report to evaluate the data quality. No laboratory data exceptions were reported that significantly affect the reliability of the data.

CONCLUSION

GeoEngineers appreciates the opportunity to be of service to Gray and Osborne, Inc. Please do not hesitate to contact us if you have any questions of comments regarding the information presented herein.

LIMITATIONS

GeoEngineers conducted our services for the exclusive use of Gray and Osborne, Inc. and their design team. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This limitation provides our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Monday, September 15, 2008

Chris Breemer
GeoEngineers
15055 SW Sequoia Pkwy, # 140
Portland, OR 97224

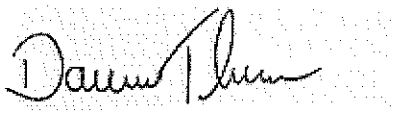
RE: Ridgefield WWTP / 12383-001-01

Enclosed are the results of analyses for work order A809062, which was received by the laboratory on 9/5/2008 at 2:00:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Darwin Thomas, Sales/Marketing

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

GeoEngineers	Project: **Ridgefield WWTP**	
15055 SW Sequoia Pkwy, # 140	Project Number: 12383-001-01	**Reported:**
Portland, OR 97224	Project Manager: Chris Breemer	09/15/08 15:52

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Soil #1	A809062-01	Soil	09/05/08 11:00	09/05/08 14:00
Soil #2	A809062-02	Soil	09/05/08 11:15	09/05/08 14:00

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Sales/Marketing

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

GeoEngineers	Project: **Ridgefield WWTP**	
15055 SW Sequoia Pkwy, # 140	Project Number: 12383-001-01	**Reported:**
Portland, OR 97224	Project Manager: Chris Breemer	09/15/08 15:52

ANALYTICAL SAMPLE RESULTS

PAH by EPA 8270C SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Soil #1 (A809062-01)			**Matrix: Soil**					**R-04**
Acenaphthene	ND	---	543	ug/kg dry	20	09/10/08 18:48	EPA 8270C (SIM)	
Acenaphthylene	ND	---	543	"	"	"	"	
Anthracene	ND	---	543	"	"	"	"	
Benz(a)anthracene	ND	---	543	"	"	"	"	
Benzo(a)pyrene	ND	---	543	"	"	"	"	
Benzo(b)fluoranthene	ND	---	543	"	"	"	"	
Benzo(k)fluoranthene	ND	---	543	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	543	"	"	"	"	
Chrysene	ND	---	543	"	"	"	"	
Dibenz(a,h)anthracene	ND	---	543	"	"	"	"	
Fluoranthene	ND	---	543	"	"	"	"	
Fluorene	ND	---	543	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	543	"	"	"	"	
Naphthalene	ND	---	543	"	"	"	"	
Phenanthrene	ND	---	543	"	"	"	"	
Pyrene	ND	---	543	"	"	"	"	
Pentachlorophenol (PCP)	ND	---	724	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 77 %*	*Limits: 35-120 %*	"	"	"	
2,4-Dibromophenol (Surr)			*71 %*	*Limits: 30-125 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*91 %*	*Limits: 45-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*100 %*	*Limits: 30-120 %*	"	"	"	

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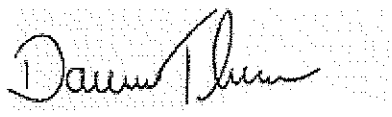

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

GeoEngineers	Project: **Ridgefield WWTP**	
15055 SW Sequoia Pkwy, # 140	Project Number: 12383-001-01	**Reported:**
Portland, OR 97224	Project Manager: Chris Breemer	09/15/08 15:52

ANALYTICAL SAMPLE RESULTS

PAH by EPA 8270C SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Soil #2 (A809062-02)			**Matrix: Soil**					
Acenaphthene	ND	---	142	ug/kg dry	5	09/10/08 19:15	EPA 8270C (SIM)	
Acenaphthylene	ND	---	142	"	"	"	"	
Anthracene	ND	---	142	"	"	"	"	
Benz(a)anthracene	ND	---	142	"	"	"	"	
Benzo(a)pyrene	ND	---	142	"	"	"	"	
Benzo(b)fluoranthene	ND	---	142	"	"	"	"	
Benzo(k)fluoranthene	ND	---	142	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	142	"	"	"	"	
Chrysene	ND	---	142	"	"	"	"	
Dibenz(a,h)anthracene	ND	---	142	"	"	"	"	
Fluoranthene	ND	---	142	"	"	"	"	
Fluorene	ND	---	142	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	142	"	"	"	"	
Naphthalene	ND	---	142	"	"	"	"	
Phenanthrene	ND	---	142	"	"	"	"	
Pyrene	ND	---	142	"	"	"	"	
Pentachlorophenol (PCP)	**233**	---	190	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery: 78 %*	*Limits: 35-120 %*		"	"	"	
2,4-Dibromophenol (Surr)		*63 %*	*Limits: 30-125 %*		"	"	"	
2-Fluorobiphenyl (Surr)		*84 %*	*Limits: 45-120 %*		"	"	"	
p-Terphenyl-d14 (Surr)		*92 %*	*Limits: 30-120 %*		"	"	"	

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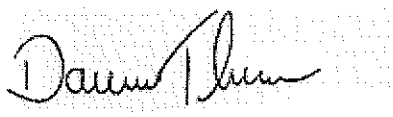

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GeoEngineers	Project: **Ridgefield WWTP**	
15055 SW Sequoia Pkwy, # 140	Project Number: 12383-001-01	**Reported:**
Portland, OR 97224	Project Manager: Chris Breemer	09/15/08 15:52

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Soil #1 (A809062-01)			**Matrix: Soil**					
Arsenic	**9.76**	---	1.11	mg/kg dry	10	09/10/08 22:18	EPA 6020	
Cadmium	ND	---	1.11	"	"	"	"	
Copper	**23.0**	---	4.43	"	"	"	"	
Zinc	**87.3**	---	4.43	"	"	"	"	
Soil #2 (A809062-02)			**Matrix: Soil**					
Arsenic	**8.10**	---	1.06	mg/kg dry	10	09/10/08 22:21	EPA 6020	
Cadmium	ND	---	1.06	"	"	"	"	
Copper	**25.4**	---	4.25	"	"	"	"	
Zinc	**61.8**	---	4.25	"	"	"	"	

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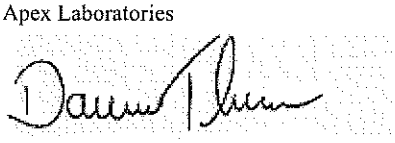

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GeoEngineers	Project: **Ridgefield WWTP**	
15055 SW Sequoia Pkwy, # 140	Project Number: 12383-001-01	**Reported:**
Portland, OR 97224	Project Manager: Chris Breemer	09/15/08 15:52

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight by D2216

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
Soil #1 (A809062-01)			**Matrix: Soil**					
% Solids	**92.5**	---	1.00	% by Weight	1	09/09/08 07:51	D2216	
Soil #2 (A809062-02)			**Matrix: Soil**					
% Solids	**93.6**	---	1.00	% by Weight	1	09/09/08 07:51	D2216	

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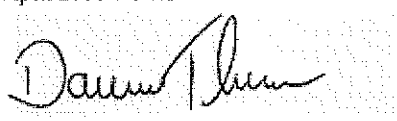

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503-718-0333 Fax

GeoEngineers	Project: **Ridgefield WWTP**	
15055 SW Sequoia Pkwy, # 140	Project Number: 12383-001-01	**Reported:**
Portland, OR 97224	Project Manager: Chris Breemer	09/15/08 15:52

QUALITY CONTROL (QC) SAMPLE RESULTS

PAH by EPA 8270C SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8090070 - EPA 3546							**Soil**					
Blank (8090070-BLK2)					**Analyzed: 09/10/08 17:49**							**Q-16**
EPA 8270C (SIM)												
Acenaphthene	ND	---	25.0	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	25.0	"	"	---	---	---	---	---	---	
Anthracene	ND	---	25.0	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	25.0	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	25.0	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	25.0	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	25.0	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	25.0	"	"	---	---	---	---	---	---	
Chrysene	ND	---	25.0	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	25.0	"	"	---	---	---	---	---	---	
Fluoranthene	ND	---	25.0	"	"	---	---	---	---	---	---	
Fluorene	ND	---	25.0	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	25.0	"	"	---	---	---	---	---	---	
Naphthalene	ND	---	25.0	"	"	---	---	---	---	---	---	
Phenanthrene	ND	---	25.0	"	"	---	---	---	---	---	---	
Pyrene	ND	---	25.0	"	"	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	---	33.3	"	"	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 96 %*		*Limits: 35-120 %*		*Dilution: 1x*					
2,4-Dibromophenol (Surr)			*101 %*		*30-125 %*		"					
2-Fluorobiphenyl (Surr)			*90 %*		*45-120 %*		"					
p-Terphenyl-d14 (Surr)			*95 %*		*30-120 %*		"					
LCS (8090070-BS2)					**Analyzed: 09/10/08 18:16**							**Q-16**
EPA 8270C (SIM)												
Acenaphthene	313	---	25.0	ug/kg wet	1	333	---	94	45-120%	---	---	
Acenaphthylene	335	---	25.0	"	"	"	---	100	"	---	---	
Anthracene	369	---	25.0	"	"	"	---	111	55-120%	---	---	
Benz(a)anthracene	323	---	25.0	"	"	"	---	97	50-120%	---	---	
Benzo(a)pyrene	364	---	25.0	"	"	"	---	109	"	---	---	
Benzo(b)fluoranthene	380	---	25.0	"	"	"	---	114	45-120%	---	---	
Benzo(k)fluoranthene	376	---	25.0	"	"	"	---	113	45-125%	---	---	
Benzo(g,h,i)perylene	364	---	25.0	"	"	"	---	109	40-125%	---	---	
Chrysene	343	---	25.0	"	"	"	---	103	55-120%	---	---	
Dibenz(a,h)anthracene	372	---	25.0	"	"	"	---	112	40-125%	---	---	

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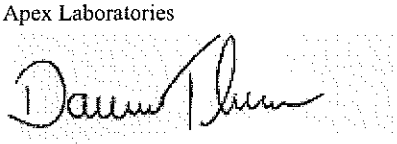

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

GeoEngineers	Project: **Ridgefield WWTP**	
15055 SW Sequoia Pkwy, # 140	Project Number: 12383-001-01	**Reported:**
Portland, OR 97224	Project Manager: Chris Breemer	09/15/08 15:52

QUALITY CONTROL (QC) SAMPLE RESULTS

PAH by EPA 8270C SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8090070 - EPA 3546							**Soil**					
LCS (8090070-BS2)						**Analyzed: 09/10/08 18:16**						**Q-16**
Fluoranthene	373	---	25.0	ug/kg wet	"	"	---	112	55-120%	---	---	
Fluorene	314	---	25.0	"	"	"	---	94	50-120%	---	---	
Indeno(1,2,3-cd)pyrene	381	---	25.0	"	"	"	---	114	40-120%	---	---	
Naphthalene	335	---	25.0	"	"	"	---	100	"	---	---	
Phenanthrene	340	---	25.0	"	"	"	---	102	50-120%	---	---	
Pyrene	357	---	25.0	"	"	"	---	107	45-125%	---	---	
Pentachlorophenol (PCP)	378	---	33.3	"	"	"	---	113	25-120%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 93 %*		*Limits: 35-120 %*		*Dilution: 1x*					
2,4-Dibromophenol (Surr)			*98 %*		*30-125 %*		*"*					
2-Fluorobiphenyl (Surr)			*87 %*		*45-120 %*		*"*					
p-Terphenyl-d14 (Surr)			*92 %*		*30-120 %*		*"*					
Matrix Spike (8090070-MS1)			**Source: A809062-02**			**Analyzed: 09/10/08 19:41**						
EPA 8270C (SIM)												
Acenaphthene	340	---	143	ug/kg dry	5	382	ND	89	45-120%	---	---	
Acenaphthylene	376	---	143	"	"	"	20.4	93	"	---	---	
Anthracene	445	---	143	"	"	"	53.1	102	55-120%	---	---	
Benz(a)anthracene	389	---	143	"	"	"	43.7	90	50-120%	---	---	
Benzo(a)pyrene	400	---	143	"	"	"	29.8	97	"	---	---	
Benzo(b)fluoranthene	517	---	143	"	"	"	106	107	45-120%	---	---	
Benzo(k)fluoranthene	429	---	143	"	"	"	29.7	104	45-125%	---	---	
Benzo(g,h,i)perylene	535	---	143	"	"	"	73.1	121	40-125%	---	---	
Chrysene	414	---	143	"	"	"	44.2	97	55-120%	---	---	
Dibenz(a,h)anthracene	502	---	143	"	"	"	41.5	121	40-125%	---	---	
Fluoranthene	473	---	143	"	"	"	46.2	112	55-120%	---	---	
Fluorene	343	---	143	"	"	"	ND	90	20-120%	---	---	
Indeno(1,2,3-cd)pyrene	603	---	143	"	"	"	105	130	40-120%	---	---	Q-01
Naphthalene	346	---	143	"	"	"	ND	91	"	---	---	
Phenanthrene	398	---	143	"	"	"	49.2	91	50-120%	---	---	
Pyrene	450	---	143	"	"	"	43.9	106	45-125%	---	---	
Pentachlorophenol (PCP)	609	---	191	"	"	"	233	98	25-120%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 77 %*		*Limits: 35-120 %*		*Dilution: 5x*					
2,4-Dibromophenol (Surr)			*72 %*		*30-125 %*		*"*					
2-Fluorobiphenyl (Surr)			*83 %*		*45-120 %*		*"*					
p-Terphenyl-d14 (Surr)			*94 %*		*30-120 %*		*"*					

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503-718-0333 Fax

GeoEngineers	Project: **Ridgefield WWTP**	
15055 SW Sequoia Pkwy, # 140	Project Number: 12383-001-01	**Reported:**
Portland, OR 97224	Project Manager: Chris Breemer	09/15/08 15:52

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8090105 - EPA 3051							**Soil**					
Blank (8090105-BLK1)						**Analyzed: 09/10/08 21:34**						
EPA 6020												
Arsenic	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	---	1.00	"	"	---	---	---	---	---	---	
Copper	ND	---	4.00	"	"	---	---	---	---	---	---	
Zinc	ND	---	4.00	"	"	---	---	---	---	---	---	
LCS (8090105-BS1)						**Analyzed: 09/10/08 21:37**						
EPA 6020												
Arsenic	50.3	---	1.00	mg/kg wet	10	50.0	---	101	80-120%	---	---	
Cadmium	51.8	---	1.00	"	"	"	---	104	"	---	---	
Copper	52.2	---	4.00	"	"	"	---	104	"	---	---	
Zinc	51.1	---	4.00	"	"	"	---	102	"	---	---	

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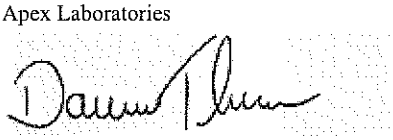

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15055 SW Sequoia Pkwy, # 140	Project Number: 12383-001-01	**Reported:**
Portland, OR 97224	Project Manager: Chris Breemer	09/15/08 15:52

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight by D2216

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8090071 - Dry Weight							**Soil**					
Duplicate (8090071-DUP1)			**Source: A809062-01**			**Analyzed: 09/09/08 07:51**						
D2216												
% Solids	**92.8**	---	1.00	% by Weight	1	---	92.5	---	---	0.3	20%	

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15055 SW Sequoia Pkwy, # 140	Project Number: 12383-001-01	**Reported:**
Portland, OR 97224	Project Manager: Chris Breemer	09/15/08 15:52

SAMPLE PREPARATION INFORMATION

PAH by EPA 8270C SIM

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8090070							
A809062-01	Soil	EPA 8270C (SIM)	09/05/08 11:00	09/08/08 11:31	14.92g/5mL	15g/5mL	1.01
A809062-02	Soil	EPA 8270C (SIM)	09/05/08 11:15	09/08/08 11:31	14.08g/5mL	15g/5mL	1.07

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8090105							
A809062-01	Soil	EPA 6020	09/05/08 11:00	09/10/08 10:39	0.488g/50mL	0.5g/50mL	1.02
A809062-02	Soil	EPA 6020	09/05/08 11:15	09/10/08 10:39	0.503g/50mL	0.5g/50mL	0.99

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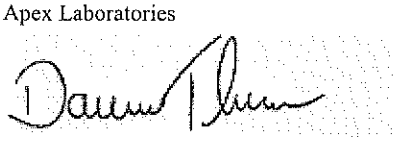

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GeoEngineers	Project: **Ridgefield WWTP**	
15055 SW Sequoia Pkwy, # 140	Project Number: 12383-001-01	**Reported:**
Portland, OR 97224	Project Manager: Chris Breemer	09/15/08 15:52

Notes and Definitions

Qualifiers:

Q-01	The percent recovery and/or RPD was outside acceptance limits for this spiked sample. The batch was accepted based on LCS recovery.
Q-16	Reanalysis of an original Batch QC sample.
R-04	Reporting levels elevated due to dilution necessary for analysis.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically stated, all analyses include full Batch QC, including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates, in order to meet or exceed method and regulatory requirements. This report contains only results for Batch QC derived from samples included in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.

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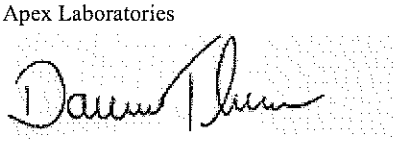

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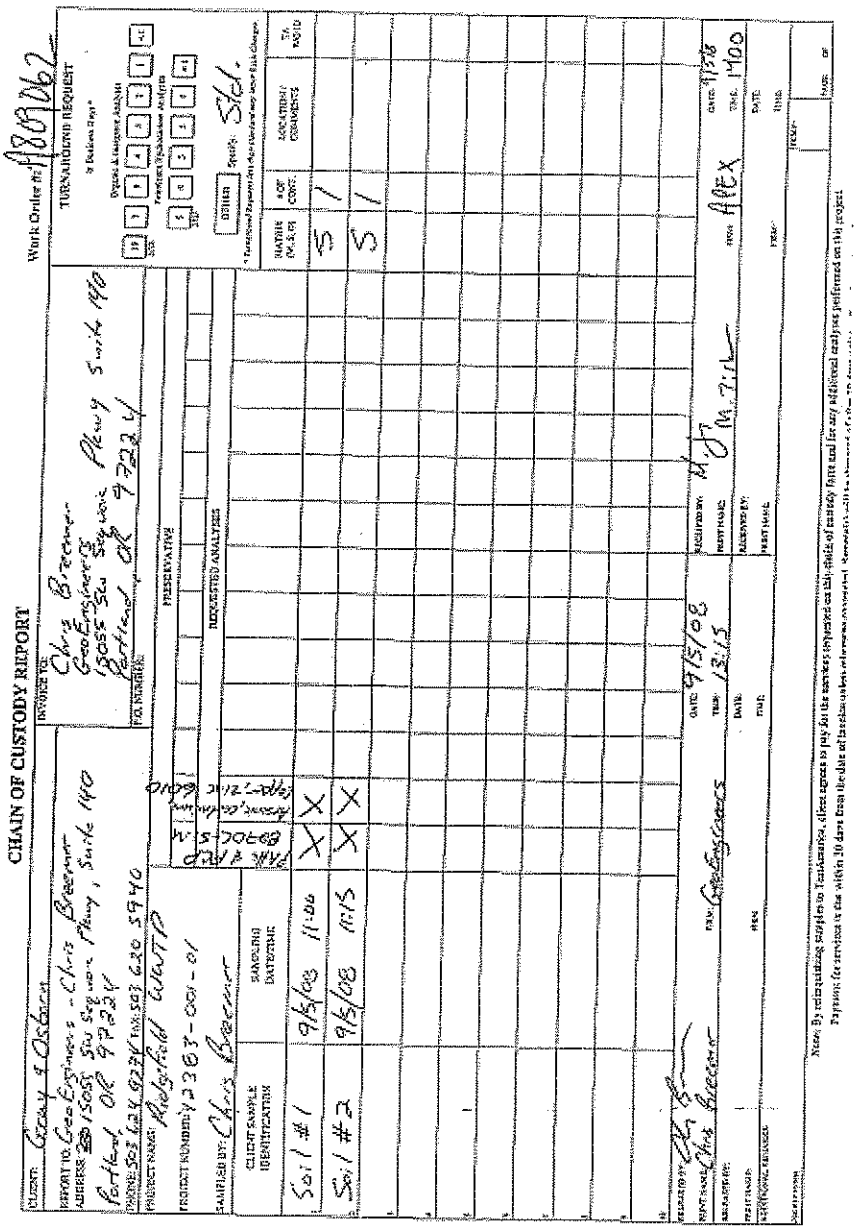
GeoEngineers 15055 SW Sequoia Pkwy, # 140 Portland, OR 97224	Project: **Ridgefield WWTP** Project Number: 12383-001-01 Project Manager: Chris Breemer	**Reported:** 09/15/08 15:52



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APPENDIX F

CELLS 3 AND 4 INTERIM ACTION PLAN, PREPARED BY GROUP MACKENZIE

CELLS 3 AND 4 INTERIM ACTION
RIDGEFIELD, WA

PROPERTY OWNER

PORT OF RIDGEFIELD

ATTN: LAURIE OLIN
PO BOX 55
RIDGEFIELD, WA 98642
PHONE: (360) 887-3873
FAX: (360) 887-3403
E-MAIL: LOLIN@PORTRIDGEFIELD.ORG

CONTACT

MAUL FOSTER + ALONGI, INC

2001 NW 19th Avenue, Suite 200,
Portland, OR 97209
PHONE: (971) 544 2139
FAX: (971) 544 2140
CONTACT: JENNIFER KING
E-MAIL: jking@maulfoster.com

SITE AREA

41.22 AC (1,795,404 SF)

SITE ADDRESS

111 WEST DIVISION STREET
RIDGEFIELD, WA 98642

TOWNSHIP, RANGE AND SECTION

T4N R1W SEC 13 AND 24

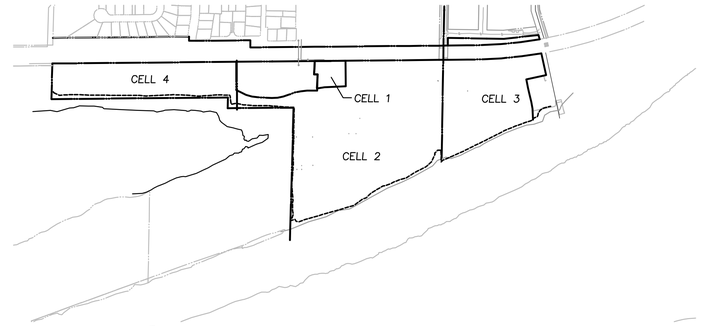
ELEVATION DATUM AND BENCHMARK

NGVD(29/47)

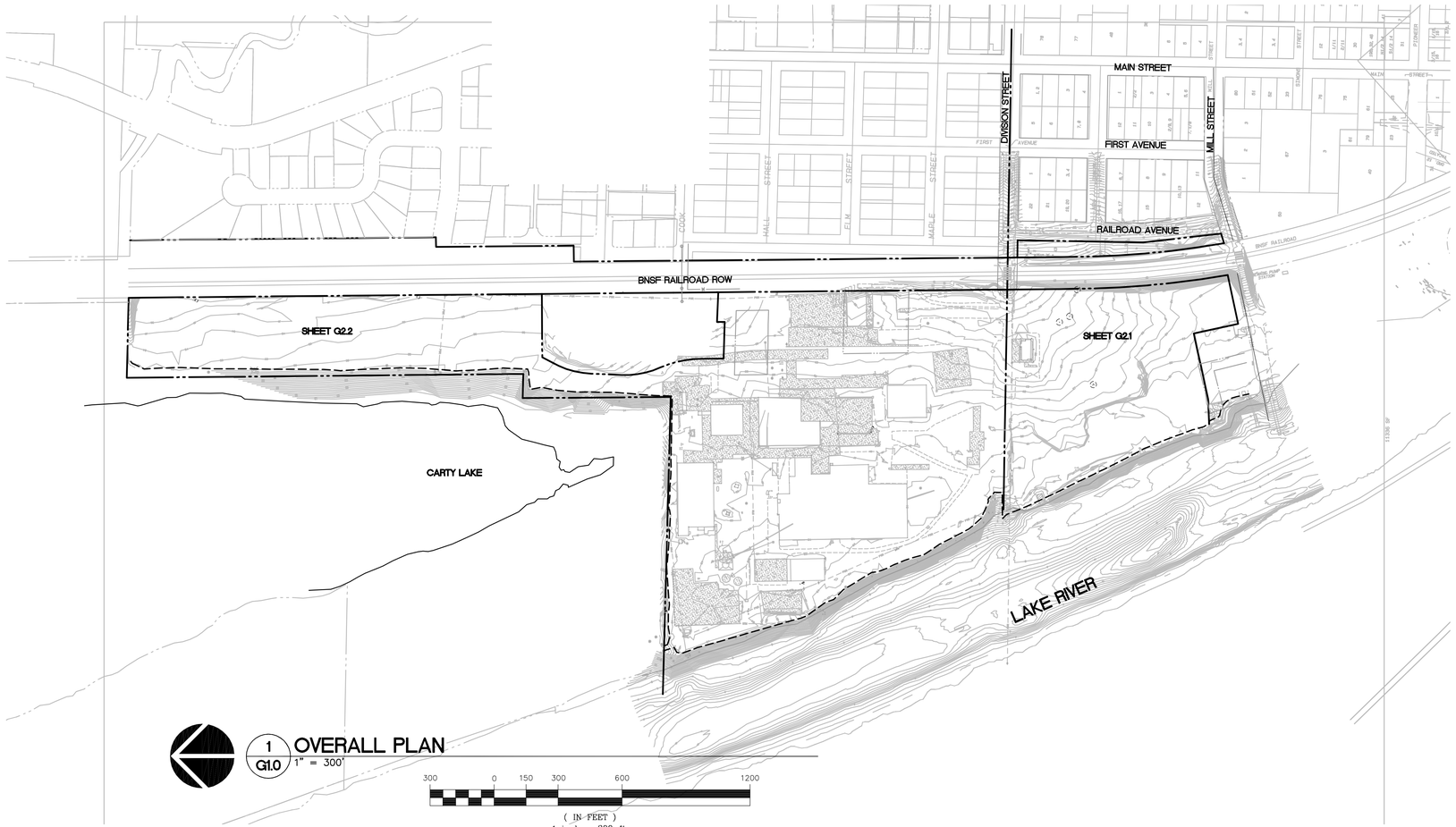
BENCHMARKS:
PIONEER AVE 1795 – BRASS DISK IN SE BRIDGE ABUTMENT OF THE GEE CREEK BRIDGE ON 269 ST, EL = 64.92

DEPOT ST 111 – BRASS DISK IN CURB IN SW QUADRANT OF INTERSECTION OF DEPOT AND MAIN, 2' EAST OF WEST CURB RETURN, EL = 84.05

SHEET INDEX



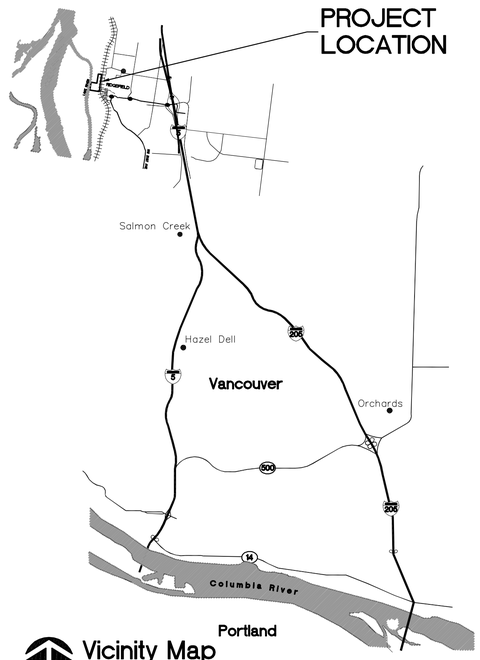
2 G1.0 CELL BOUNDARY PLAN
N.T.S.



1 G1.0 OVERALL PLAN
1" = 300'

300 0 150 300 600 1200
(IN-FEET)
1 inch = 300 ft.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: BARBIERI & ASSOCIATES INC. DATE: 3-30-2010



PROJECT LOCATION

Vicinity Map
NOT TO SCALE

REVISED PER MFA COMMENTS- MAY 27, 2010
SUBMITTED TO ECOLOGY - APRIL 14, 2010

GROUP MACKENZIE
Architecture
Interior Design
Land Use Planning
Civil Engineering
Structural Engineering
Transportation Planning
Landscape Architecture
Seattle WA 206.749.9993
Portland OR 503.224.9560
Vancouver WA 360.695.7879

Client
Port of Ridgefield

Project
CELLS 3 AND 4 INTERIM ACTION
RIDGEFIELD, WA

DAVID G. LARSON
STATE of WASHINGTON
23940
REGISTERED PROFESSIONAL ENGINEER

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
COVER SHEET

DRAWN BY: MJS/DAH

CHECKED BY: DGL

SHEET:
G1.0

JOB NO. 2050304.00

2050304.00\CIVIL\304G1-0.DWG:3624 MJS 05/27/10 15:26 1:100

1 G2.1 **GRADING PLAN - CELL 3**

1" = 40'

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: BARBIERI & ASSOCIATES INC. DATE: 3-30-2010

GENERAL NOTES

1. EXCAVATED MATERIAL FROM CELL 3, WEST OF TOP OF NEW BANK – PLACE IN DESIGNATED FILL AREAS WITHIN CELL 3.
2. USE CLEAN FILL FROM STOCKPILES TO ATTAIN REQUIRED CLEAN SOIL CAP THICKNESS AND FINISHED GRADE.
3. CONTAMINATED SOIL TO BE REMOVED, STOCKPILED, AND DISPOSED OF PRIOR TO PLACEMENT OF FILL, PER THE INTERIM ACTION WORK PLAN PREPARED BY MAUL, FOSTER & ALONGI.
4. CONTRACTOR TO INSTALL OWNER-SUPPLIED SKAPS GT-160 NON-WOVEN GEOTEXTILE OR APPROVED EQUIVALENT (AOS 0.212mm, MINIMUM PUNCTURE RESISTANCE 90 LBS) ON TOP OF FINISHED SUBGRADE BELOW CLEAN FILL WITH MIN. 6" OVERLAP.
5. MONITORING WELL MW-28S SHALL BE DECOMMISSIONED BY A LICENSED WELL DRILLER CONTRACTED BY OWNER. MONITORING WELLS MW-9S, MW-45S, MW-45D, MW-46D, MW-46S, MW20-D, MW-20S, MW-29D WILL BE MAINTAINED DURING CONSTRUCTION. ELEVATIONS WILL BE MODIFIED BY A LICENSED WELL DRILLER CONTRACTED BY OWNER, FOLLOWING COMPLETION OF EXCAVATION AND CAPPING.
6. ALL PIPING SHALL BE ASTM D-3034 PVC.
7. TREATED WOOD TO BE DISPOSED OF PER WAC 173-303-071. THE PORT WILL COORDINATE APPROVALS FOR DISPOSAL OF MATERIAL.
8. TRENCH SPOILS TO BE PLACED IN EXCAVATION AS BACKFILL OR PLACED UNDERNEATH GEOTEXTILE AND CLEAN CAP.
9. COMPACTED FILL MATERIAL SHALL MEET THE SPECIFICATIONS PROVIDED IN WSS 9-03.14(3) – BORROW MATERIAL. SOILS SHALL BE PLACED IN LIFTS OF AN UNCOMPACTED THICKNESS OF 8-12 INCHES. PLACED FILL SHALL BE COMPACTED TO NOT LESS THAN 92 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-180.

LOCATION	EXCAVATION DIMENSIONS (FEET)	DIMENSIONS (CU YDS)	COORDINATES (WASHINGTON STATE PLANE FEET NAD83)
CELL 3			
MW-9S	20x20, 1 FT DEEP	14.8	184957.32 1066779.79
SPY-01A	20x20, 2 FT DEEP	29.6	185063.38 1066975.27
SPY-01B	20x20, 6 FT DEEP	88.9	185031.89 1066993.15
SS-7	20x10, 1 FT DEEP	7.4	185007.94 1067076.94

LEGEND

- EXISTING PROPERTY LINE/ROW
- EXISTING EASEMENT
- EXISTING 100-YR FLOODPLAIN
- SITE BOUNDARY LINE
- EXISTING CONTOUR 25
- PROPOSED CONTOUR 25
- SHORELINES AREA
- EXISTING BUILDING TO BE REMOVED
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- AREA OF CUT 3' CAP
- AREA OF FILL 2' CAP
- CONTAMINATED SOIL LOCATION
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED STORMLINE
- EXISTING PILINGS/POLES TO BE REMOVED
- MONITORING WELL TO BE MAINTAINED

REVISED PER MFA COMMENTS- MAY 27, 2010
SUBMITTED TO ECOLOGY - APRIL 14, 2010

GROUP MACKENZIE
Civil Engineering
Structural Engineering
Transportation Planning
Landscape Architecture
Architecture
Interior Design
Land Use Planning
Portland OR 503.224.9560
Vancouver WA 360.695.7879
Seattle WA 206.749.9993

Client

Port of Ridgefield

Project
CELLS 3 AND 4 INTERIM ACTION

RIDGEFIELD, WA

DAVID G. LARSON STATE OF WASHINGTON 23940 REGISTERED PROFESSIONAL ENGINEER

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
GRADING PLAN CELL 3

DRAWN BY: MJS/DAH

CHECKED BY: DGL

SHEET:

G2.1

JOB NO. 2050304.00

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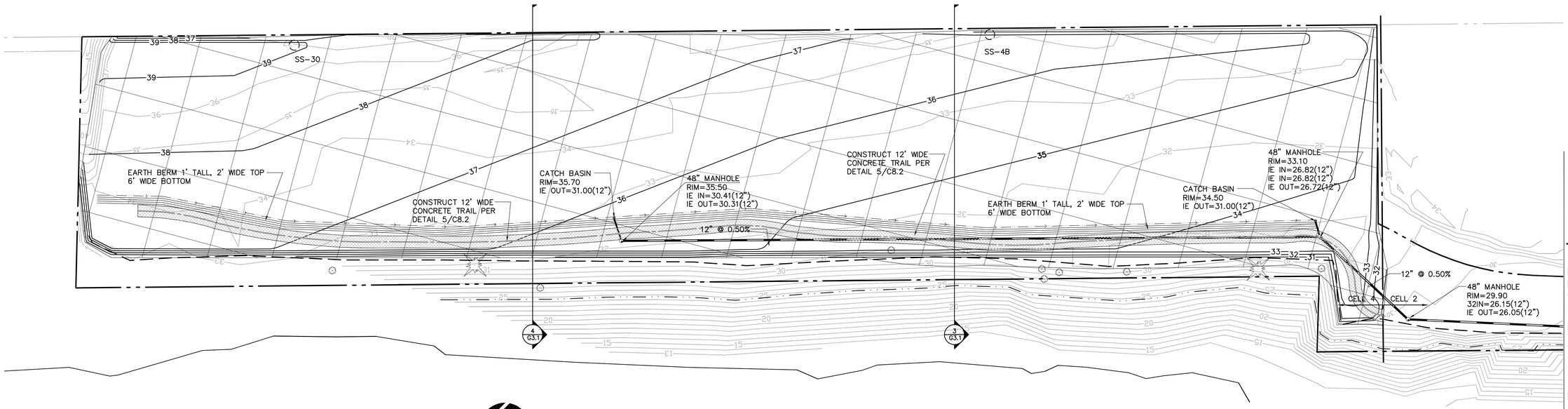


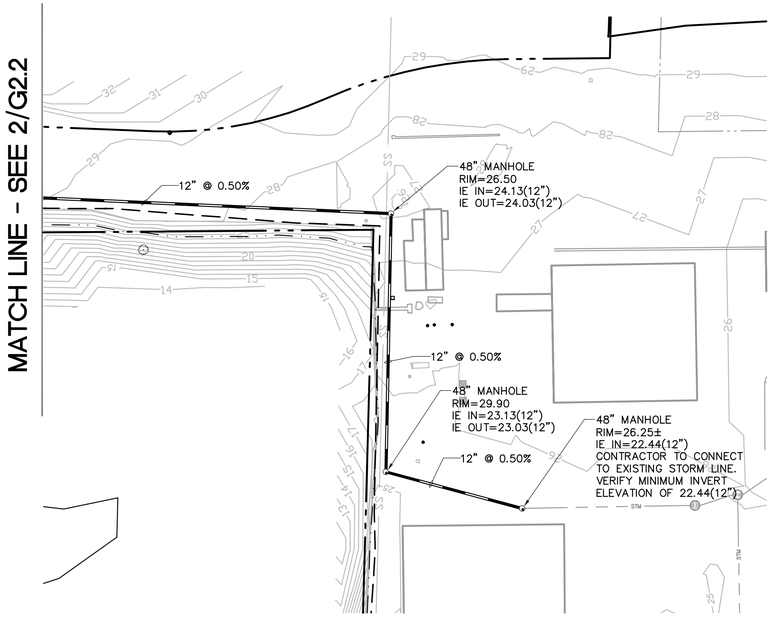
MATCH LINE - SEE 2/G2.2

1 G2.2 GRADING PLAN - CELL 4

1" = 50'

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



2 G2.2 STORM CONNECTION

1" = 50'

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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GENERAL NOTES

1. USE CLEAN FILL FROM STOCKPILES TO ATTAIN REQUIRED CLEAN SOIL CAP THICKNESS AND FINISHED GRADE.
2. CONTAMINATED SOIL TO BE REMOVED, STOCKPILED, AND DISPOSED OF PRIOR TO PLACEMENT OF FILL, PER THE INTERIM ACTION WORK PLAN PREPARED BY MAUL, FOSTER & ALONGI.
3. CONTRACTOR TO INSTALL OWNER-SUPPLIED SKAPS GT-160 NON-WOVEN GEOTEXTILE OR EQUIVALENT (AOS 0.212mm, MINIMUM PUNCTURE RESISTANCE 90 LBS) ON TOP OF FINISHED SUBGRADE BELOW CLEAN FILL WITH MIN. 6" OVERLAP.
4. TRENCH SPOILS TO BE PLACED IN EXCAVATION AS BACKFILL OR PLACED UNDERNEATH GEOTEXTILE AND CLEAN CAP.
5. COMPACTED FILL MATERIAL SHALL MEET THE SPECIFICATIONS PROVIDED IN WSS 9-03.14(3) - BORROW MATERIAL. SOILS SHALL BE PLACED IN LIFTS OF AN UNCOMPACTED THICKNESS OF 8-12 INCHES. PLACED FILL SHALL BE COMPACTED TO NOT LESS THAN 92 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-180.
6. CONTRACTOR TO PROTECT EXISTING SITE FEATURES IN AREA OF WORK, INCLUDING STORMWATER, WATER, AND CITY OF RIDGEFIELD DISCHARGE UTILITIES, AND EXTRACTION, INJECTION AND MONITORING WELLS.

LOCATION	EXCAVATION DIMENSIONS (FEET)	DIMENSIONS (CU YDS)	COORDINATES (WASHINGTON STATE PLANE FEET NAD83)
CELL 4			
SS-4B	10x10, 1 FT DEEP	3.7	187066.71 1067053.73
SS-30	10x10, 1 FT DEEP	3.7	187759.89 1067043.19

LEGEND

- EXISTING PROPERTY LINE/ROW
- EXISTING EASEMENT
- EXISTING 100-YR FLOODPLAIN
- SITE BOUNDARY LINE
- EXISTING CONTOUR 25
- PROPOSED CONTOUR 25
- SHORELINES AREA
- EXISTING BUILDING TO BE REMOVED
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- AREA OF CUT
- AREA OF FILL (2' MIN CLEAN SOIL CAP)
- CONTAMINATED SOIL LOCATION
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED STORMLINE
- EXISTING PILINGS/POLES TO BE REMOVED

REVISED PER MFA COMMENTS- MAY 26, 2010
SUBMITTED TO ECOLOGY - APRIL 14, 2010

GROUP MACKENZIE
Civil Engineering
Structural Engineering
Transportation Planning
Landscape Architecture
Architecture
Interior Design
Land Use Planning
Portland OR 503.224.9560
Vancouver WA 360.695.7879
Seattle WA 206.749.9993

Client

Port of Ridgefield

Project
CELLS 3 AND 4
INTERIM ACTION

RIDGEFIELD, WA

DAVID G. LARSON
STATE of WASHINGTON
23940
REGISTERED
PROFESSIONAL ENGINEER

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
GRADING PLAN
CELL 4

DRAWN BY: MJS/DAH

CHECKED BY: DGL

SHEET:
G2.2

JOB NO. 2050304.00

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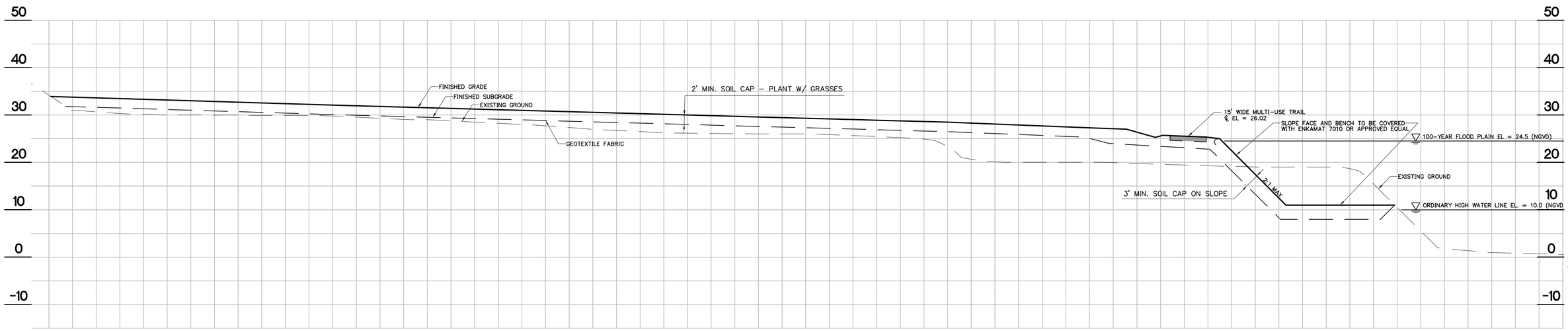
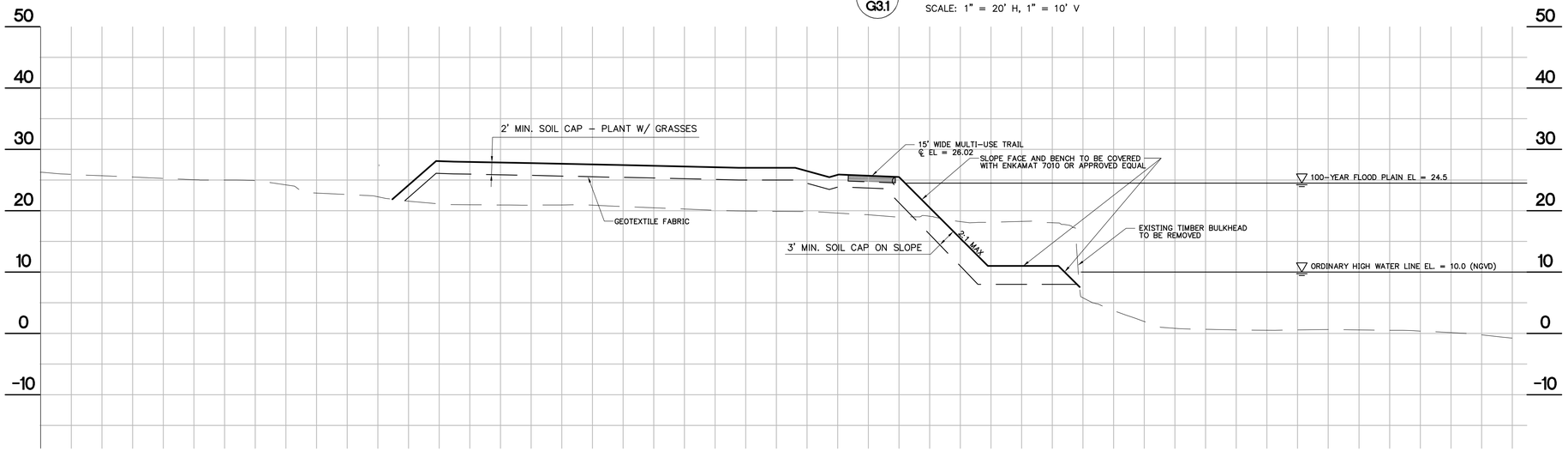


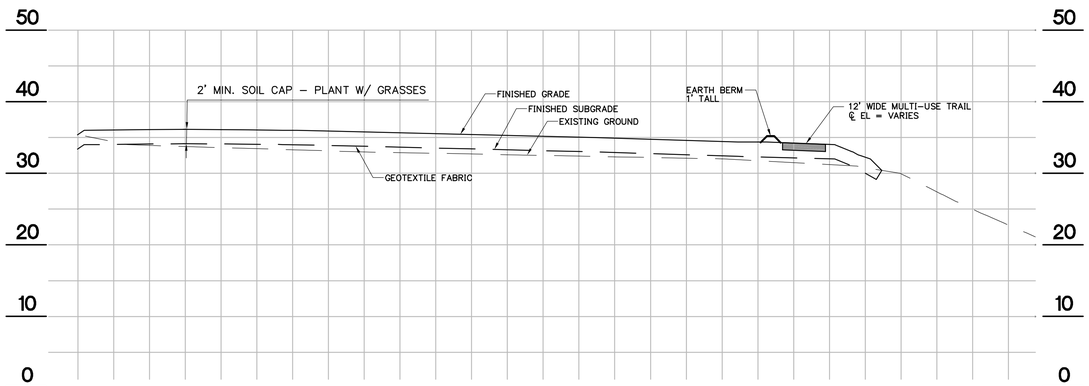
1 G3.1 **SECTION 1**

SCALE: 1" = 20' H, 1" = 10' V



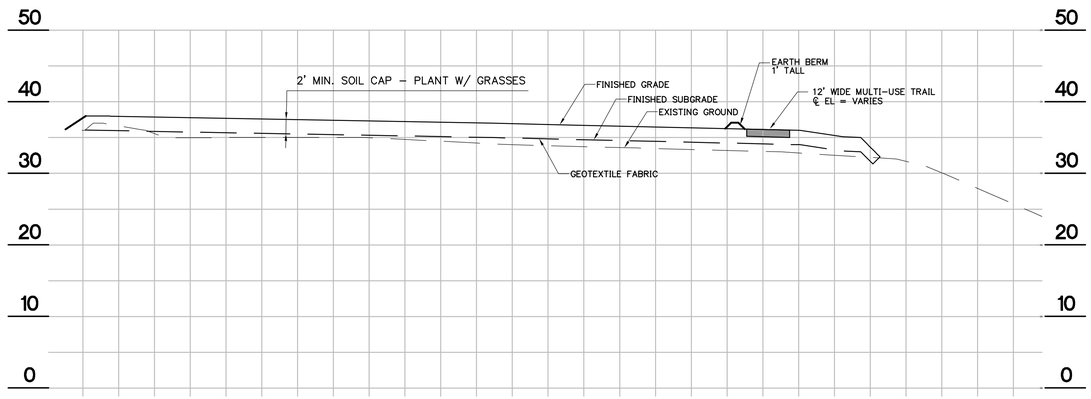
2 G3.1 **SECTION 2**

SCALE: 1" = 20' H, 1" = 10' V



3 G3.1 **SECTION 3**

SCALE: 1" = 20' H, 1" = 10' V



4 G3.1 **SECTION 4**

SCALE: 1" = 20' H, 1" = 10' V

GROUP MACKENZIE
Architecture
Interior Design
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REGISTERED PROFESSIONAL ENGINEER

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
CROSS SECTIONS

DRAWN BY: MJS

CHECKED BY: DGL

SHEET:

G3.1

JOB NO. 2050304.00

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SUBMITTED TO ECOLOGY - APRIL 14, 2010

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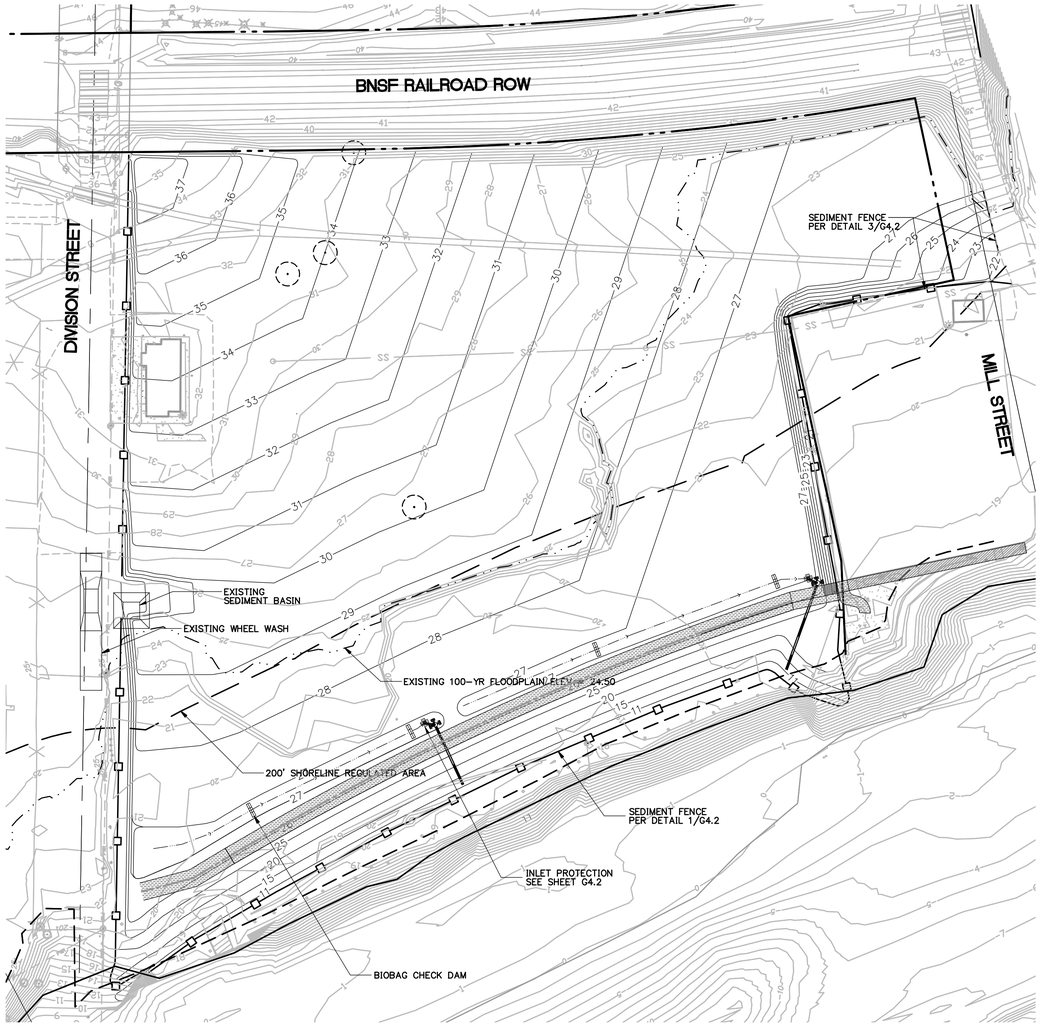
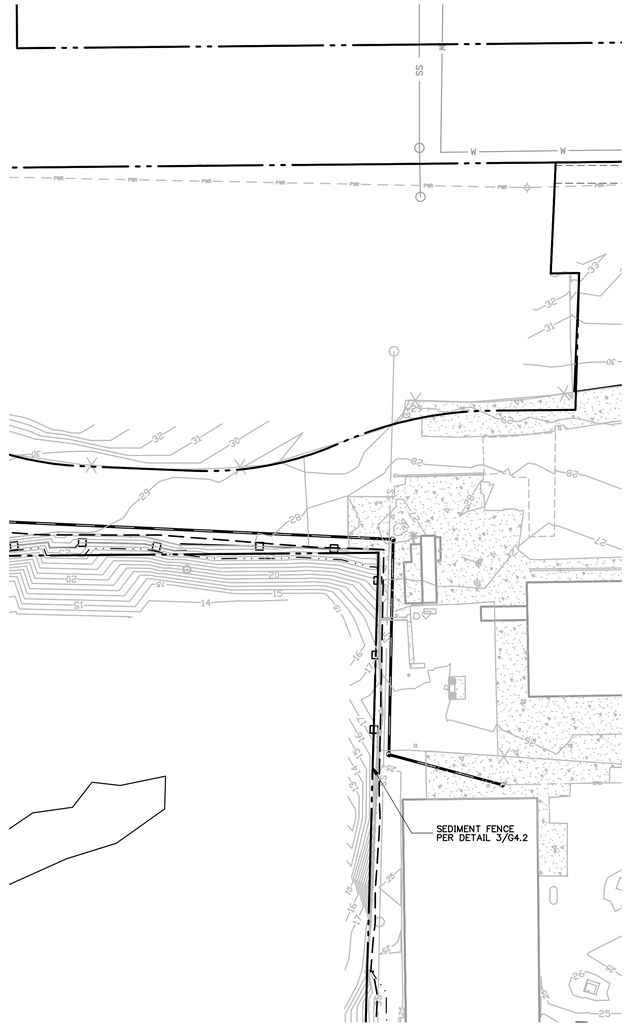


LEGEND

PROPOSED CONTOUR	40
EXISTING CONTOUR	40
EXISTING PROPERTY LINE	
SEDIMENT FENCE	



1 G4.0 SOUTH EROSION CONTROL PLAN - CELL 3

1" = 60'

60 0 30 60 120 240

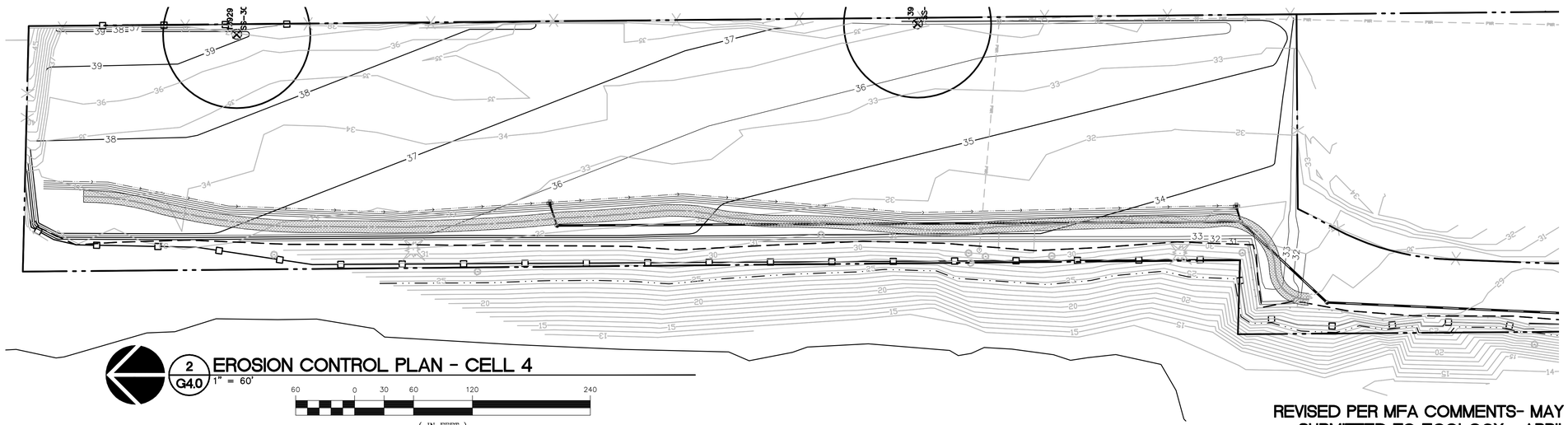
(IN FEET)
1 inch = 60 ft.

3 G4.0 EROSION CONTROL PLAN - STORM CONNECTION

1" = 60'

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.



2 G4.0 EROSION CONTROL PLAN - CELL 4

1" = 60'

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

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Vancouver WA 360.695.7879
Seattle WA 206.749.9993

Client

Port of Ridgefield

Project
CELLS 3 AND 4 INTERIM ACTION

RIDGEFIELD, WA

DAVID G. LARSON
STATE OF WASHINGTON
23040
REGISTERED PROFESSIONAL ENGINEER

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
EROSION CONTROL PLAN CELL 3 + 4

DRAWN BY: MJS

CHECKED BY: DGL

SHEET:

G4.0

JOB NO. 2050304.00

2050304001\CIVIL\304G4-0.DWG.3624 MJS 05/27/10 10:19 1:60

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS

CURRENTLY THE SITE IS AN INDUSTRIAL SITE WITH A VARIETY OF INDUSTRIAL TENANTS. THE SITE WAS PREVIOUSLY UTILIZED AS AN INDUSTRIAL WOOD TREATMENT FACILITY. THE ENTIRE SITE HAS BEEN CLEARED, GRADED, STOCKPILED AND OTHERWISE SURFACED WITH CONCRETE, GRAVEL OR ASPHALT. SUBSURFACE CONTAMINATION HAS BEEN REMEDIATED IN ACCORDANCE WITH DOE REQUIREMENTS.

DEVELOPED CONDITIONS

THE PROPOSAL WILL GRADE CELLS 3 AND 4, CONSTRUCT A 2 FOOT MINIMUM SOIL CAP WITH A GEOTEXTILE EAST OF THE PROPOSED TOP OF BANK IN CELLS 3 AND 4, CONSTRUCT A 3 FOOT MINIMUM SOIL CAP WITH A GEOTEXTILE WEST OF THE PROPOSED TOP OF BANK TO MEAN HIGH TIDE IN CELL 3 AND UPGRADE THE EXISTING STORMWATER SYSTEM.

NATURE OF CONSTRUCTION ACTIVITY AND ESTIMATED TIME TABLE

* CLEARING (JULY 2010)
* GRADING (JULY 2010 – AUGUST 2010)
* FINAL STABILIZATION (AUGUST 2010 – SEPTEMBER 2010)

TOTAL SITE AREA = 1,905,750 SF = 45.08 ACRES

TOTAL DISTURBED AREA = 669,348 SF = 15.37 ACRES

SITE SOIL CLASSIFICATION:

THE SITE CONSISTS MAINLY OF SAUVIE SILT LOAM AND HILLSBORO SILT LOAM.

RECEIVING WATER BODIES:

THE GRADING ONSITE WILL INCLUDE EROSION CONTROL MEASURES AND SOILS STABILIZATION MEASURES. STORMWATER DISCHARGES WILL FLOW OVER LAND AND WILL EVENTUALLY FLOW TO LAKE RIVER.

INSPECTION FREQUENCY:

ACTIVE SITES:
– WEEKLY AND WITHIN 24 HRS. OF A PRECIPITATION/DISCHARGE EVENT
INACTIVE SITES:
– MONTHLY AND WITHIN 24 HRS. OF A PRECIPITATION/DISCHARGE EVENT
TOTAL 0.5 IN OF RAINFALL OVER A 24 HOUR PERIOD

INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH SWPPP REQUIREMENTS.

BMP MATRIX FOR CONSTRUCTION PHASES

REFER TO DOE SWM FOR WESTERN WASHINGTON

	CLEARING	GRADING	STOCKPILE	FINAL STABILIZATION	WET WEATHER (OCT. 1 - MAY 31ST)
EROSION PREVENTION					
PRESERVE NATURAL VEGETATION	**X	X	X	X	X
GROUND COVER	X	X	X	X	X
HYDRAULIC APPLICATIONS					
PLASTIC SHEETING			X	X	X
MATTING			X	X	X
DUST CONTROL	X	X	X	X	X
TEMPORARY/ PERMANENT SEEDING		X	X	X	X
BUFFER ZONE	**X	X	X	X	X
OTHER:					
SEDIMENT CONTROL					
SEDIMENT FENCE (PERIMETER)	**X	X	X	X	X
SEDIMENT FENCE (INTERIOR)	**X	X	X	X	X
STRAW WATTLES		X	X	X	X
FILTER BERM					
INLET PROTECTION	**X	X	X	X	X
WHEEL WASH	**X	X	X	X	X
SEDIMENT BASIN	**X	X	X	X	X
OTHER:					
RUN OFF CONTROL					
CONSTRUCTION ENTRANCE	**X	X	X	X	X
PIPE SLOPE DRAIN					
OUTLET PROTECTION					
SURFACE ROUGHENING	X	X	X		
CHECK DAMS					
OTHER:					
POLLUTION PREVENTION					
PROPER SIGNAGE	X	X	X	X	X
HAZ WASTE MGMT	X	X	X	X	X
SPILL KIT ON-SITE	X	X	X	X	X
OTHER:					

** SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.

GENERAL EROSION CONTROL NOTES

1. APPROVAL OF THIS EROSION/SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.)
2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
5. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT–LADEN WATER DO NOT LEAVE THE SITE.
6. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
7. THE ESC FACILITIES ON INACTIVE SITE SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH AND WITHIN THE 24 HOURS FOLLOWING A RAINFALL EVENT TOTALING 0.5 IN OVER A 24 HOUR PERIOD OR GREATER.
8. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A TRAPPED CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT SLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM.
9. STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
10. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO ANY DISTURBANCE CAUSED BY CLEARING OR GRADING AND SHALL CONFORM TO THE REQUIREMENTS OF THE PUGET SOUND MANUAL, VOLUME II – EROSION AND SEDIMENT CONTROL. THE CITY OF RIDGEFIELD ENGINEERING AND CONSTRUCTION STANDARDS, AND TO THE STANDARD DETAILS ATTACHED TO THIS SET OF PLANS. NEWLY CONSTRUCTED OR MODIFIED INLETS AND CATCH BASINS ARE TO BE PROTECTED IMMEDIATELY. UPON INSTALLATION. TEMPORARY SEEDING AND MULCHING OF FILL SLOPES AND DIVERSION DIKES SHALL BE COMPLETED WITHIN ONE WEEK AFTER ROUGH GRADING. ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY THE APPROPRIATE BMP. DURING THE PERIOD FROM OCTOBER 1 TO APRIL 30 NO SOIL SHALL BE EXPOSED FOR MORE THAN TWO (2) DAYS. FROM MAY 1 TO SEPTEMBER 30 NO SOIL SHALL BE EXPOSED FOR MORE THAN SEVEN (7) DAYS.
11. PROTECTION
    A. PRIOR TO ANY SITE EXCAVATION, ALL STORM DRAINAGE INLETS SHALL BE PROTECTED AS SHOWN ON THE DETAIL SHEET TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA. CLEAN THE FILTER AS NECESSARY TO MAINTAIN DRAINAGE. PROVIDE APPROVED TRAFFIC CONTROL DEVICES AS NECESSARY. REMOVE FILTER AND CLEAN CATCH BASINS FOLLOWING COMPLETION OF SITEWORK.
    B. INSTALL SILT FENCE PRIOR TO EXCAVATION AS SHOWN ON THIS SHEET TO PREVENT SILT INTRUSION UPON ADJACENT LAND. FOR MAINTENANCE AND REMOVAL OF SILT FENCE. SEE DETAIL STANDARD ON THE DETAIL SHEET.
    C. PRIOR TO CONSTRUCTION, INSTALL SILT FENCE, PRIOR TO EXCAVATION ALONG THE DOWNHILL LOT LINE, IN ACCORDANCE WITH THIS SHEET TO PREVENT SILT INTRUSION UPON ADJACENT LOTS. IF CONSTRUCTION OCCURS SIMULTANEOUSLY ON ADJACENT LOTS AND THE LOTS HAVE THE SAME OWNER DURING CONSTRUCTION, THEN THE SILT FENCE ALONG THE COMMON LOT LINE CAN BE ELIMINATED.
12. PROTECTION OF ADJACENT ROADS AND STREETS
    A. AT ALL ACCESS POINTS ONTO THE SITE THAT ARE UTILIZED BY CONSTRUCTION EQUIPMENT AND TRUCKS, PROVIDE A CONSTRUCTION ENTRANCE AS SHOWN ON PLAN PER DETAILS ATTACHED. ALL TRUCKS LEAVING THE PAD SHALL EGRESS ACROSS THE PAD. ACCUMULATED SOIL SHALL BE PERIODICALLY REMOVED, OR ADDITIONAL ROCK SHALL BE PLACED UPON THE PAD SURFACE. ROCK SHALL BE CLEAN 4" TO 8" QUARRY SPALLS. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
    B. IF CONSTRUCTION OCCURS SIMULTANEOUSLY ON ADJACENT LOTS AND THE SAME OWNER DURING CONSTRUCTION, THEN, ONE LOT ENTRANCE CAN BE USED FOR ADJACENT LOTS.
13. IN AREAS SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST, WHERE ON–SITE OR OFF–SITE DAMAGE IS LIKELY TO OCCUR, ONE OR MORE OF THE FOLLOWING PREVENTATIVE MEASURES SHALL BE TAKEN FOR DUST CONTROL:
    A. MINIMIZE THE PERIOD OF SOIL EXPOSURE THROUGH THE USE OF TEMPORARY GROUND COVER AND OTHER TEMPORARY STABILIZATION PRACTICES.
    B. THE SITE IS SPRINKLED WITH WATER UNTIL SURFACE IS WET. REPEAT AS NEEDED TO PREVENT THE CARRY OUT OF MUD ONTO STREET, REFER TO STABILIZED CONSTRUCTION ENTRANCE DETAILS.
    C. SPRAY EXPOSED SOIL AREAS WITH A DUST PALLIATIVE. NOTE, USED OIL IS PROHIBITED AS A PALLIATIVE.
14. TEMPORARY SEEDING SHALL BE PLACED ON EXPOSED SURFACES THAT WILL NOT BE BROUGHT TO FINAL GRADING OR PERMANENT COVER TREATMENT OR VEGETATION WITHIN 30 DAYS OF THE EXPOSURE TO REDUCE EROSION SEDIMENTATION BY STABILIZING EXPOSED SOILS. SEEDED AREAS SHALL BE CHECKED REGULARLY TO ASSURE A GOOD STAND OF GRASS IS BEING MAINTAINED. AREAS THAT FAIL TO ESTABLISH VEGETATION COVER ADEQUATE TO PREVENT HILL EROSION WILL BE RESEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED.
15. APPLY THE FOLLOWING TEMPORARY/ PERMANENT SEEDING MIXTURE TO THE PREPARED SEED BED AT A RATE OF 120 LBS/ACRE:

NAME	PROPORTIONS BY WEIGHT	PERCENT PURITY	PERCENT GERMINATION
REDTOP	10%	92	90
ANNUAL RYE	40%	98	90
CHEWINGS FESCUE	40%	97	80
WHITE DUTCH CLOVER	10%	96	90

    * NOTE: "HYDROSEEDING" APPLICATIONS WITH APPROVED SEED–MULCH–FERTILIZER MIXTURES MAY ALSO BE USED
16. SLOPE TO RECEIVE TEMPORARY OR PERMANENT SEEDING SHALL HAVE THE SURFACE ROUGHENED BY MEANS OF TRACK–WALKING OR THE USE OF OTHER APPROVED IMPLEMENTS. SURFACE ROUGHENING IMPROVES SEED BEDDING AND REDUCES RUN–OFF VELOCITY.
17. LONG TERM SLOPE STABILIZATION MEASURES SHALL INCLUDE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER VIA SEEDING WITH APPROVED MIX AND APPLICATION RATE.
18. TEMPORARY SLOPE STABILIZATION MEASURES SHALL INCLUDE: COVERING EXPOSED SOIL WITH PLASTIC SHEETING, STRAW MULCHING, WOOD CHIPS, OR OTHER APPROVED MEASURES.
19. STOCKPILED SOIL OR STRIPPINGS SHALL BE PLACED IN A STABLE LOCATION AND CONFIGURATION. DURING "WET WEATHER" PERIODS, STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING OR STRAW MULCH. SEDIMENT FENCE IS REQUIRED AROUND THE PERIMETER OF THE STOCKPILE.
20. EXPOSED CUT OR FILL AREAS SHALL BE STABILIZED THROUGH THE USE OF TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS OR MATS, MID–SLOPE SEDIMENT FENCES OR WATTLES, OR OTHER APPROPRIATE MEASURES. SLOPES EXCEEDING 25% MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES.
21. AREAS SUBJECT TO WIND EROSION SHALL USE APPROPRIATE DUST CONTROL MEASURES INCLUDING THE APPLICATION OF A FINE SPRAY OF WATER, PLASTIC SHEETING, STRAW MULCHING, OR OTHER APPROVED MEASURES.
22. ACTIVE INLETS TO STORM WATER SYSTEMS SHALL BE PROTECTED THROUGH THE USE OF APPROVED INLET PROTECTION MEASURES. ALL INLET PROTECTION MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED AS NEEDED.
23. VEGETATION TO BE ESTABLISHED SHALL BE CONSISTENT WITH APPROVED DEPARTMENT OF ECOLOGY PLANTING LIST.

GENERAL SEDIMENT FENCE NOTES

1. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6–INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST.
2. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 8 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
3. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY–DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRE OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 4 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
4. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 12 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
5. NOT USED
6. SEDIMENT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
7. SEDIMENT FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
8. CONSTRUCTION SPECIFICATIONS
    A. SILT FENCE: THIS SEDIMENT BARRIER UTILIZES STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS. IT IS DESIGNED FOR SITUATIONS IN WHICH ONLY SHEET OR OVERLAND FLOWS ARE EXPECTED.
    B. THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED 36 INCHES (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE).
    C. A TRENCH SHALL BE EXCAVATED 8 TO 12 INCHES WIDE AND 12 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
    D. THE TRENCH SHALL BE BACKFILLED WITH NATIVE SOIL.
9. MAINTAINANCE
    A. SHOULD THE FABRIC ON A SILT FENCE OF FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
    B. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE–HALF THE HEIGHT OF THE BARRIER.
    C. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

WHEEL WASH NOTES

1. USE EXISTING ONSITE WHEEL WASH TO PREVENT MUD AND DEBRIS ARE TRACKED OUT ONTO THE STREET DUE TO EITHER CONSTRUCTION PRACTICES OR WET WEATHER CONSTRUCTION.
2. WHEEL WASH WATER SHALL BE DISCHARGED TO NEIGHBORING SEDIMENT BASIN. THE SEDIMENT BASIN PROVIDES A MEANS OF SEDIMENT SETTLING AREA, AND ENERGY DISSAPATION.
3. WHEEL WASH AND SEDIMENT BASIN IS REQUIRED TO BE PUMPED OUT DAILY.
4. INSTALL NEW WHEEL WASH WHEN WORK ITEMS PREVENT USE OF EXISTING WHEEL WASH.

EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION:

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. ALL "SEDIMENT BARRIERS (TO BE INSTALLED AFTER GRADING)" SHALL BE INSTALLED IMMEDIATELY FOLLOWING ESTABLISHMENT OF FINISHED GRADE AS SHOWN ON THESE PLANS.
3. SLOPE STABILIZATION WILL INCLUDE SURFACE ROUGHENING DETAIL 4–12 AND MATTING DETAIL 4–1 SHEET MG3.3 AND WILL BECOME PART OF THE LONG TERM STABILIZATION PROTECTION.
4. LONG TERM SLOPE STABILIZATION MEASURES "INCLUDING MATTING" SHALL BE IN PLACE OVER ALL EXPOSED SOILS BY OCTOBER 1.

THESE EROSION AND SEDIMENT CONTROL PLANS ASSUME "DRY WEATHER" CONSTRUCTION. "WET WEATHER" CONSTRUCTION MEASURES NEED TO BE APPLIED BETWEEN NOVEMBER 1ST AND APRIL 31ST.

REVISED PER MFA COMMENTS- MAY 27, 2010
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Portland OR 503.224.9560 · Vancouver WA 360.695.7879 · Seattle WA 206.749.9993

Client

Port of Ridgefield

Project
CELLS 3 AND 4
INTERIM ACTION

RIDGEFIELD, WA

DAVID G. JARSON
STATE OF WASHINGTON
23940
REGISTERED
PROFESSIONAL ENGINEER

REVISIONS:

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SHEET TITLE:
EROSION CONTROL NOTES

DRAWN BY: MJS

CHECKED BY: DGL

SHEET:

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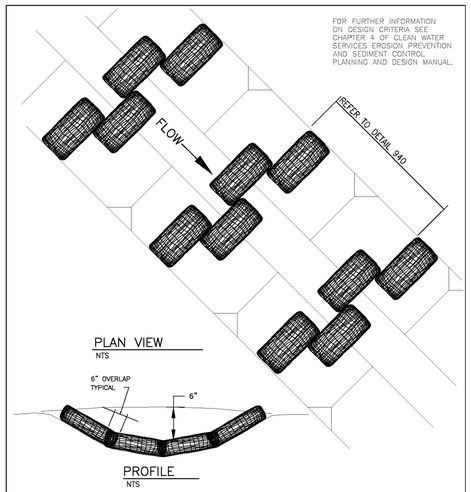
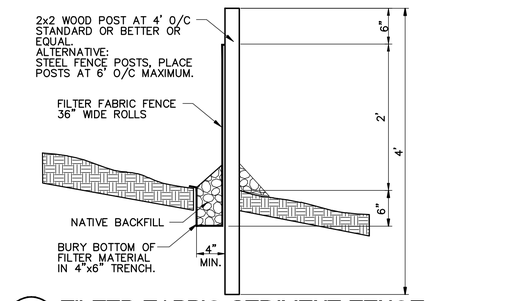


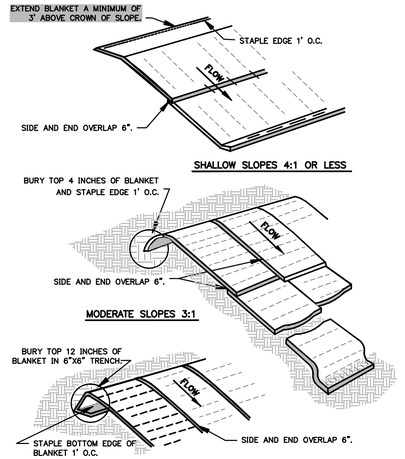
NOTES:
1. STAKING OF BAGS REQUIRED USING (2) 1"x2" WOOD STAKES OR APPROVED EQUAL PER BAG.
2. SURFACE MUST BE SMOOTH BEFORE APPLICATION.
3. CHECK DAMS CAN BE CONSTRUCTED USING STRAW WATTLES OR OTHER MATERIALS AS APPROVED BY THE DISTRICT OR CITY.

CHECK DAM
BIO–FILTER BAG

DRAWING NO. 845 REVISED 12–06



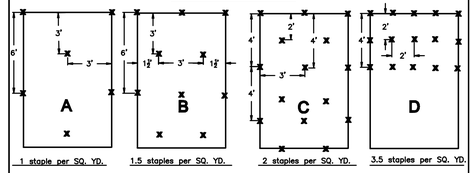
1 G4.2 FILTER FABRIC SEDIMENT FENCE
N.T.S. E–FENCE



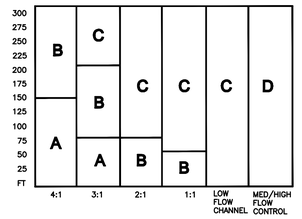
NOTES:
1. ON SHALLOW SLOPES BLANKETS MAY BE APPLIED ACROSS THE SLOPE.
2. ALL BLANKET STAPLE REQUIRED AS PER TABLE.

MATTING SLOPE INSTALLATION | Detail Drawing 4–1

STAPLE PATTERN

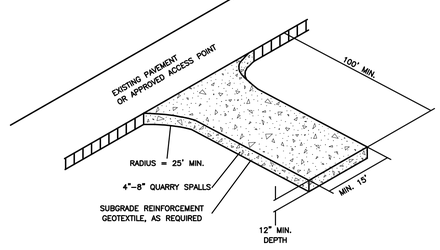


LENGTH AND SLOPE TABLE

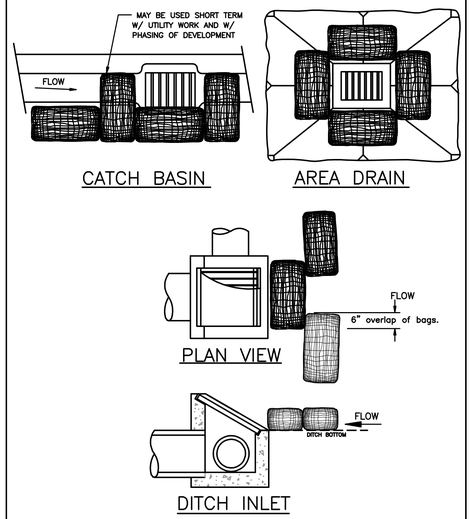


*Minimum staple pattern guide and recommendation for slope and channel application.

STAPLE TABLE | Detail Drawing 4–3

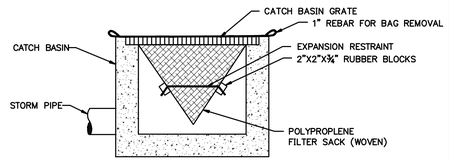


TECHNICAL GUIDANCE HANDBOOK | Gravel Construction Entrance | Detail Drawing 3–1A

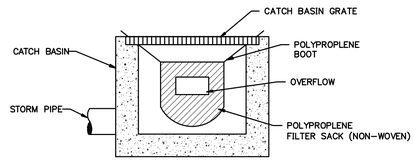


NOTES:
1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPES.
2. BIOFILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2" WOODEN STAKES OR APPROVED EQUAL PER BAG.

INLET PROTECTION TYPE 4 | Detail Drawing 4–24



WOVEN POLYPROPLENE SACK



NON–WOVEN POLYPROPLENE SACK

NOTE:
1. RECESSED CURB INLET CATCH BASINS MUST BE BLOCKED WHEN USING FILTER FABRIC INLET SACKS. SIZE OF FILTER FABRIC INLET SACKS TO BE DETERMINED BY MANUFACTURER.

INLET PROTECTION TYPE 5 | Detail Drawing 4–25

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Civil Engineering
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Architecture
Interior Design
Land Use Planning
Portland OR 503.224.9560
Vancouver WA 360.695.7879
Seattle WA 206.749.9993

Client

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Project
CELLS 3 AND 4
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RIDGEFIELD, WA

DAVID G. LARSON STATE OF WASHINGTON 23940 REGISTERED PROFESSIONAL ENGINEER

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SHEET:

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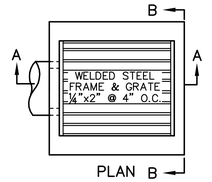
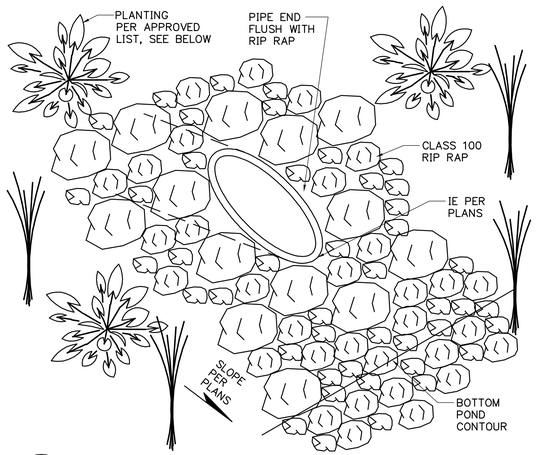


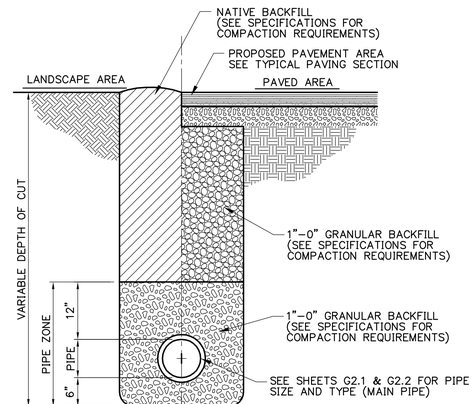
NOTES:

1. SPECIFICATIONS FOR CONCRETE AND MISC. MATERIALS USED IN CONSTRUCTION SHALL CONFORM TO CURRENT APWA STANDARD SPECIFICATIONS.
2. INSTALL STEPS WHEN DISTANCE FROM TOP OF GRATE TO FLOWLINE OF PIPE IS GREATER THAN 3.5 FEET.

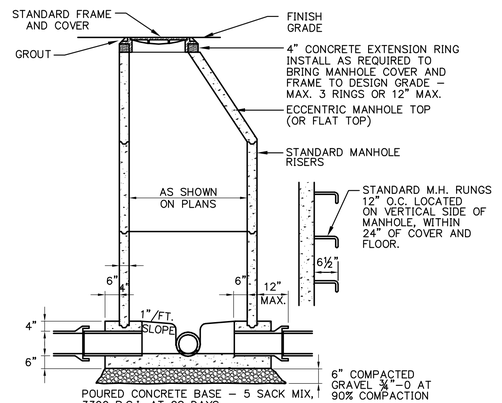
1 G8.0 **CONCRETE CATCH BASIN**
N.T.S. DITCH2FT



2 G8.0 **PIPE OUTFALL**
N.T.S. PIPE-OUTFALL1 1:1



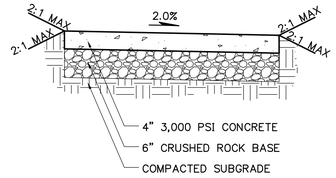
3 G8.0 **UTILITY TRENCH BEDDING AND BACKFILL**
N.T.S. TRENCH1



NOTES:

1. SPECIFICATIONS FOR CONCRETE AND MISC. MATERIALS USED IN CONSTRUCTION SHALL CONFORM TO CURRENT APWA STANDARD SPECIFICATIONS.

4 G8.0 **STANDARD MANHOLE**
N.T.S. STDMH 1:1



5 G8.0 **CONCRETE TRAIL SECTION**
N.T.S. DITCH2FT

Plants without a Tap Root List

Trees (SOIL CAP: 3 FEET OR GREATER)

Abies concolor	White Fir	Picea pungens*	Colorado Spruce
Acer japonicum*	Japanese Maple	Picea sitchensis	Sitka Spruce
Acer macrophyllum	Big-Leaf Maple	Platanus x acerifolia	London Plane Tree
Acer palmatum*	Japanese Maple	Popultus balsamifera	Black Cottonwood
Acer rubrum*	Red Maple	Prunus emarginata	Bitter Cherry
Betula papyrifera*	Paper Maple	Prunus serrulata	Japanese Flowering Cherry
Betula pendula	Weeping Birch	Psuedotsug menziesii	Douglas Fir
Carpinus betulus*	European Hornbeam	Salix sp.	Willows
Cercidiphyllum japonicum	Katsuratree	Styrax japonicas	Japanese Snowball
Cornus florida	Flowering Dogwood	Thuja occidentalis*	Arborvitae
Fagus sylvatica*	European Beech	Thuja plicata	Western Red Cedar
Fraxinus pennsylvanica*	Green Ash	Tilia cordata	Little Leaf Linden
Larix occidentalis	Western Larch		

Shrubs (SOIL CAP: 3 FEET OR GREATER)

Abelia x grandifolia	Glossy Abelia	Mahonia aquifolium 'Compacta' - Compact Oregon Grape	
Acer circinatum	Vine Maple	Oemleria cerasiformis	Indian plum
Andromeda polifolia	Bog Rosemary	Physocarpus capitatus	Western Ninebark
Arcostaphylos uva-ursi	Kinnikinnik	Rosa Gymnocarpa	Baldhip Rose
Azalea sp*	Azaleas	Rhododendron sp.*	Rhododendrons
Berberis Thunbergii*	Japanese Barberry	Sambucus cerulean	Blue elderberry
Clethra alnifolia	Summersweet Clethra	Sambucus racemosa	Red elderberry
Cornus alba*	Dogwood	Symphoricarpos albus	Snowberry
Cornus sericea*	Redosier Dogwood	Vaccinium corymbosum	Highbush blueberry
Deutzia gracilis	Slender Deutzia	Viburnum davidii -	Davids Viburnum
Euonymus fortunei*	Wintercreeper Euonymus	Vaccinium ovatum	Evergreen huckleberry
Gaultheria shallon	Salal	Viburnum lantana	Wayfaring Tree Viburnum
Hamamelis mollis*	Chinese Witchhazel	Viburnum opulus*	European Cranberrybush
Hamamelis Virginia	Witch Hazel		
Kalmia latifolia	Mountain Laurel		
Lonicera japonica*	Japanese Honeysuckle		

Ground Cover (SOIL CAP: 2 FEET OR GREATER)

The following list includes anticipated ground cover for the site. However, other perennial herbaceous plants, annual flowers, grasses, sedges, ferns, and mosses are acceptable as well.

Aruncus dioicus	Goat's Beard	Helictotrichon sempervirens	Blue Oat Grass
Belchnum spicant	Deer fern	Miscanthus Sinensis	Maiden Grass
Calluna vulgaris*	Scotch Heather	Pennisetum alopecuroides	Fountain Grass
Camassia quamash	Common Camas	Sesleria autumnalis	Autumn Moor Grass
Cornus Canadensis	Bunchberry	Anemone hybrida	Japanese Anemone
Dicentra Formosa	Bleeding Heart	Daffodil -	Narcissus
Fragaria chloensis	Coastal Strawberry	Echinacea purpurea -	Purple Cone Flower
Fragaria vesca	Woodland Strawberry	Hemerocallis -	Daylily
Maianthemum dilatatum	False Lily-of-the-Valley	Liriope muscari -	Lilyturf
Oxalis oregano	Wood sorrel	Rudbekia hirta -	Black-eyed Susan
Polystichum munitum	Sword fern	Sedum -	Stonecrop
Vancouveria hexandra	Inside-out flower	Lawn mixes	
Carex -	Sedges		
Deschampsia caespitosa	Tufted Hair Grass		

* Including varieties

Note: This list is not all inclusive and other plant material may be added with if they do not have a tap root.

Data for list was obtained from the following sources:

- US Forest Service Handbook 654 http://www.na.fs.fed.us/pubs/silvics_manual/table_of_contents.shtm
- US Forest Service Shrub list http://www.fs.fed.us/database/feis/plants/shrub/
- USDA Natural Resources Conservation Service – Plants Data Base- http://plants.usda.gov/index.html
- *The Complete Plant Selection Guide for Landscape Design* by Marc C. Stoecklein

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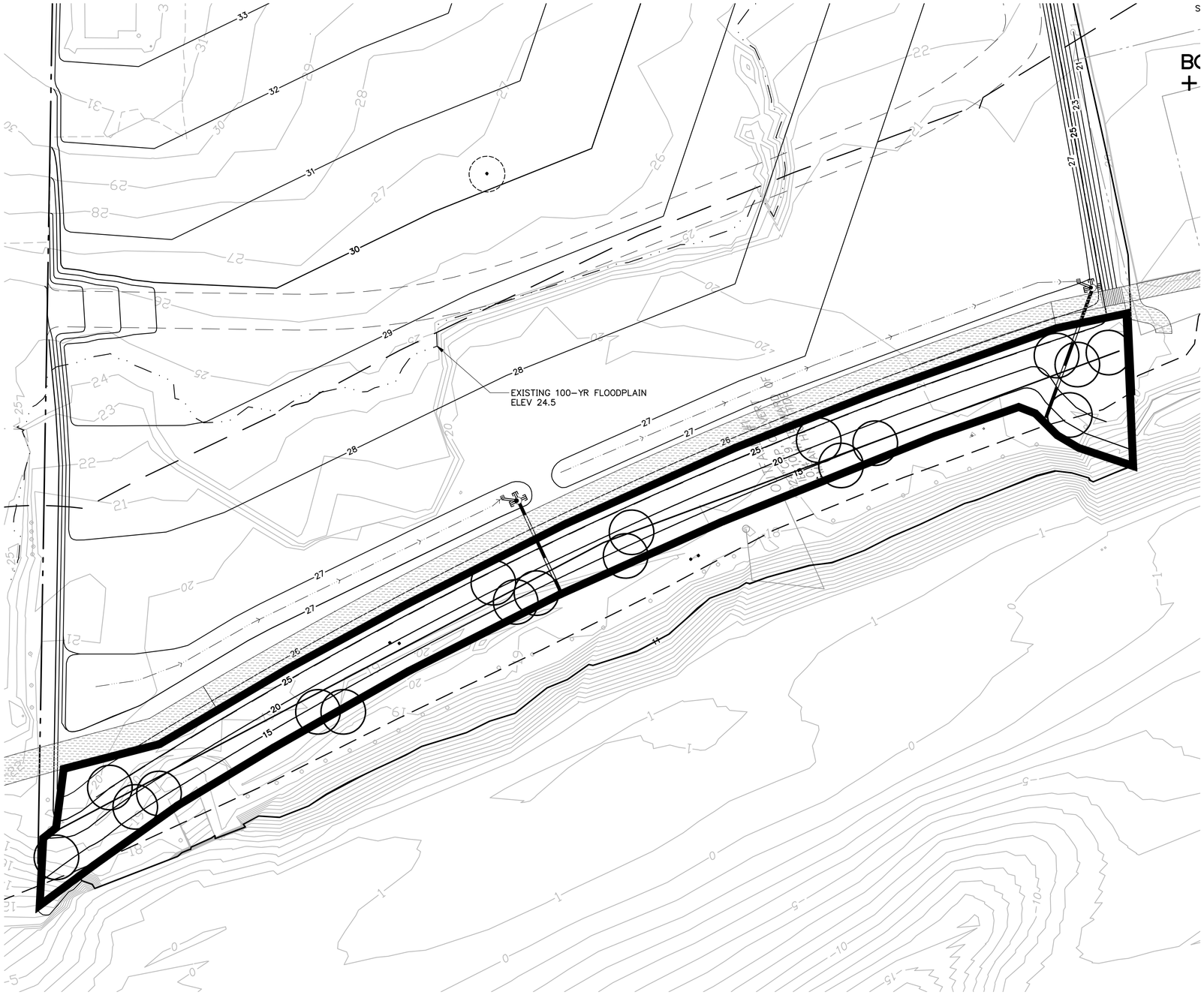


NOTES

AREA TO BE PLANTED ALONG 2:1 SLOPE WEST OF CONCRETE TRAIL ALONG SLOPE FACE SPECIFIC PLAN TO FOLLOW

- TOTAL AREA TO BE PLANTED = 25,690 SQUARE FEET
- TREES = 60 PLANTS PLACED IN GROUPS, 1 GALLON CONTAINERS
- SHRUBS = 350 PLANTS GROUPED IN DRIFTS (AVG 6-FOOT ON CENTER), 1 GALLON CONTAINERS
- GROUNDCOVER = 440 PLANTS GROUPED IN CLUSTERS (AVG 30" ON CENTER), 4" POTS
- HYDROSEED UNDER ALL PLANTS WITH ANNUAL RYE GRASS
- IRRIGATION = TEMPORARY OVER FIRST 3 YEARS

SPECIES:

TREES

- SALIX LASIANDRA / PACIFIC WILLOW
- SALIX SCOULERIANA / SCOULER WILLOW
- SALIX SITCHENSIS / SITKA WILLOW
- THUJA PLICATA / WESTERN RED CEDAR

SHRUBS

- MAHONIA AQUIFOLIUM 'COMPACTA' / COMPACT OREGON GRAPE
- OEMLERIA CERASIFORMIS / INDIAN PLUM
- SYMPHORICARPOS ALBUS / SNOWBERRY
- VACCINIUM OVATUM / EVERGREEN HUCKLEBERRY

GROUNDCOVER

- ANEMONE DELTOIDEA / WESTERN WHITE ANEMONE
- ATHYRIUM FILIX-FEMINA / LADY FERN ?
- DESCHAMPSIA CESPITOSA / TUFTED HAIRGRASS
- FRAGARIA VESCA / WOOD STRAWBERRY
- IRIS TENAX / OREGON IRIS

1 L1.0 PLANTING PLAN - CELL 3
1" = 40'

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: BARBIERI & ASSOCIATES INC. DATE: 3-30-2010

REVISED PER MFA COMMENTS- MAY 27, 2010
SUBMITTED TO ECOLOGY - APRIL 14, 2010

GROUP MACKENZIE
Civil Engineering
Structural Engineering
Transportation Planning
Landscape Architecture
Architecture
Interior Design
Land Use Planning
Portland OR 503.224.9560
Vancouver WA 360.695.7879
Seattle WA 206.749.9993

Client

Port of Ridgefield

Project
CELLS 3 AND 4
INTERIM ACTION

RIDGEFIELD, WA

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
PLANTING PLAN
CELL 3

DRAWN BY: MJS/DAH

CHECKED BY: DGL

SHEET:

L1.0

JOB NO. 2050304.00

2050304\00\CIVIL\304L1-0.DWG:3624 MJS 05/27/10 17:00 1:40

APPENDIX G

ECOLOGY-APPROVED PLANTING LIST

Plants without a Tap Root List

Trees

Abies concolor	White Fir
Acer japonicum*	Japanese Maple
Acer macrophyllum	Big-Leaf Maple
Acer palmatum*	Japanese Maple
Acer rubrum*	Red Maple
Betula papyrifera*	Paper Maple
Betula pendula	Weeping Birch
Carpinus betulus*	European Hornbeam
Cercidiphyllum japonicum	Katsuratree
Cornus florida	Flowering Dogwood
Fagus sylvatica*	European Beech
Fraxinus pennsylvanica*	Green Ash
Larix occidentalis	Western Larch
Picea pungens*	Colorado Spruce
Picea sitchensis	Sitka Spruce
Platanus x acerfolia	London Plane Tree
Populus balsamifera	Black Cottonwood
Prunus emarginata	Bitter Cherry
Prunus serrulata	Japanese Flowering Cherry
Psuedotsug menziesii	Douglas Fir
Salix sp.	Willows
Styrax japonicas	Japanese Snowball
Thuja occidentalis*	Arborvitae
Thuja plicata	Western Red Cedar
Tilia cordata	Little Leaf Linden

Shrubs

Abelia x grandifolia	Glossy Abelia
Acer circinatum	Vine Maple
Andromeda polifolia	Bog Rosemary
Arcostaphylos uvu-ursi	Kinnikinnik
Azalea sp*	Azaleas
Berberis Thunbergii*	Japanese Barberry
Clethra alnifolia	Summersweet Clethra
Cornus alba*	Dogwood
Cornus siricea*	Redosier Dogwood
Deutzia gracilis	Slender Deutzia
Euonymus fortunei*	Wintercreeper Euonymus
Gautheria shallon	Salal
Hamamelis mollis*	Chinese Witchhazel
Hamamelis Virginia	Witch Hazel
Kalmia latifolia	Mountain Laurel
Lonicera japonica*	Japanese Honeysuckle
Mahonia aquifolium 'Compacta' - Compact Oregon Grape	
Oemleria cerasiformis	Indian plum
Physocarpus capitatus	Western Ninebark
Rosa Gymnocarpa	Baldhip Rose
Rhododendron sp.*	Rhododendrons
Sambucus cerulean	Blue elderberry
Sambucus racemosa	Red elderberry
Symphoricarpos albus	Snowberry
Vaccinium corymbosum	Highbush blueberry
Viburnum davidii -	Davids Viburnum
Vaccinium ovatum	Evergreen huckleberry
Viburnum lantana	Wayfaring Tree Viburnum
Viburnum opulus*	European Cranberrybush

Ground Cover

The following list includes anticipated ground cover for the site. However, other perennial herbaceous plants, annual flowers, grasses, sedges, ferns, and mosses are acceptable as well.

Aruncus dioicus	Goat's Beard	Helictotrichon sempervirens	Blue Oat Grass
Belchnum spicant	Deer fern	Miscanthus Sinensis	Maiden Grass
Calluna vulgaris*	Scotch Heather	Pennisetum alopecuroides	Fountain Grass
Camassia quamash	Common Camas	Sesleria autumnalis	Autumn Moor Grass
Cornus Canadensis	Bunchberry	Anemone hybrida	Japanese Anemone
Dicentra Formosa	Bleeding Heart	Daffodil -	Narcissus
Fragaria chiloensis	Coastal Strawberry	Echinacea purpurea -	Purple Cone Flower
Fragaria vesca	Woodland Strawberry	Hemerocallis -	Daylily
Maianthemum dilatatum	False Lily-of-the-Valley	Liriope muscari -	Lilyturf
Oxalis oregano	Wood sorrel	Rudbekia hirta -	Black-eyed Susan
Polystichum munitum	Sword fern	Sedum -	Stonecrop
Vancouveria hexandra	Inside-out flower	Lawn mixes	
Carex -	Sedges		
Deschampsia caespitosa	Tufted Hair Grass		

* Including varieties

Note: This list is not all inclusive and other plant material may be added with if they do not have a tap root.

Data for list was obtained from the following sources:

- US Forest Service Handbook 654 http://www.na.fs.fed.us/pubs/silvics_manual/table_of_contents.shtm
- US Forest Service Shrub list http://www.fs.fed.us/database/feis/plants/shrub/
- USDA Natural Resources Conservation Service – Plants Data Base- http://plants.usda.gov/index.html
- *The Complete Plant Selection Guide for Landscape Design* by Marc C. Stoecklein

APPENDIX H

SEPA CHECKLIST

SEPA Environmental Checklist
Cells 3 and 4—Lake River Industrial Site Interim Action Work Plan for Soils

WAC 197-11-960 Environmental checklist

A. BACKGROUND

1. Name of proposed project, if applicable:

Cells 3 and 4—Lake River Industrial Site (LRIS) Interim Action Work Plan for Soils

2. Name of applicant:

Port of Ridgefield

3. Address and phone number of applicant and contact person:

Brent Grening, Executive Director
Port of Ridgefield
PO Box 55
111 W. Division Street
Ridgefield, WA 98642
Tel: (360) 887-3873

4. Date checklist prepared:

April 21, 2010

5. Agency requesting checklist:

Washington State Department of Ecology (Ecology)

6. Proposed timing or schedule (including phasing, if applicable):

Approval from Ecology is required before the start of the interim action. The Port anticipates proceeding with the excavation activities in summer 2010 at the conclusion of the State Environmental Protection Act (SEPA) comment period for the soil interim action in Cells 3 and 4. The project is expected to be completed by fall 2010.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

The interim action is part of the larger cleanup of the LRIS. This work is being conducted consistent with the requirements of Ecology Agreed Order No. 01TCPSR-3119 (the Order). The interim action addresses soil contamination "hot spots" in Cells 3 and 4 of the LRIS and the placement of a soil cap on these cells. Future activities at the project site will include soil and groundwater monitoring, and additional remedial actions for other portions of the LRIS, including upland capping and bank remediation of Cell 2 planned for 2011. Final site cleanup actions will be determined as part of the remedial investigation and feasibility study (RI/FS) process required by the Order.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Substantial environmental documentation has been prepared for the LRIS regarding the soil and groundwater contamination caused by a former Port tenant, Pacific Wood Treating Company.

Applicable to this requested action, a draft Cell 3 and 4 Interim Action Work Plan for Soil, dated April 14, 2010, has been prepared. Documents that were used to prepare the Interim Action Work Plan for soils on Cells 3 and 4 were:

- Volume I—RI work plan for Port LRIS (MFA, 2004b)
- Volume II—Cell 3 RI/FS work plan for Port LRIS (MFA, 2004a) Cell 3 RI and risk assessment report (MFA, 2007)
- Draft Cell 3 FS report (MFA, 2008)
- Boundary soil sampling results (MFA, 2009a)
- Draft Cell 4 RI/FS report (MFA, 2009b)

The following reports are available to the public at the Port office:

- Cell 4 Remedial Investigation and Feasibility Study Report. Prepared for the Port of Ridgefield. Maul Foster & Alongi, Inc., Vancouver, Washington. April 27, 2009.
- Draft Cell 3 Feasibility Study Report. Prepared for the Port of Ridgefield. Maul Foster & Alongi, Inc., Vancouver, Washington. April 21, 2008.
- Cell 3 Remedial Investigation and Risk Assessment Report. Prepared for the Port of Ridgefield. Maul Foster & Alongi, Inc., Vancouver, Washington. February 23, 2008.
- Remedial Investigation Workplan for Port of Ridgefield Lake River Industrial Site. Prepared for the Port of Ridgefield. Maul Foster & Alongi, Inc., Vancouver, Washington. July 2, 2004.

9. *Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.*

There are no pending applications for proposals directly affecting this project. However, the Port is moving forward with permits for future development. This interim action is discrete from the development, however, conditions of these permits, if known prior to implementation of the interim action will be incorporated into construction.

10. *List any government approvals or permits that will be needed for your proposal, if known.*

The proposed action will be conducted as an interim action under the Order within the authority of the state Model Toxics Control Act (MTCA). The proposed action is exempt from the procedural requirements of state and local permits that would otherwise be required, per Revised Code of Washington (RCW) 70.105D.090. However, the proposed action is required to demonstrate substantive compliance with appropriate state and local permits. These include: SEPA review; NPDES Stormwater Permit for Construction Activities; shorelines and critical areas; and the City of Ridgefield drainage approvals and building and construction permits, including grading.

11. *Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain*

aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The proposed project lies on the LRIS, a former wood-treating facility that is now a MTCA cleanup site (see Figure 1). The Port and Ecology have entered into the Order to investigate and develop a cleanup action plan for the site. Draft RIs that delineated the nature and extent of contamination in Cells 3 and 4 and draft FSs that evaluated remedial action alternatives have been submitted to Ecology. This interim action addresses hot spots of soil contamination and capping in Cells 3 and 4 and will reduce risks to human health and the environment.

The project involves excavation of contaminated soil in six discrete locations in Cells 3 and 4 (see Figure 2) on the LRIS. This work is being conducted consistent with the requirements of the Order. Approximately 148 cubic yards of material will be excavated and disposed of at Chemical Waste Management, a Subtitle C landfill in Arlington, Oregon, or at the Aragonite incineration facility in Aragonite, Utah, depending on the results of the waste profiling. Cell 3, formerly referred to as the south pole yard, was used to store treated lumber. Cell 4, formerly referred to as the north pole yard, was used to store untreated lumber and to peel poles. Soil excavation will be conducted around sample locations where soil analysis indicated that concentrations of indicator hazardous substances exceed remediation levels. Four excavation locations have been identified on Cell 3 and two excavation areas have been located on Cell 4. Approximate volumes of excavated soil will total 140.7 cubic yards on Cell 3 and 7.4 cubic yards on Cell 4. The final extent of excavation will be based on results from confirmation samples in the excavated area.

The Port is proposing to complete some of the excavations in a portion of Cell 3 owned by the Union Pacific Railroad (UP). The excavations on the UP property will occur only if UP is in agreement with the Interim Action Work Plan and Ecology approves the plan. The excavated material will temporarily be stockpiled or placed in drop boxes for profiling. After the soil has been profiled it will be transferred to an approved off-site facility. The excavations will be backfilled following the completion of confirmation sample analysis.

Following soil excavation, site grading will be completed in preparation for soil cap installation. In Cell 3, approximately 7,400 cubic yards of soil will be removed east of the ordinary high water elevation and used to regrade the site before clean fill is placed on site. Approximately 41,000 cubic yards of fill will be imported and placed on Cell 3 and 28,000 cubic yards of clean fill will be imported and placed on Cell 4. The imported clean fill will cap over impacted surface soil. A demarcation layer (e.g., geotextile fabric) will be placed on the graded surface before covering with clean fill. The imported clean fill will come from the Washington State Department of Transportation construction at the new interchange on Interstate 5 at 269th Street (Pioneer Street). To protect the cap and facilitate development, fill material will be used to raise the site surface above the 100 year flood plain.

12. *Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not*

required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The LRIS occupies approximately 41 acres and is situated along Lake River and on the west side of downtown Ridgefield. The Lake River property is located in the northwest quarter of the northeast quarter of section 24, township 4 north, range 1 west of the Willamette Meridian (see Figure 1).

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other . . . . . .

The property is primarily flat. The only area with steep slopes is the river embankment.

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope on the LRIS is approximately 25 to 30 percent in grade. However, the excavation areas are generally flat.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

The property is located on Sauvie Series soils, according to the U.S. Department of Agriculture Soil Conservation Service soil typing for Clark County. The specific soil type is Sauvie silt loam 3 to 8 percent slopes. Most of the material that will be excavated as part of this project consists of sandy gravel fill that was historically placed on the property.

Investigations of soil and groundwater contamination have been conducted on the LRIS since 1985. Analytical testing of soil samples in Cells 3 and 4 has identified concentrations of the following indicator hazardous substances above interim remediation levels: arsenic, dioxins/furans, and carcinogenic polycyclic aromatic hydrocarbons. Soil at the sample locations that exceeds remediation levels will be removed as part of the Interim Action Work Plan.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

According to Clark County Geographic Information Systems (GIS) mapping, there are no historical, active, or potentially unstable slopes in the proposal vicinity.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

The project involves excavation of contaminated soil in six locations on the LRIS in Cells 3 and 4 (see Figure 2). The excavation will remove contaminated material and reduce risks to environmental and public health. The material that will be excavated consists of sandy gravel fill that was historically placed on the site. A total of approximately 148 cubic yards of material will be excavated and disposed of at Chemical Waste Management, a Subtitle C landfill in Arlington, Oregon, or at the Aragonite incineration facility in Aragonite, Utah, depending on the results of the waste profiling. Table 1 identifies the locations and volumes of excavation.

Table 1. Proposed Interim Action Details

Location	Initial Excavation Dimensions (feet)	Approx. Volumes (cubic yards)	Indicator Hazardous Substances
Cell 3			
MW-9S	20x20, 1 foot deep	14.8	Arsenic and cPAHs
SPY-01A	20x20, 2 feet deep	29.6	cPAHs
SPY-01B	20x20, 6 feet deep	88.9	Arsenic
SS-7	20x10, 1 foot deep	7.4	Arsenic and dioxins/furans
Cell 4			
SS-4B	10x10, 1 foot deep	3.7	Dioxins/furans
SS-30	10x10, 1 foot deep	3.7	Dioxins/furans

In Cell 3, approximately 7,400 cubic yards of soil will be removed east of the ordinary high water elevation and used to regrade the site before clean fill is placed on site. Approximately 41,000 cubic yards of clean fill will be imported and placed on Cell 3 and 28,000 cubic yards of clean fill will be imported and placed on Cell 4 as a soil cap.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Erosion is expected to be limited because of the scope of excavation activities and the topography of the site. Most of the proposed excavations are shallow and will not need sloped sides or shoring. The deeper excavation at SPY-01B (6 feet) will be completed with sloped sides. Best management practices will be implemented to address any potential erosion and sediment control issues.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The site will not be covered with impervious surface as a result of this project.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

An Erosion and Sediment Control Plan is included as part of the proposed plans using best management practices for inlet protection, perimeter and site sediment control, gravel construction entrances, etc. All erosion and sediment control measures are required to be in place prior to any disturbance caused by clearing and grading activities. Temporary and permanent sediment control measures have been identified to control erosion. Precautions will be taken during the excavation to make sure that contaminated soils are contained. Once soil is removed from the excavation, it will be temporarily stockpiled for profiling. Soil stockpile areas will be placed on impermeable liners and will be covered and secured at the end of each workday. Before placing liners, the contractor will clear the existing ground surface of debris and sharp objects. Soil stockpile covers will be secured to prevent displacement by wind as well as from contact with precipitation. Berms will be constructed around stockpiles to prevent run-on and runoff.

Truck loading will take place adjacent to stockpiles or excavations, just outside designated exclusion zones. Trucks will be loaded in a manner that prevents spilling or tracking of contaminated soil. Loose material that falls onto the truck exterior during loading will be removed before the truck leaves the loading area. Any material collected on the ground surface in the loading area will be placed back into the truck.

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, and industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Short-term air emissions are expected to be limited to diesel and gasoline engine emissions from trucks and other heavy equipment being used for excavation, backfilling, and disposal of material. No long-term air emissions from this proposed action will occur.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No. Sources of air emissions in the project area include vehicle and rail traffic. These emissions will not affect the proposal. These sources are minor and are not likely to create any adverse impacts.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

If visible dust is created during excavation, water will be sprayed over the work area to control it. Covers will be placed over soil stockpile areas to prevent displacement by wind.

3. Water

a. Surface:

1) *Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.*

   Lake River and Carty Lake are year-round water bodies in close proximity to the LRIS (see Figure 2). Lake River flows from Vancouver Lake (approximately 8 miles south) to the Columbia River (approximately 2.5 miles to the north). Lake River is tidally influenced along its entire length. Under certain conditions the direction of flow changes either south or north for weeks at a time. The change in flow direction depends on tidal elevation, discharge, the water level in the Columbia River and in Vancouver Lake, and inputs to Lake River from other streams (e.g., Salmon Creek).

   Carty Lake is recharged by rainwater and is partially connected to Gee Creek during the wet months. As Gee Creek enters the Carty Unit of the Ridgefield National Wildlife Refuge, it spreads into a system of wetlands and lakes. Eventually, near the northern end of the unit, the channel reestablishes and flows to the Columbia River, near the mouth of Lake River.

2) *Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.*

   In Cell 3, approximately 7,400 cubic yards of soil will be removed east of the ordinary high water elevation and used to regrade the site before clean fill is placed on site. Off-site soils will be imported and placed on Cells 3 and 4 above the impacted surface soil. Figure 2 designates the location of the Lake River and the location of the 100-year floodplain.

3) *Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.*

   None.

4) *Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.*

   The proposed project will not require surface water withdrawals.

5) *Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.*

The proposed hot spot excavation areas are not within the 100-year floodplain. Bank excavation on Cell 3 and the placement of a portion of imported soils on Cell 3 will be within the 100-year floodplain (Figure 2).

6) *Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.*

The proposal does not involve the discharge of waste materials to surface waters.

b. *Ground:*

1) *Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.*

The proposal does not involve the withdrawal or discharge of water to ground waters. The soils that will be excavated are located above typical groundwater elevations.

2) *Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.*

The proposal does not require the use of septic systems or discharging of waste material into the ground.

c. *Water runoff (including stormwater):*

1) *Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.*

The proposed excavation and soil cap areas are unpaved, and stormwater generally infiltrates into the subsurface in these areas. However, some of the stormwater sheet flows to catch basins. Once stormwater enters the stormwater system, it flows to Outfalls 1 and 3 along Lake River. The excavation areas will create depressions that will not allow stormwater to discharge to the stormwater system. Therefore, while the excavations are completed, stormwater in the project area will not enter water bodies.

Once the excavations are backfilled, rainwater will either infiltrate or sheet flow toward the stormwater system.

The project will include the removal of an existing stormwater outfall on Cell 3 and replacing it with two outfalls into Lake River. There are no existing stormwater outfalls on Cell 4 and there are no outfalls planned as part of this project. Stormwater in Cell 4 will be routed to a new conveyance system which will transport stormwater to an existing outfall in Cell 2.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Waste materials are not likely to enter ground or surface waters as a result of this proposed work. Measures such as placing impermeable layers beneath soil stockpiles, covering stockpiles to prevent contact with rainwater, creating berms around stockpiles, and sweeping areas where dump trucks are loaded will prevent waste materials from entering surface or ground waters.

3) Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

Measures will be implemented to prevent precipitation from contacting the excavated soils. Soil stockpiles will be placed on impermeable liners and will be covered and secured at the end of each workday. Before placing liners, the contractor will clear the existing ground surface of debris and sharp objects. Soil stockpile covers will be secured against displacement by wind and to prevent contact between precipitation and excavated soils. Berms will be constructed around stockpiles to prevent run-on and runoff.

Additional erosion and sediment control measures have been identified and will be included in the Stormwater Pollution Prevention Plan (SWPPP).

4. Plants

a. Check or circle types of vegetation found on the site:

X deciduous tree: alder, maple, aspen, other

X evergreen tree: fir, cedar, pine, other

X shrubs

X grass

_____ pasture

_____ crop or grain

_____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other

_____ water plants: water lily, eelgrass, milfoil, other

_____ other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

Grass and invasive plants, such as Himalayan blackberry and black cottonwood, that are growing on site.

c. List threatened or endangered species known to be on or near the site.

No federally listed threatened or endangered plant species are expected to occur within the project area, based on searches of the Washington State Department of Natural Resources Natural Heritage Data System and Clark County GIS database.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Once the clean soil cap has been placed on the site, it will be vegetated per the Ecology-approved planting list.

5. Animals

a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

birds: hawk, heron, eagle, songbirds, other: osprey
mammals: deer, bear, elk, beaver, other: squirrels, coyotes
fish: bass, salmon, trout, herring, shellfish, other: carp

b. List any threatened or endangered species known to be on or near the site.

Coho salmon and winter steelhead are known or presumed to be present in Lake River. Both are listed as threatened species under the federal Endangered Species Act.

c. Is the site part of a migration route? If so, explain.

The LRIS is in the generally defined Pacific Flyway for migrating birds, a broad migratory corridor that extends from Alaska to Baja, California. The property is also in close proximity to the Ridgefield National Wildlife Refuge.

Lake River is used as a migration corridor for coho salmon and winter steelhead.

d. Proposed measures to preserve or enhance wildlife, if any:

No such measures are necessary or proposed as part of this project.

6. Energy and natural resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Construction equipment will be operated with gasoline and diesel fuels.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

This project will not affect the potential use of solar energy by adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

No specific energy conservation features are included in this proposal.

7. Environmental health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

There is risk of exposure to contaminated soils as part of this excavation, so work will be conducted in compliance with a health and safety plan (HASP) for the LRIS. The project also involves the typical risks, such as vehicle leaks, from operation of construction equipment. To control these risks a construction SWPPP will be implemented.

1) Describe special emergency services that might be required.

No special emergency service requirements are anticipated.

2) Proposed measures to reduce or control environmental health hazards, if any:

Implementation of the HASP and construction SWPPP will minimize potential environmental health hazards. Contractors will be required to have current hazardous materials training and personal protective equipment.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Existing noise includes freight and passenger trains using the railroad tracks adjacent to the Lake River property. The noise will not affect the project.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

The proposed action will generate short-term noise from construction equipment and truck traffic. The project is scheduled to begin in summer

2010 at the end of the SEPA comment period for the soil interim action and be completed by fall 2010. The normal hours of operation on the site will be from 8:00 a.m. to 5:00 p.m.

3) Proposed measures to reduce or control noise impacts, if any:

Construction activities will be carried out in a manner consistent with the City of Ridgefield Municipal Code.

8. Land and shoreline use

a. What is the current use of the site and adjacent properties?

The LRIS property is currently used for light industrial activities and the Port's administrative, maintenance, and operations offices. A public boat launch ramp, parking area, and restrooms are located at the south end of this property. Existing uses adjacent to the property include the Ridgefield National Wildlife Refuge to the north, Lake River to the west, railroad tracks and single-family residences to the east, and a houseboat marina to the south.

b. Has the site been used for agriculture? If so, describe.

Historically, areas of the LRIS were used for agriculture. The earliest recorded uses include lumber mills along Lake River in the 1910s. Early aerial photographs from the 1930s, 1940s, and 1950s show that some areas of the LRIS may have been used for agriculture. Agricultural use completely ceased on the site in the 1960s when the Pacific Wood Treating Company began operation on the site.

c. Describe any structures on the site.

Structures existing on the LRIS include ten industrial buildings, primarily of wood frame construction with metal roofing and siding. One of the buildings (or structures) is a large tent used to house the steam-enhanced remediation system. A public restroom building of concrete block construction and metal roof is located at the boat launch property south of the LRIS. There is a public boat launch ramp on the boat launch property and a floating dock for canoe and kayak launch use on the LRIS at the west end of Division Street.

d. Will any structures be demolished? If so, what?

There are no existing structures on Cell 4. One existing structure on Cell 3 will be removed from the site. This is an office building currently used by a Port tenant. The Port is in the process of evaluating if any of the materials from the existing structures can be reused as a part of future Port development.

A bulkhead and pilings along Lake River in Cell 3 will be removed as part of the Interim Action.

e. *What is the current zoning classification of the site?*

According to the City of Ridgefield Zoning Map, the site is zoned for Waterfront Mixed Use Development (see Figure 3).

f. *What is the current comprehensive plan designation of the site?*

The current City of Ridgefield Comprehensive Plan designation for the site is Mixed Use.

g. *If applicable, what is the current shoreline master program designation of the site?*

The Clark County Shoreline Master Program designation for areas of the LRIS that fall within the shoreline jurisdiction is Urban. The City of Ridgefield has adopted the Clark County Shoreline Management Master Program.

h. *Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.*

The City of Ridgefield considers the following as critical areas in the municipal code: fish and wildlife habitat conservation areas, frequently flooded areas, geologic hazard areas, critical aquifer recharge areas, and wetlands. Based on Clark County GIS mapping and field observations, the project area does not contain fish and wildlife habitat conservation areas or wetlands. The project area does not meet criteria in the municipal code for landslide hazard or erosion hazard. The project area is in an area designated as moderate to high liquefaction susceptibility. The project area is within a Category 2 aquifer recharge area. Portions of the project area are located inside the 100-year floodplain.

i. *Approximately how many people would reside or work in the completed project?*

The project does not directly create housing or long-term employment.

j. *Approximately how many people would the completed project displace?*

A current tenant of the Port uses this site as a staging area for railcar repairs. There are up to five employees on the site on a part-time basis, as needed.

k. *Proposed measures to avoid or reduce displacement impacts, if any?*

The staff will be relocated to an alternative rail spur and the project will not result in job loss for the current tenant employees.

l. *Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any?*

The project is fully compatible with existing and projected land uses and plans of both the City and Port of Ridgefield. No additional compatibility measures are needed.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

Not applicable.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Not applicable.

c. Proposed measures to reduce or control housing impacts, if any?

Not applicable.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

No aboveground structures are proposed as part of this project.

b. What views in the immediate vicinity would be altered or obstructed?

No views would be altered or obstructed by this project. Soil stockpile areas will be temporary in nature and in place to be profiled for disposal purposes.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Soil stockpile areas will be temporary in nature and will be removed after the soils are profiled for disposal purposes.

11. Light and glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

No light or glare will be produced by the proposed project.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Not applicable.

c. What existing off-site sources of light or glare may affect your proposal?

There are no existing off-site sources of light or glare that will affect the proposed project.

d. Proposed measures to reduce or control light and glare impacts, if any:

No adverse impacts from light and glare will occur from this project, so no measures are proposed to reduce or control light and glare.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Lake River and the Columbia River provide boating, water skiing, and fishing opportunities near the property. A public boat launch ramp, parking area, and restrooms are located south of the LRIS. The Ridgefield National Wildlife Refuge provides opportunities for bird-watching, canoeing, kayaking, nature walks, and auto tours near the property.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No recreational uses will be displaced as a result of this proposal.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

No adverse impacts to recreation will result from this project; therefore, no measures to reduce impacts are proposed.

13. Historic and cultural preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

Clark County GIS records indicate no places or objects existing on the property included in this proposal that are listed on, or proposed for, national, state, or local preservation registers. Historic-preservation places are known to exist on the Ridgefield National Wildlife Refuge adjacent to the LRIS property.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

The proposed project will be conducted primarily in previously developed and disturbed areas. No known archaeological sites are located within the project area. The historic and cultural sites located on the Ridgefield National Wildlife Refuge, the Wapato Portage and the ancient Chinookan village known as Cathlapotle, which were visited by the Lewis & Clark Expedition in 1806, will not be impacted by this proposal.

c. Proposed measures to reduce or control impacts, if any:

As the bank excavation may encounter native soils below fill, the Department of Archaeology and Historic Preservation will be consulted. If required, the Port will contract an independent, qualified cultural resource firm to observe any excavation in native soils. In the event that any unknown archaeological resources are encountered during site work, project activities will be halted in the area of the find in accordance with RCW 27.53.060 (Archaeological Sites and Resources) and RCW 27.44.020 (Indian Graves and Records). A professional

archaeologist will be called in to assess the significance of the find and the Department of Archaeological and Historic Preservation in Olympia will be notified so that a course of action can be implemented.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

The LRIS is served by Division Street, which is a City of Ridgefield right-of-way.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

The site is not served by public transit, except for the C-Tran Ridgefield Express bus that runs between the Ridgefield Park & Ride located at NW 269th Street and NW 11th Avenue and the Salmon Creek Park & Ride at NE 134th Avenue and the I-5 freeway.

c. How many parking spaces would the completed project have? How many would the project eliminate?

The proposed project would not require any new parking spaces or eliminate existing parking spaces.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

The proposed project would not require any new roads. The project will however provide a replacement emergency access between Mill and Division Street for Port use.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The project will not use water, rail, or air transportation. Excavation will take place in the right-of-way of a railroad, pending permission from the UP. The site is adjacent to Lake River, which is used by recreational boaters.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

It is estimated that approximately six vehicle trips per day would be generated from the hauling of excavated material. The project is tentatively scheduled to begin in summer 2010 and be completed by fall 2010.

g. Proposed measures to reduce or control transportation impacts, if any:

The project would not create any permanent transportation impacts. Access to all facilities in the project environs would be unimpeded during construction.

15. Public services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

The proposed project will not create an increased need for public services.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Since there are no anticipated impacts, there are no proposed reduction or control measures.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

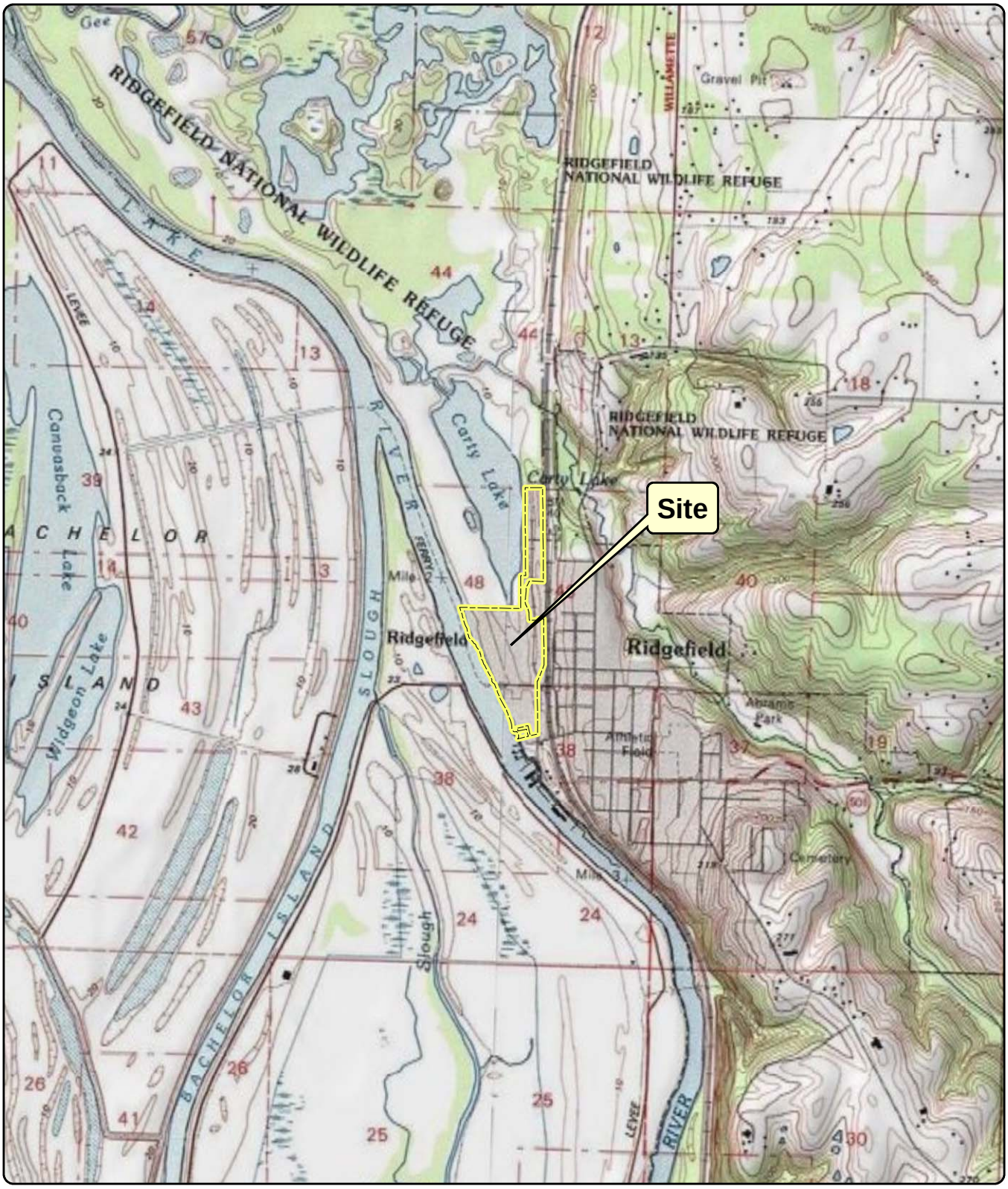
No utilities will be needed for the proposed project.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: .....

Date Submitted: May 21, 2010.....



Address: Lake River Industrial Site
111 W. Division Street, Ridgefield, WA 98642
Section: 24 Township: 4N Range: 1W Of Willamette Meridian

Source: Topographic Quadrangle obtained from ESRI, Inc.
NGS/USGS Topo.

Legend

Site Boundary

Figure 1
Site Vicinity

Port of Ridgefield
Ridgefield, Washington

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0 1,100 2,200
Feet

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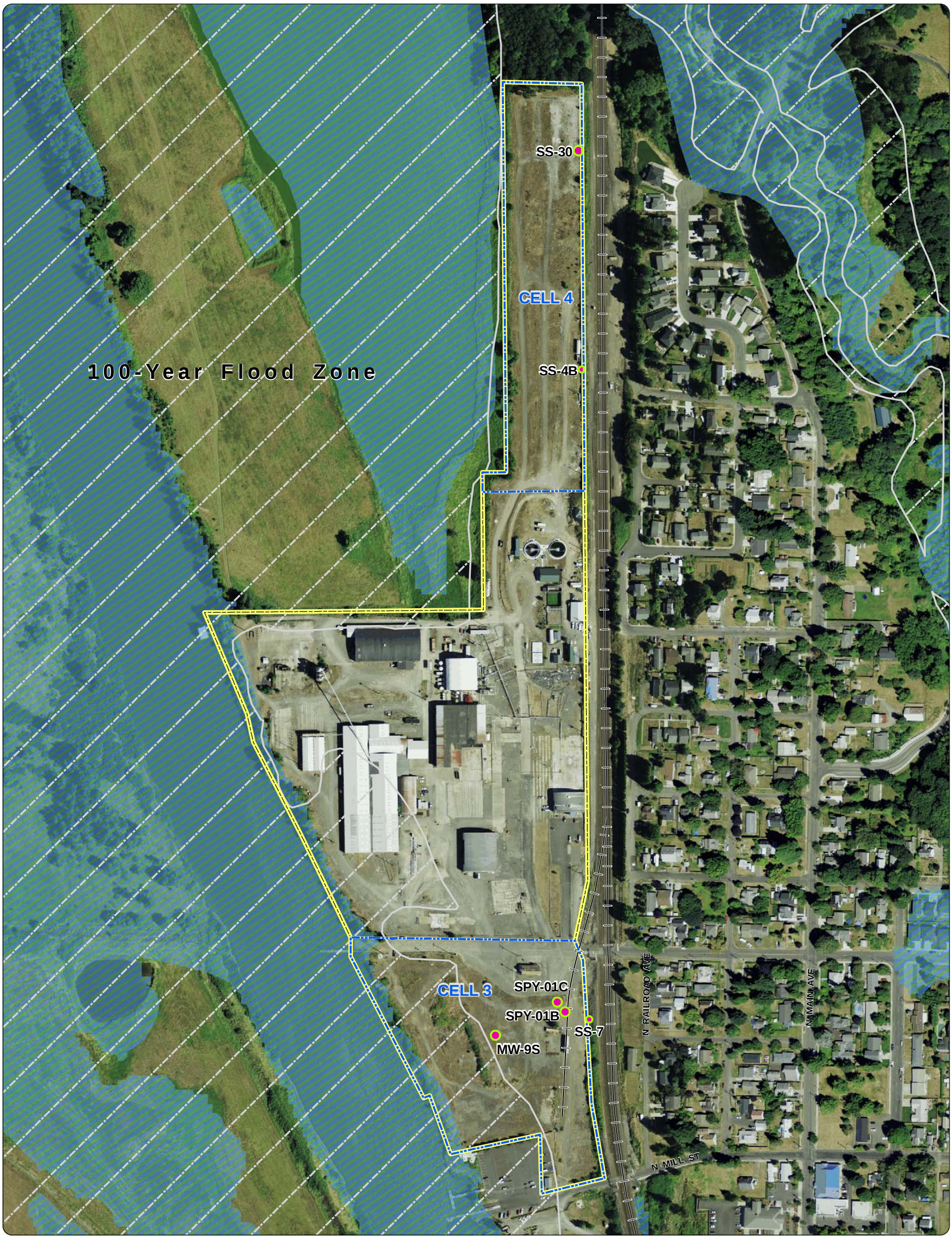

Source: Aerial photograph (2007) and railroad, flood, wetland and tax lot data (2008) obtained from Clark County

Legend

- Railroad
- Excavation Site
- Wetland
- 100-Year Flood Zone
- Site Boundary
- Cell Boundary

Figure 2
Plan View

Port of Ridgefield
Ridgefield, Washington

0 150 300
Feet

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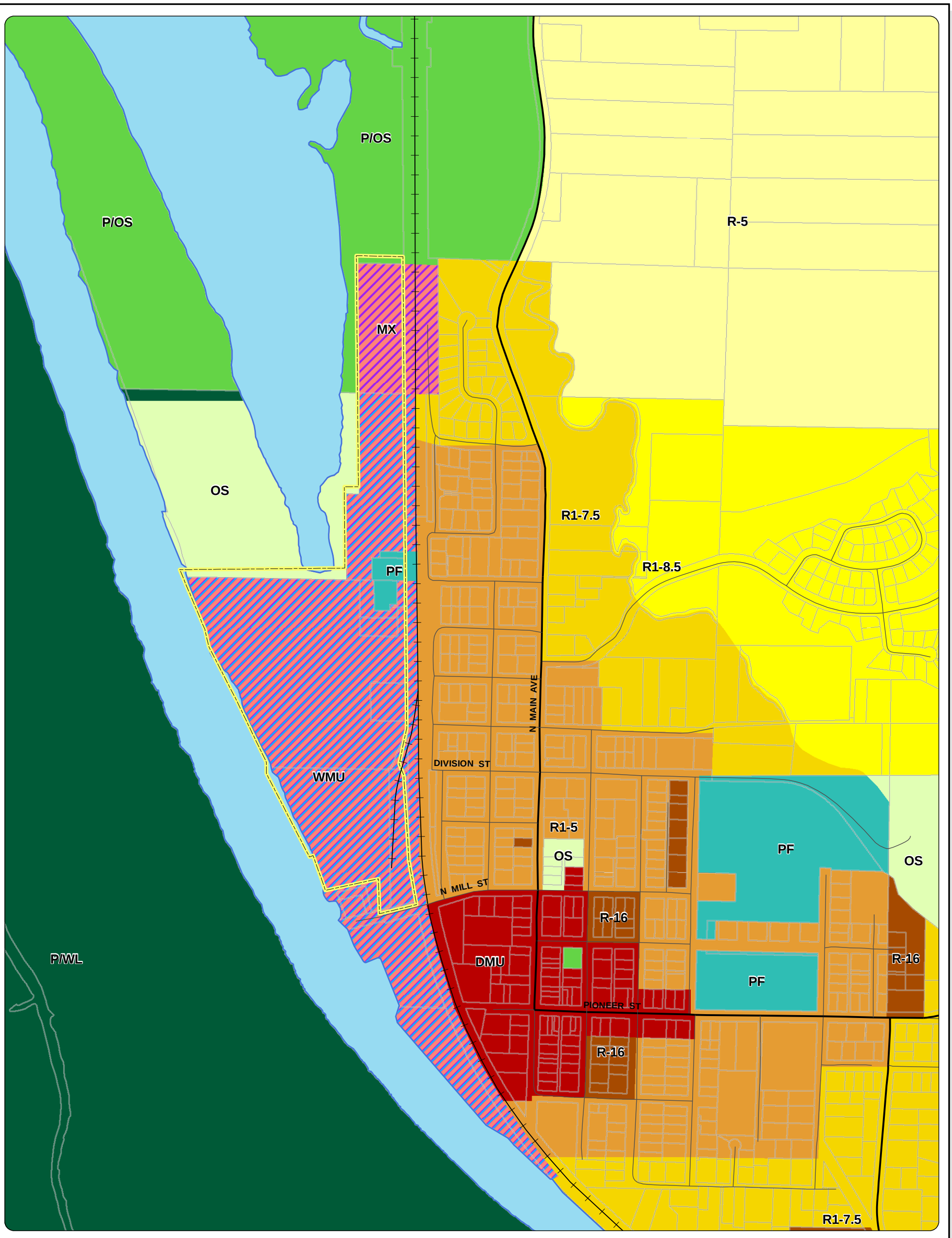

Source: Tax lot and zoning data (2008) obtained from Clark County

Legend

Railroad
Site Boundary
Tax Lot Boundary

Zone Description

- Rural-5
- R1-8.5
- R1-7.5
- R1-5
- R-16
- Schools/Public Facilities
- Mixed-Use
- Waterfront Mixed-Use
- Downtown Mixed-Use
- Open Space
- Parks/Open Space
- Parks/Wildlife Refuge

Figure 3
Land Use

Port of Ridgefield
Ridgefield, Washington

0 250 500
Feet

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