

LAKE RIVER REMEDY PREDESIGN SAMPLING REPORT

FORMER PACIFIC WOOD TREATING CO. SITE



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ACRONYMS AND ABBREVIATIONS

cm	centimeter
CUL	cleanup level
cy	cubic yard
dioxins	polychlorinated dibenzo dioxins and furans
draft RI/FS	former PWT site draft remedial investigation and feasibility study
Ecology	Washington State Department of Ecology
ENR	enhanced natural recovery
IDW	inverse-distance weighted/weighting
LRIS	Lake River Industrial Site
MFA	Maul Foster & Alongi, Inc.
MTCA	Model Toxics Control Act
ng/kg	nanograms per kilogram
NN	Natural Neighbor interpolation
PAH	polycyclic aromatic hydrocarbon
PCP	pentachlorophenol
Port	Port of Ridgefield
PSAP	predesign sampling and analysis plan
PSEP	Puget Sound Estuary Program
PWT	Pacific Wood Treating Company
QA/QC	quality assurance and quality control
RNWR	Ridgefield National Wildlife Refuge
SMS	sediment management standards
SRM	Puget Sound Sediment Reference Material
SWAC	surface-weighted average concentration
TEQ	toxicity equivalent
TOC	total organic carbon
TP	Thiessen polygon
USEPA	U.S. Environmental Protection Agency
WAC	Washington Administrative Code

1 INTRODUCTION

On behalf of the Port of Ridgefield (Port), Maul Foster & Alongi, Inc. (MFA) has prepared this document to summarize predesign sampling and analytical results and to delineate remedial action areas in Lake River offshore of the former Pacific Wood Treating Co. (PWT) site in Ridgefield, Washington (see Figure 1-1). PWT operated a wood-treating facility from 1963 to 1993 at the Port's Lake River Industrial Site (LRIS); historical operations resulted in sediment contamination in Lake River. This document has been prepared under the authority of Agreed Order No. 01TCPSR-3119 between the Port and Washington State Department of Ecology (Ecology) to satisfy the requirements of the Model Toxics Control Act (MTCA) and sediment management standards (SMS), and addresses the substantive requirements of Washington Administrative Code (WAC) 173-340, 350, and 360 (MTCA) and WAC 173-204 (SMS).

This report describes activities conducted to support the design of remedial actions targeting contaminated sediment in Lake River. The selected remedy includes dredging and disposal of contaminated sediment and enhancing natural recovery of remaining low-level and residual contamination through placement of clean sand. Lake River sediment characterization, cleanup level (CUL) development, and remedial alternatives evaluation are detailed in the former PWT site draft remedial investigation and feasibility study (draft RI/FS) (MFA, 2012a). This report provides information regarding environmental field sampling, sample handling and analysis, quality assurance protocols, and laboratory analytical results and interpretation. Further, the results are used to refine the remedial action area and to anticipate post-remedy conditions. Physical data collected and reported here will be used to evaluate sediment-handling methods and will be discussed in the initial remedial design report (MFA, forthcoming).

Sampling and reporting were conducted in accordance with the Ecology approved predesign sampling and analysis plan (PSAP) (Mercuri, 2012; MFA, 2012b); further sampling activities were generally consistent with current Puget Sound Estuary Program (PSEP) and U.S. Environmental Protection Agency (USEPA) protocols for sampling and analysis (PSEP, 1986, 1997a,b; USEPA, 1993) and standard USEPA methods based on USEPA test methods for evaluating solid waste, physical/chemical methods (also known as SW-846) requirements, as amended (USEPA, 1986). Sampling activities were consistent with guidance provided in Ecology's Sediment Source Control Standards User Manual, Sediment Sampling and Analysis Plan appendix (Ecology, 2008).

1.1 Background

The approximately 40-acre LRIS is located within the Ridgefield city limits at 111 West Division Street, Ridgefield, Washington (see Figure 1-2). The LRIS is the former location of the PWT facility; former operations involved pressure-treating wood products with oil-based solutions and water-based mixtures. Constituents released to environmental media included creosote, pentachlorophenol (PCP), copper, chromium, arsenic, zinc, and polychlorinated dibenzo dioxins and furans (collectively referred to as dioxins) (MFA, 2012a). The LRIS is bounded on the north by the Ridgefield National

Wildlife Refuge (RNWR), which includes Carty Lake; on the west by Lake River; on the east by the Burlington Northern Santa Fe Railway tracks, which separate the LRIS from residential areas; and on the south by a Port-owned marina. The Port-owned marina adjoins the privately owned McCuddy marina, which contains residences, including houseboats. The RNWR is also located on the west side of Lake River, across from the LRIS.

The draft RI/FS (MFA, 2012a) identifies contaminants, characterizes their nature and extent, identifies potential sources and exposure pathways, develops CULs, and evaluates possible remedial actions in Lake River. Contaminants in Lake River sediment include chlorinated dibenzo-p-dioxins and dibenzofurans (collectively referred to as dioxins), PCP, m&p-cresol, and polycyclic aromatic hydrocarbons (PAHs). Dioxin concentrations exceeding CULs in Lake River sediment are collocated with other contaminants exceeding applicable screening criteria, and cleanup actions directed at dioxins will also remediate other contaminants. Therefore, dioxins were the only chemical data collected during predesign activities, and only dioxin concentrations are evaluated to define remedial action areas.

The preferred remedy identified in the draft RI/FS (MFA, 2012a) involves dredging Lake River sediment and placing clean sand to enhance natural recovery in areas of residual and low-level contamination. Following are components of the remedy:

- Removal of historical infrastructure such as dolphins and pilings
- Removal of Lake River sediment to significantly reduce site-wide concentrations of dioxins and other contaminants (i.e., PCP, m&p-cresol, PAHs) above screening criteria
- Disposal of dredged material as nonhazardous material waste at a Subtitle D landfill facility
- Placement of sand to enhance the natural recovery of sediments in areas of low-level and residual contamination
- Stabilization of the lower bank¹

2 INVESTIGATION OBJECTIVES

The PSAP identified the chemical and physical sediment characterization required to design the Lake River cleanup action (MFA, 2012b). The primary investigation objectives of sampling and analysis conducted were:

- Delineation of the dredge prism and the enhanced natural recovery (ENR) area

¹ The upper portions of the bank are being addressed as part of an upland interim action currently under way.

- Characterization of sediment physical parameters to evaluate sediment retrieval, handling, and disposal methods

These objectives are discussed further below.

2.1 Remedial Action Area

The nature and extent of Lake River contaminants are generally well understood (MFA, 2012a). PCP, m&p-cresol, and PAH exceedances of screening criteria are well defined and are collocated with elevated dioxin concentrations. Dioxin concentrations are generally elevated close to shore and near historical outfalls, and decrease substantially within the top 2 to 3 feet of the mudline. However, additional sediment was collected at 21 stations to delineate the vertical and/or lateral extent of dioxins to support remedy (dredge and ENR) delineation.

To evaluate remedial options, a variety of dredge prism scenarios were presented in the draft RI/FS (MFA, 2012a). The scenarios were evaluated in terms of technical feasibility, cost, and anticipated post-remedial surface-weighted average concentrations (SWACs) using the Thiessen polygon (TP) interpolation method. The preferred alternative presented in the draft RI/FS involved removing sediment with dioxin toxicity equivalent (TEQs) greater than 30 nanograms per kilogram (ng/kg) and ENR placement in areas with dioxin TEQs over 5 ng/kg. Under this alternative, initial evaluations determined that the SWAC would be reduced to levels approaching the CUL of 5 ng/kg dioxin TEQ, and the remediation levels (based on ecological CULs) would be met. The TP method was also used to estimate initial dredge and ENR volumes.

The predesign dioxin data described in this report are used, together with the dioxin data collected during RI activities, to evaluate additional remedial action area scenarios and update estimates of the post-remedy SWAC. Because the predesign sampling resulted in greater sample density than what had been available for evaluation in the RI/FS, data evaluation methods beyond the TP approach used in the RI/FS are applied to refine the remedial action areas. In addition, the final remedial action area considerations include dredging logistics, feasibility, and river bottom characteristics.

2.2 Sediment Physical Characterization

Sediment physical properties within the anticipated dredge prism were collected to inform the design of the remedy and to refine remedial cost estimates. The information is used to evaluate slope stability, river hydrodynamics, sediment transfer, dredge production rates, volumes, and handling requirements. A full understanding of all of these elements is valuable, as sedimentation or erosion during dredge operations may impact the volume of dredged material, as well as the length of time it takes to reach the design grades. Physical samples were collected at six stations of varying sediment characteristics (e.g., percent fines).

In addition to geotechnical laboratory analysis, a pilot study was conducted using the sediment obtained during this sampling event to evaluate how the material will likely behave during dredging, handling, and disposal processes. The pilot study included physical manipulation of the sediment in order to simulate dredging and handling methods. The pilot study tests are intended to show how

the sediment will react to handling, stacking, drying, and amending, among other characteristics that can be observed and recorded. The information is provided in this report and is further evaluated and incorporated into the Initial Remedial Design Report (MFA, forthcoming).

3 SEDIMENT SAMPLING

3.1 Sampling Methods

MFA conducted sediment sampling on December 2, 3, and 4, 2012 at 21 stations. Sampling was conducted consistent with the Ecology-approved PSAP (MFA, 2012b), except as noted below. Marine Sampling Systems of Burley, Washington, supplied the vessel, vessel support crew, a Van Veen power grab sampler, and a Vibracore sediment sampler. A Shelby tube sampler with pole extensions was used for physical parameter sampling. Figure 3-1 and Table 3-1 show and summarize sample stations, respectively. Sample stations were identified in the PSAP; however, some locations were modified based on field conditions. The rationale for field adjustment of stations is summarized for surface sampling, subsurface sampling, and physical parameter sampling in Tables 3-2 through 3-4, respectively. Sampling methods for each collection technique are described below.

3.1.1 Surface Sediment Sampling

Surface sediment samples collected for dioxin and total organic carbon (TOC) analysis were retrieved using a Van Veen power grab sampler, consistent with historical Lake River remedial investigation surface sampling (Anchor and MFA, 2011; MFA, 2012a). Surface samples were collected at 13 locations (see Table 3-1). The grab sampler was deployed using a winch from the support vessel and was equipped with mesh screens and rubber flaps to minimize the loss of surficial, fine-grained sediments. The speed of the grab sampler's descent was controlled to minimize sediment disturbance. Upon retrieval of an acceptable sediment sample (i.e., greater than 10 centimeters [cm] of undisturbed sediment recovered), a photograph was taken and the substrate was described. Photographs are provided in Appendix A. Field observations are summarized in Table 3-2.

Following retrieval of an acceptable sediment sample, excess water was decanted from the Van Veen. Samples were collected from the top 10 cm of retrieved material; placed in a decontaminated, stainless steel bowl; and thoroughly homogenized with a decontaminated, stainless spoon. Sediment in contact with the sides of the sampler was not collected. The PSAP specified that two 8-ounce jars would be filled for each sample; however, three 4-ounce jars were filled at each sample location, as recommended by the test laboratory. Sample containers were submitted to the laboratory for analysis or archiving. All equipment was decontaminated in accordance with the PSAP.

3.1.2 Subsurface Sediment Sampling

Subsurface sediment sampling was conducted using a vibratory core sampler (Vibracore) for dioxin and TOC characterization. Use of vibracore sampling is consistent with historical Lake River remedial investigation subsurface sampling (Anchor and MFA, 2011; MFA, 2012a). A support vessel with the vibracoring equipment maneuvered to sample stations (see Table 3-3). Subsurface samples were collected at 20 locations (see Table 3-1). A decontaminated, thin-walled aluminum core tube 8 feet long was secured to the vibratory assembly and deployed from the vessel, using a winch. The vibracore assembly was lowered perpendicular to the water surface and allowed to penetrate into the sediment under the weight of the device, after which the vibrating motor was engaged. The vibracore unit operated until the maximum depth of the core barrel was achieved or refusal was encountered. The vibracore unit was then withdrawn from the sediment, using the vessel winch. Once back on the support vessel, the core tube was separated from the vibracore head unit; vibracore samples were accepted if a minimum of 5 feet of material was recovered, 75 percent core recovery relative to drive length was achieved, and core surface and core tube were intact. If the minimum amount of material was not recovered, a new core barrel was affixed to the vibracore head unit and the location was resampled or field-adjusted if necessary. In some cases, sediment marginally less than 5 feet in length and/or 75 percent recovery was accepted because of field constraints (see Table 3-3).

Following retrieval of an acceptable core, the core was cut slightly above the sediment line to allow excess water to escape. The core was then capped and stored in a vertical position for transport to the upland core processing station. Aluminum cores were placed horizontally on a flat work surface and cut longitudinally, using a saw. The cores were photographed (see Appendix B) and then described, noting features such as sheen, woody debris, and biological features (see Appendix C). Archaeological monitoring was conducted by Willamette Cultural Resource Associates during core processing (Appendix D). Each 1-foot increment of the core was sampled after inspection, with care being taken not to sample material in contact with the core. Each increment was thoroughly homogenized before placement into three 4-ounce jars. Designated samples were submitted to the laboratory for analysis or archiving. All equipment was decontaminated in accordance with the PSAP. Boring logs are provided in Appendix C.

For stations at which physical parameter testing was identified, remaining sediment from the top 3 to five 5 feet of the vibracore sample was collected in a 5-gallon bucket. The material was used to perform pilot tests for drying, handling, and other material behaviors.

3.1.3 Physical Parameter Sampling

Sediment sampling for physical parameters was conducted by manually advancing Shelby tubes through the river substrate. The Shelby tube sampling method allows for retrieval of a relatively undisturbed, i.e., in situ, sample. Shelby tube sampling procedures were performed in conformance with American Society for Testing and Materials D1587. The support vessel navigated to the six sample locations (see Table 3-1), and a 3-inch-by-36-inch Shelby tube secured to pole extensions was advanced through the sediment a minimum of approximately 2 feet. Once collected, the Shelby tube sample was wiped clean of loose sediment cuttings (if necessary) and the sample length was

measured. Drive depth was difficult to assess because of the presence of loose sediment at the sediment/water interface. Therefore, percent recovery was not measured; however, approximately 2 feet of material sufficient for analysis was collected. This process was repeated if there was a significant loss of sediment (see Table 3-4). The sample was sealed at each end and stored upright for transportation to the laboratory. All equipment was decontaminated in accordance with the PSAP.

3.2 Management of Investigation-Derived Waste

Excess sediment and decontamination fluids were collected in sealed containers and placed on the LRIS in an area undergoing remedial action. The disposed-of material will be capped consistent with the LRIS Cells 1 and 2 interim action plan (MFA, 2011). Personal protective equipment was disposed of in a sanitary landfill.

3.3 Sample Processing

Samples for dioxin and TOC analysis were submitted to the Ecology-approved Test America Laboratory of Seattle, Washington. Coolers were transported to the laboratory by overnight shipping service. Shelby tube samples for physical parameter testing were submitted to GeoDesign, Inc., of Portland, Oregon. Sediment collected for physical parameter bench testing was placed in sealed 5-gallon buckets for future use. Chain-of-custody documentation was prepared at the time of sampling and maintained throughout the sample handling and testing process; it is included in the laboratory analytical reports (see Appendix E).

3.4 Sample Laboratory Analysis

The PSAP identified samples for analysis or archiving, based on a tiered approach, with Tier I samples to be analyzed and Tier II through IV samples to be archived and released for analysis only if the corresponding sample was above a threshold. Samples were analyzed for dioxins by USEPA Method 1613B and for TOC by USEPA Method 9060.

Laboratory quality assurance and quality control (QA/QC) were maintained through the use of standard USEPA methods, based on USEPA test methods for evaluating solid waste, physical/chemical methods (also known as SW-846) requirements, as amended (USEPA, 1986). The laboratory met QA/QC requirements specified in the 2010 Dredged Material Management Program clarification paper (Hoffman and Fox, 2010). Two containers of Puget Sound Sediment Reference Material (SRM) were requested and received through Ecology. The SRM sample is matrix-specific, with known concentrations of dioxins that have been certified by the provider, Shaw Environmental, Inc. The SRM was prepared and analyzed with each batch of samples analyzed for dioxins. The SRM was assessed by comparing laboratory results to the certified performance criteria found in the document Puget Sound Sediment Reference Material: Requesting and Analyzing the SRM, and Reporting Data (COE, 2012).

Rinsate blanks collected from reusable equipment coming into direct contact with sediment samples, i.e., bowls and spoons, were submitted for analysis of dioxins by USEPA Method 1613B.

Field duplicates were collected at station LRIS-LR-130. Duplicate samples were collected for both surface and subsurface sediment locations. The field duplicates were prepared by dividing aliquots of a homogenized sample into two distinct samples for laboratory analysis.

3.5 Data Reduction, Validation, and Reporting

The laboratory data produced were independently reviewed by MFA for data quality (see Appendix F). Dioxin data are reported consistent with the attached Dioxin and Furan Analysis, Data Validation, and TEQ Calculation Rules memorandum (see Appendix G) included with the PSAP approved by Ecology (2012). Consistent with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840 (Data Submittal Requirements), data were submitted in both written and electronic formats.

4 RESULTS

The results of the predesign sampling, including delineation of the dredge prism and ENR area, are used to support the remedial design effort. Sample results are summarized in Table 4-1 (dioxins and TOC) and Table 4-2 (physical parameters). A summary of dioxin data collected during RI activities combined with the predesign samples collected in 2012 is provided in Table 4-3. The dataset summarized in Table 4-3 is used to evaluate remedial action areas and predict post-remedial conditions. The information provided in this report is further evaluated and incorporated into the initial remedial design report (MFA, forthcoming).

In developing initial estimates of dioxin extent and preliminary remedial areas, the draft RI/FS relied on the use of the TP interpolation method. The TP method was initially selected because of its simplicity and because insufficient data density precluded use of other interpolation methods. Predesign data collection increased data density such that more sophisticated and informative interpolation methods can be used. Inverse-distance weighting (IDW) and Natural Neighbor interpolation (NN) are commonly applied and predict sediment concentrations at a much finer resolution (e.g., for 1-by-1-foot cells) than TP (de Smith, 2008), enabling more precise development of dioxin concentration estimates and remedial action areas. These interpolation methods were evaluated (see Appendix H); IDW is selected as the interpolation methodology to carry forward for evaluating current dioxin extent, remedial actions, and post-remedial conditions.

4.1 Nature and Extent

Figure 4-1 shows dioxin data generated during remedial investigation and recent predesign sampling events for all stations and depth intervals analyzed. Figure 4-2 shows interpolated surface and subsurface concentrations based on IDW. The spatial distribution of dioxin concentrations is consistent with the conceptual site model (MFA, 2012a); sediment concentrations near historical outfalls are elevated and concentrations decrease significantly in nearshore areas not near outfalls, in the mid-channel, and in western portions of the river. Concentrations generally decrease significantly

with depth, with contamination occurring primarily in surface and shallow subsurface. To further verify the conceptual site model, Ecology requested analysis of a deeper sample at station LRIS-LR-132; the low dioxin TEQ (0.14 ng/kg) at 4 to 5 feet below mudline further supports the conclusion that subsurface sediment is not contaminated at this depth (Figure 4-1). In one case at station LRIS-LR-110, dioxin concentrations are generally similar over the 0-to-5-foot interval, with concentrations ranging from 46 to 79 ng/kg dioxin TEQ and with no indication of decreasing concentration with depth. However, dredging concentrations in surface and shallow subsurface are expected to result in the removal of the most significant mass of dioxins present in Lake River.

4.2 Remedy Delineation

The preferred remedy described in the draft RI/FS targets sediment exceeding 30 ng/kg dioxin TEQ for dredging, and subsequent ENR treatment (MFA, 2012a). Sediment exceeding 5 ng/kg in surface, but no more than 30 ng/kg, would receive ENR treatment only. See Figure 4-2 for areas above or below these thresholds in surface and subsurface sediment.

Remedial areas are shown in Figure 4-3 and were developed considering the following:

- Surface and subsurface remedial boundaries approximate the appropriate IDW contour (5 ng/kg or 30 ng/kg) based on a 10-by-10-foot grid; this grid size is appropriate to the approximate scale of construction equipment. Note that this approach is conservative, as IDW predicts slightly greater dioxin extent than NN in surface sediment (see Appendix H).
- Remedial areas account for Lake River bathymetry and construction feasibility. Nearshore dredge boundaries were generally determined by projection of a 3:1 horizontal to vertical slope down from the shoreline inflection point² to the required dredge depth; ENR boundaries near the shore were determined by the point where the shore slope transitions to less than a 5:1 horizontal to vertical slope. To estimate upper bound dredge and ENR volumes, nearshore boundaries were extended an additional 20 feet towards shore (i.e., east) or to +12 Columbia River Datum (approximating ordinary high water). Note that the final nearshore boundary may not extend as far as east and this boundary will be further refined in the Initial Remedial Design Report [IDR, (MFA, forthcoming)].
- In some cases remedial actions were slightly modified from strict adherence to the above rationale to maintain consistency with adjacent areas and/or measured concentrations. Figure 4-3 identifies all 10-by-10-foot areas for which remedial actions were reassigned based on best professional judgment.
- Dredge depth near LRIS-LR-110 is selected at 3 feet neatline for several reasons:

² The term “shoreline inflection point” in this document is meant to identify the point at which the 3:1 shore slope naturally transitions to a flatter slope.

- The lowest concentration (46 ng/kg) occurs in the 3-to-4-foot interval; an additional foot of sand will be placed here (i.e., a total of 2-feet of sand) to more effectively sequester remaining subsurface contamination.
- Construction realities constrain a significantly deeper dredge (e.g., 6 feet or more) than would occur in adjacent areas; a 3-foot neatline dredge is in line with dredge depth identified for surrounding areas, facilitating construction feasibility.
- Upland archeological finds offshore of LR-110 impede upland bank excavation that would be necessary for a dredge to extend beyond approximately 4 feet.

See Appendix H for additional detail on how the remedial action area is defined.

Based on the remedial action areas shown in Figure 4-3 and compaction correction factors, approximate neatline remedy volumes were estimated. Sediment compaction can occur during sampling due to the vibrating action of the Vibracore. Compaction results in a reduced length of recovered core compared to the depth of sediment penetrated by the coring device. Therefore, analytical results for one-foot core intervals may integrate sediment that, in situ, extends beyond the interval length measured after retrieval. A compaction correction factor was developed by dividing the penetration depth by the recovery length and then multiplying by the recorded depth of the sample as measured from the top of the core. Cores in areas where multiple deployments occurred due to low recovery (i.e. sediment falling out due to large granular cobbles or debris) were not included in the analysis. A measure of penetration depth to sediment recovery was averaged across cores resulting in a correction factor of 1.17 per foot.³ The compaction correction factor was applied to each dredge depth for an appropriate depth correction as follows: 1.17 for the 1-foot dredge area, 1.34 for the 2-foot dredge area, 1.51 for the 3-foot dredge area. What this means functionally is that, for example, to remove contamination that is observed in a sample collected 3-feet below the mudline, the neatline dredge is extended an additional 0.51 feet to account for compaction. The estimated dredge and ENR volumes are:

- 10,080 total cubic yards (cy) of neatline sediment removal (including 20 percent contingency); this includes:
 - 8,650 cy in the northern dredge unit
 - 1,430 cy in the southern dredge unit
- 6,110 cy of ENR sand in dredge areas (1 foot of ENR, including 20 percent contingency); this includes an additional foot of ENR in an area of approximately 600 square feet near LRIS-LR-110
- 7,740 cy of sand in ENR-only areas (1 foot of ENR, including 20 percent contingency)

³ Note that the compaction correction method does not account for other factors contributing to less recovery than penetration such as: the loss of sediment as the barrel is raised through the water column; the inability to see the core barrel encounter the sediment bottom, leading to an imprecise record of the starting depth; and non-linear compaction that might be observed in interbedded soft and hard sediment layers.

Note that remedial action areas are likely to decrease somewhat as the eastern boundary of the extent is refined during design. Additional construction details and data collection, including dredge bucket size, bucket reach, further compaction evaluation, and a preconstruction bathymetric survey, may also impact the estimates provided above. Note that overdredge volume (i.e., the amount of material that is removed beyond the target neatline surface due to dredging constraints on precision) is not accounted for in the estimates above. These factors will be further specified in the Initial Remedial Design Report (MFA, forthcoming).

4.3 Sediment Characteristics

The results of the geotechnical lab tests for physical parameters are summarized in Table 4-2. The results of the geotechnical properties investigation show that the sediment does not vary greatly in type or properties across the dredge area. All sediment samples were found to be nonplastic. The presence and amount of silt indicates that the material in the sampling area and within the reach is of a depositional nature. Additionally, seen here as well as in previous investigations, there is no notable vertical change in material within the proposed dredge prism. The observed relative homogeneity of the material indicates that similar dredging treatments are appropriate across the extent of the site.

Sediment for bench testing was collected during the environmental sampling event. The bench testing included physical manipulation of the sediment in order to simulate dredging and handling methods. The testing was intended to emulate how the sediment will react to handling, stacking, drying, and amending during dredging, as well as to gather any other characteristics that could be observed and recorded. Generally, the material was found to take significant agitating to remold. However, once remolded, the sediment became very flowable. It was observed that, as the mass of water added increased much beyond 10 percent (additional, by weight), the material became an unworkable slurry. It also required much larger amounts of admixture to restore workability. These sediment physical properties will further inform the design for handling, dewatering, and stabilizing the lake river sediment and is further discussed in the Initial Remedial Design Report (MFA, forthcoming).

4.4 Lake River Post-Remedy

Figure 4-4 shows the estimated post-remedy IDW surface contours based on the selected remedial area. The following procedure was followed to calculate the post-remedial SWAC:

- All stations were assigned a projected leave surface concentration based on the selected remedy (e.g., dredge depth) and available chemical data (see Table 4-3).
- To estimate the post-remedial concentration, the projected leave surface was assumed to mix fully with the clean sand layer, if applied (see Table 4-3); this evaluation is conservative, as full mixing of the sand layer with the leave surface is not expected and concentrations at the point of compliance (0 to 10 cm) are therefore likely to be lower (MFA, 2012a).

- IDW interpolation was used to estimate the post-remedial surface for the Lake River site (see Figure 4-4). This evaluation is conservative, as IDW predicts slightly greater extent of dioxin impacts than NN (see Appendix H).
- Post-remedy SWACs were calculated as follows. IDW interpolation is used (see Appendix H for details) to estimate concentrations in 1 x 1 square foot grids. The concentrations in the 1 x 1 square foot grids are averaged across the area of interest (i.e., either the remedial action area or more encompassing area off-shore of the site).
- Post-remedy SWACs were calculated for two different areas:
 - Including only Lake River areas in the remedial action area (i.e., areas currently exceeding the CUL of 5 ng/kg).
 - Including all Lake River areas.
- SWACs were estimated to provide a range of post-remedy conditions. A SWAC was calculated based on the nearshore remedy boundary shown in Figure 4-3 (and described in Section 4.2) and a second SWAC was calculated based on a nearshore remedy boundary at the shoreline inflection point (approximately 20 feet to the west). The extent of the nearshore boundary will be further refined in the initial remedial design report (MFA, forthcoming).

A post-remedy SWAC between 4.2 and 4.4 ng/kg dioxin TEQ was calculated for Lake River areas in the remedial action area. A SWAC between 2.3 and 2.5 ng/kg dioxin TEQ was estimated for the entire Lake River site. The estimated post-remedy dioxin TEQ concentrations are below the CUL of 5 ng/kg.

LIMITATIONS

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

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

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TABLES



Table 3-1
Sample Location Coordinates
Former PWT Site
Ridgefield, Washington

Station ID	Sample Collection Methodology	X Coordinate	Y Coordinate
LRIS-LR-103	Vibracore	1066355.736	185003.282
LRIS-LR-103	Van Veen	1066356.913	184998.323
LRIS-LR-103	Shelby Tube	1066354.909	185001.116
LRIS-LR-105	Shelby Tube	1066354.580	185148.873
LRIS-LR-106	Vibracore	1066261.464	185215.434
LRIS-LR-106	Van Veen	1066258.489	185218.437
LRIS-LR-108	Vibracore	1066155.676	185511.031
LRIS-LR-109	Vibracore	1066104.970	185420.670
LRIS-LR-109	Shelby Tube	1066102.613	185424.446
LRIS-LR-110	Vibracore	1066073.806	185698.814
LRIS-LR-119	Vibracore	1066578.968	184638.182
LRIS-LR-119	Shelby Tube	1066581.679	184636.341
LRIS-LR-120	Vibracore	1066454.548	184899.409
LRIS-LR-120	Shelby Tube	1066452.433	184901.293
LRIS-LR-122	Vibracore	1066250.187	185347.512
LRIS-LR-122	Van Veen	1066254.127	185347.035
LRIS-LR-124	Vibracore	1066157.348	185587.410
LRIS-LR-125	Vibracore	1065988.294	185814.165
LRIS-LR-126	Vibracore	1065896.913	186090.017
LRIS-LR-126	Van Veen	1065902.596	186089.551
LRIS-LR-126	Shelby Tube	1065897.178	186088.854
LRIS-LR-129	Vibracore	1065907.225	185781.460
LRIS-LR-129	Van Veen	1065907.767	185790.018
LRIS-LR-130	Vibracore	1066022.528	185426.248
LRIS-LR-130	Van Veen	1066023.219	185422.154
LRIS-LR-131	Vibracore	1066115.041	185340.125
LRIS-LR-131	Van Veen	1066112.718	185331.739
LRIS-LR-132	Vibracore	1066400.175	184811.644
LRIS-LR-132	Van Veen	1066394.885	184815.443
LRIS-LR-133	Vibracore	1066523.551	184591.244
LRIS-LR-133	Van Veen	1066521.463	184589.601
LRIS-LR-134	Vibracore	1066595.232	184543.658
LRIS-LR-134	Van Veen	1066596.503	184540.521
LRIS-LR-135	Vibracore	1066445.238	184528.666
LRIS-LR-135	Van Veen	1066447.198	184531.771
LRIS-LR-136	Vibracore	1066008.613	185323.101
LRIS-LR-136	Van Veen	1066010.969	185316.285
LRIS-LR-137	Vibracore	1065799.293	185896.176
LRIS-LR-137	Van Veen	1065791.847	185891.464
NOTE: Horizontal Datum is NAD83 State Plane Washington South.			

**Table 3-2
Surface Sample Summary
Former PWT Site
Ridgefield, Washington**

Date	Station ID	Collection Time	Sediment Recovery (cm)	Sampling Interval (cm)	Physical Description	Sample Notes
12/04/2012	LRIS-LR-126	8:55	>10	0-10	Medium sand with silt; trace woody debris	
12/04/2012	LRIS-LR-137	9:14	>10	0-10	Sandy silt	
12/04/2012	LRIS-LR-129	10:10	>10	0-10	Sandy silt	
12/04/2012	LRIS-LR-130	10:24	>10	0-10	Sandy silt; trace organic debris; trace woody debris	
12/04/2012	LRIS-LR-136	10:39	>10	0-10	Sandy silt; trace organic debris	
12/04/2012	LRIS-LR-131	11:15	>10	0-10	Sandy silt	
12/04/2012	LRIS-LR-122	11:27	>10	0-10	Sandy silt; trace organic debris; trace woody debris	
12/04/2012	LRIS-LR-106	11:42	>10	0-10	Sandy silt; trace woody debris; trace trash	
12/04/2012	LRIS-LR-103	11:55	>10	0-10	Sandy silt	
12/04/2012	LRIS-LR-132	12:06	>10	0-10	Sandy silt; trace woody debris	
12/04/2012	LRIS-LR-133	12:49	>10	0-10	Sandy silt; trace woody debris	
12/04/2012	LRIS-LR-135	13:01	>10	0-10	Sandy silt; trace woody debris	
12/04/2012	LRIS-LR-134	13:19	>10	0-10	Sandy silt; trace organic debris; trace woody debris	Two attempts were made to recover sediment; no recovery on first attempt (Van Veen twisted during deployment); sample collected after second, successful attempt.

NOTES:

All station IDs are colocated surface and subsurface sediment stations.

cm = centimeters.

**Table 3-3
Subsurface Sample Summary
Former PWT Site
Ridgefield, Washington**

Date	Station ID	Collection Time	Water Depth (feet)	Sediment Penetration (feet below mudline)	Sediment Recovery (feet)	Percent Recovery	Sample Notes
12/02/2012	LRIS-LR-134*	9:19	9.5	7	4.8	69%	
12/02/2012	LRIS-LR-126*	10:13	6.6	7	5.3	76%	
12/02/2012	LRIS-LR-137*	10:43	17.6	7	6.2	89%	
12/02/2012	LRIS-LR-129*	11:27	17.3	7	5.1	73%	
12/02/2012	LRIS-LR-125	12:31	8.6	7	4.2	60%	Two attempts; piston plug malfunction on first attempt led to no recovery.
12/02/2012	LRIS-LR-130*	13:37	15.1	7	6.2	89%	
12/02/2012	LRIS-LR-109	14:00	13.5	7	6	86%	
12/02/2012	LRIS-LR-136*	14:43	14.5	7	5.5	79%	
12/02/2012	LRIS-LR-131*	15:32	13	6.8	3.8	56%	Field-adjusted location because of buoy; two attempts, low recovery on first attempt due to woody debris.
12/02/2012	LRIS-LR-106*	16:33	10.3	7	6.3	90%	
12/03/2012	LRIS-LR-110	8:36	7.8	7	6.3	90%	
12/03/2012	LRIS-LR-124	9:04	7.2	7	4.7	67%	Moved location approximately 10 feet because of hard substrate on sediment surface near initial location.
12/03/2012	LRIS-LR-108	10:05	8.5	7	6.2	89%	Two attempts; debris encountered on first attempt, moved location approximately 5 feet on second attempt.
12/03/2012	LRIS-LR-122*	10:36	7.6	7	6	86%	
12/03/2012	LRIS-LR-103*	11:17	7.1	7	6.2	89%	
12/03/2012	LRIS-LR-120	11:41	7.2	7	5.6	80%	
12/03/2012	LRIS-LR-132*	12:47	8.7	7	6	86%	
12/03/2012	LRIS-LR-119	13:24	7	7	5.7	81%	
12/03/2012	LRIS-LR-133*	14:40	8.5	7	5.5	79%	Four attempts; moved location approximately 10 feet because of repeated encounter with hard substrate.
12/03/2012	LRIS-LR-135*	15:04	12.9	7	5.9	84%	

NOTES:

Water depth presented is at the time of sample collection. Water levels in Lake River are tidally and seasonally influenced.

*Station IDs are co-located surface and subsurface sediment stations.

**Table 3-4
Physical Data Sample Summary
Former PWT Site
Ridgefield, Washington**

Date	Station ID	Collection Time	Sediment Recovery (feet)	Water Depth (feet)	Sample Notes
12/04/2012	LRIS-LR-120	15:17	1.83	8	
12/04/2012	LRIS-LR-103	15:43	2	8	
12/04/2012	LRIS-LR-105	16:04	2.5	8.5	
12/04/2012	LRIS-LR-109	16:19	2.5	13.5	
12/04/2012	LRIS-LR-126	16:43	1.5	7.5	Two attempts; minimal recovery on first attempt.
12/04/2012	LRIS-LR-119	17:00	2.33	8	Three attempts; field-adjusted location, as grain size was too large for recovery.
NOTE: Water depth presented is from the time of sample collection. Water levels in Lake River are tidally and seasonally influenced.					

Table 4-1
Surface and Subsurface Sediment Results
Former PWT Site
Ridgefield, Washington

Sample ID	LRIS-LR-103	LRIS-LR-103-2	LRIS-LR-106	LRIS-LR-106-2	LRIS-LR-108-3	LRIS-LR-109-3	LRIS-LR-110-3	LRIS-LR-110-4	LRIS-LR-110-5	LRIS-LR-119-2	LRIS-LR-119-3	LRIS-LR-120-2	LRIS-LR-122
Location ID	LR-103	LR-103	LR-106	LR-106	LR-108	LR-109	LR-110	LR-110	LR-110	LR-119	LR-119	LR-120	LR-122
Sample Date	12/04/2012	12/03/2012	12/04/2012	12/02/2012	12/03/2012	12/02/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012	12/04/2012
Depth	0-10 cm	1-2 ft	0-10 cm	1-2 ft	2-3 ft	2-3 ft	2-3 ft	3-4 ft	4-5 ft	1-2 ft	2-3 ft	1-2 ft	0-10 cm
Tier	I	I	I	I	I	I	I	II	III	I	II	I	I
Conventional Parameters													
Total Organic Carbon (%)	1.2	1	1.8	0.53	1.2	1.2	1.2	1.1	1.3	1.6	1.2	1.2	0.8
Dioxins/Furans (ng/kg)													
1,2,3,4,6,7,8-HpCDD	120 J	190	450 J	0.38 U	1300	100 J	2100 J	1400	2100	1100	99	930 J	8300
1,2,3,4,6,7,8-HpCDF	16	22 J	56	0.077 U	170 J	12	180	110	160	120 J	17	92	1000 J
1,2,3,4,7,8,9-HpCDF	0.64 J	0.63 U	2.5 J	0.03 U	7.3 J	0.62 U	9.8 J	6.9	9.3	7.7 J	0.78 J	4.3 J	49 J
1,2,3,4,7,8-HxCDD	0.53 U	1.2 U	2.7 J	0.026 U	7.6	0.97 J	23	20	14	6.5	0.94 J	7.2	21
1,2,3,4,7,8-HxCDF	3.2 J	3.3 J	10	0.019 U	46 J	2.1 J	38	21	39	14 J	2.8 J	12	330 J
1,2,3,6,7,8-HxCDD	6.7	12	23	0.084 J	51	5.9	110	63	98	65	4.8	46	340
1,2,3,6,7,8-HxCDF	1.2 J	1.8 U	3.4 J	0.018 U	21 J	1.2 J	16	12	19	9.4 J	1.9 J	8.6	110 J
1,2,3,7,8,9-HxCDD	2.1 J	5.5	6.6	0.076 U	14	2.2 U	84	45	48	19	2.1 J	17	66
1,2,3,7,8,9-HxCDF	0.054 U	0.14 U	0.084 U	0.024 U	0.33 U	0.058 U	0.23 U	1.2 J	1.8 U	7.1	0.15 U	0.12 U	4.9
1,2,3,7,8-PeCDD	0.45 U	0.62 U	0.91 J	0.044 U	1.6 J	0.34 J	14	7.1	6.8	2.7 J	0.42 J	1.7 J	7.2
1,2,3,7,8-PeCDF	1 J	1.7 J	2.2 J	0.034 U	11	0.73 J	9.5 J	6.4	8.6	5.6	1 J	3.9	51
2,3,4,6,7,8-HxCDF	1.7 J	1.3 J	2.5 J	0.018 U	8.3 J	0.7 J	9.2 J	5.7	9.1	5.5 J	1 J	3.5 J	58 J
2,3,4,7,8-PeCDF	1.1 J	1.2 U	3.1 J	0.032 U	12	1.1 J	11 J	5.2	8.3	4.7	1 J	3 J	91
2,3,7,8-TCDD	0.21 J	0.37 J	0.35 J	0.023 U	0.83 J	0.14 U	3.2 J	1.4	2.4	0.69 J	0.2 U	0.46 J	0.53 U
2,3,7,8-TCDF	0.73 J	1.8 J	0.94 J	0.033 U	5 J	1 J	4 J	2.4 J	3.7	3.2 J	1.2 J	2.1 J	14 J
OCDD	1300	1600	4500	2 U	14000	920	20000	11000	14000	9000	1100	9500	73000
OCDF	32	41	88	0.15 U	160	14	250	130 J	180	290	20 J	120	490
Dioxin/Furan TEQ	4.2E+00	6.1E+00	1.4E+01	6.1E-02	4.1E+01	3.5E+00	7.8E+01	4.6E+01	6.2E+01	3.3E+01	3.8E+00	2.6E+01	2.5E+02
Total HpCDDs	240	410	890	1 U	2700	200	4200	3000	4400	2200	230	1800	17000
Total HpCDFs	56	77 U	190	0.077 U	580	37 U	560	350	520	480	50	300	3300
Total HxCDDs	28 U	75 U	90 U	0.6 U	330	33 U	810	500	740	320	33 U	260	1000
Total HxCDFs	40	60 U	130	0.024 U	550	32	440	320	590	340	43 U	210	3400
Total PeCDDs	2.7 U	7.1 U	5.9 U	0.044 U	33 U	2.5 U	160 U	110	180 U	37 U	5.4 U	23 U	28 U
Total PeCDFs	8.8 U	15 U	31 U	0.034 U	170 U	10 U	130 U	91 U	160 U	82 U	14 U	45 U	750 U
Total TCDDs	1.7 U	3.9 U	2.3 U	0.38 U	19 U	1.2 U	77 U	41 U	88 U	26 U	4.5 U	9.8 U	4.6 U
Total TCDFs	2.9 U	5.4 U	5.7 U	0.033 U	54 U	8.8 U	63 U	35	66 U	24 U	12 U	18 U	28 U

Table 4-1
Surface and Subsurface Sediment Results
Former PWT Site
Ridgefield, Washington

Sample ID	LRIS-LR-122-2	LRIS-LR-122-3	LRIS-LR-124-2	LRIS-LR-124-3	LRIS-LR-124-4	LRIS-LR-125-2	LRIS-LR-125-3	LRIS-LR-126	LRIS-LR-126-2	LRIS-LR-129	LRIS-LR-129-2	LRIS-LR-130	LRIS-LR-130-2
Location ID	LR-122	LR-122	LR-124	LR-124	LR-124	LR-125	LR-125	LR-126	LR-126	LR-129	LR-129	LR-130	LR-130
Sample Date	12/03/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012	12/02/2012	12/02/2012	12/04/2012	12/02/2012	12/04/2012	12/02/2012	12/04/2012	12/02/2012
Depth	1-2 ft	2-3 ft	1-2 ft	2-3 ft	3-4 ft	1-2 ft	2-3 ft	0-10 cm	1-2 ft	0-10 cm	1-2 ft	0-10 cm	1-2 ft
Tier	I	II	I	II	III	I	II	I	II	I	II	I	I
Conventional Parameters													
Total Organic Carbon (%)	1.2	0.83	0.85	1.7	0.56	0.67	0.24	0.92	0.76	1.3	0.73	0.61	0.37
Dioxins/Furans (ng/kg)													
1,2,3,4,6,7,8-HpCDD	1400 J	47	3300 J	1800	26	7300	63	4300 J	420 J	60 J	57 J	25 J	27 J
1,2,3,4,6,7,8-HpCDF	190	7	490	240	4.1	460 J	10	620	31	8.8	8.2	2.9 U	3.2 J
1,2,3,4,7,8,9-HpCDF	9.9 J	0.38 U	33 J	13	0.057 U	16 J	0.52 U	28 J	2.4 J	0.15 U	0.47 U	0.083 U	0.053 U
1,2,3,4,7,8-HxCDD	6.4	0.1 U	14	5	0.025 U	73	0.38 U	37	4.4	0.52 U	0.61 U	0.19 J	0.3 U
1,2,3,4,7,8-HxCDF	36	2.1 J	160	83	1.2 J	58 J	2.6	110	8.7	1.5 J	1.2 J	0.68 J	0.28 U
1,2,3,6,7,8-HxCDD	58	2.2 J	170	67	1.3 U	230	2.9	260	14	3.2 J	2.9 J	1.2 U	1.4 J
1,2,3,6,7,8-HxCDF	15	0.99 J	53	30	0.65 J	27 J	1.2 J	33	3.3	0.67 J	0.99 J	0.27 J	0.19 J
1,2,3,7,8,9-HxCDD	17	0.52 J	42	16	0.35 U	240	0.98 J	120	12	1.1 U	1.2 U	0.54 J	0.61 J
1,2,3,7,8,9-HxCDF	0.22 U	0.062 U	0.59 U	1 J	0.036 U	2.6 J	0.095 J	1.2 U	0.057 U	0.066 U	0.063 U	0.035 U	0.026 U
1,2,3,7,8-PeCDD	1.4 J	0.051 U	2.9 J	1.5 J	0.065 U	11	0.061 U	11	0.63 J	0.27 J	0.25 U	0.074 U	0.056 U
1,2,3,7,8-PeCDF	6.8 J	0.41 J	25 J	12	0.23 U	12	0.59 J	18 J	1.1 J	0.31 J	0.25 U	0.11 U	0.044 U
2,3,4,6,7,8-HxCDF	6.9 J	0.46 J	23 J	15	0.58 U	18 J	0.55 J	19 J	1.3 U	0.63 U	1.4 J	0.24 J	0.3 J
2,3,4,7,8-PeCDF	6.6 J	0.49 J	41 J	17	0.39 U	11	0.43 J	19 J	1.2 J	0.66 J	0.3 J	0.073 U	0.098 J
2,3,7,8-TCDD	0.081 U	0.023 U	1.1 J	0.51 J	0.079 U	2.5 J	0.33 J	2 J	0.56 J	0.31 U	0.29 U	0.044 U	0.16 U
2,3,7,8-TCDF	2.1 J	0.57 J	12 J	4.4 J	0.39 J	5.6 J	0.26 J	6.3 J	1.1 J	0.65 J	0.66 J	0.24 U	0.32 U
OCDD	15000	560	33000	18000	280	42000	970	37000	3400	540	510	250	270 J
OCDF	180	5.2 J	330	170 J	3.3 J	450	9.8 J	550	42	19	22	13 J	6.8 J
Dioxin/Furan TEQ	3.8E+01	1.6E+00	1.1E+02	5.6E+01	8.6E-01	1.7E+02	2.4E+00	1.4E+02	1.2E+01	2.2E+00	2.0E+00	6.8E-01	8.2E-01
Total HpCDDs	2700	98	6800	3800	61	22000	140	8900	940	110	110	47	49 J
Total HpCDFs	580	21	1500	820	11	1500	35	2100	98	29	28 U	12 U	9.6 J
Total HxCDDs	360	13 U	1000	420	7.6 J	2800	26 U	1600	130	15 U	17 U	6.5 U	7.4 U
Total HxCDFs	450	24 U	1800	890	13 U	1100	35	1600	74 U	20 U	17	6.3	6.1 U
Total PeCDDs	32 U	2.5 U	120 U	58 U	1.2 U	340 U	4.1 U	120	17 U	1.1 U	1.4 U	0.074 U	0.4 U
Total PeCDFs	97 U	7.6 U	570	240 U	6.8 U	240	7.6 U	260	18 U	4.8 U	3.8 U	0.76 J	1.1 U
Total TCDDs	21	1.1 U	60 U	25 U	1.2 U	110	2	36 U	5.5 U	0.8 U	0.57 U	0.38 U	0.39 U
Total TCDFs	36 U	3.7 U	170	69 U	3.8 U	61 U	2.2 U	83 U	12 U	3.2 U	3.4 U	0.83 U	0.66 U

Table 4-1
Surface and Subsurface Sediment Results
Former PWT Site
Ridgefield, Washington

Sample ID	LRIS-LR-130-FD	LRIS-LR-130-FD-1	LRIS-LR-131	LRIS-LR-131-2	LRIS-LR-132	LRIS-LR-132-2	LRIS-LR-132-5	LRIS-LR-133	LRIS-LR-133-2	LRIS-LR-134	LRIS-LR-134-2	LRIS-LR-137
Location ID	LR-130	LR-130	LR-131	LR-131	LR-132	LR-132	LR-132	LR-133	LR-133	LR-134	LR-134	LR-137
Sample Date	12/02/2012	12/04/2012	12/04/2012	12/02/2012	12/04/2012	12/03/2012	12/03/2012	12/04/2012	12/03/2012	12/04/2012	12/02/2012	12/04/2012
Depth	1-2 ft	0-10 cm	0-10 cm	1-2 ft	0-10 cm	1-2 ft	4-5 ft	0-10 cm	1-2 ft	0-10 cm	1-2 ft	0-10 cm
Tier	I	I	I	I	I	I	IV	I	I	I	I	I
Conventional Parameters												
Total Organic Carbon (%)	0.2	0.75	0.64	1.7	1.5	1.2	0.96	1.4	1.2	1.5	1	0.96
Dioxins/Furans (ng/kg)												
1,2,3,4,6,7,8-HpCDD	72 J	19 J	22 J	52 J	180	31 U	0.83 J	190	31 J	1100	550 J	36 J
1,2,3,4,6,7,8-HpCDF	7.1 J	2.9 J	3.4	5.2	24 J	6.8	0.23 U	27 J	6.3	150 J	79	6
1,2,3,4,7,8,9-HpCDF	0.19 U	0.056 U	0.12 U	0.086 U	1.6 J	0.22 U	0.038 U	1.5 J	0.15 U	8.9 J	3.7 J	0.24 U
1,2,3,4,7,8-HxCDD	0.54 J	0.23 U	0.18 J	0.5 J	0.9 U	0.64 J	0.037 U	1.4 J	0.31 J	4.8	3.5	0.36 J
1,2,3,4,7,8-HxCDF	0.57 U	0.47 J	0.5 J	1.1 J	3.5 J	0.3 U	0.071 U	3.8 J	0.74 J	14 J	8	0.83 J
1,2,3,6,7,8-HxCDD	3.6	1 J	1 U	2.4 J	8.9	1.4 J	0.11 U	8.5	1.6 J	44	32	2 J
1,2,3,6,7,8-HxCDF	0.35 J	0.22 J	0.21 J	0.63 U	1.5 J	0.33 U	0.059 U	1.5 U	0.52 J	6.2 J	5.1	0.35 U
1,2,3,7,8,9-HxCDD	0.96 J	0.42 U	0.55 J	1.1 U	4.4 J	2.1 U	0.092 U	2.7 U	0.85 U	13	9.4	0.88 J
1,2,3,7,8,9-HxCDF	0.091 U	0.025 U	0.05 U	0.038 U	0.19 U	0.11 U	0.061 U	0.17 U	0.062 U	0.23 U	0.097 U	0.057 U
1,2,3,7,8-PeCDD	0.19 U	0.051 U	0.099 U	0.22 U	0.74 J	0.27 U	0.055 U	0.72 J	0.11 U	1.7 J	1.6 J	0.1 U
1,2,3,7,8-PeCDF	0.18 U	0.15 J	0.089 U	0.089 U	0.77 U	0.2 U	0.04 U	1.2 J	0.19 U	2.9 J	2.5 J	0.14 U
2,3,4,6,7,8-HxCDF	0.72 J	0.25 J	0.043 U	0.58 U	0.91 J	0.093 U	0.023 U	0.98 J	0.47 U	4.6 J	3 J	0.48 U
2,3,4,7,8-PeCDF	0.2 U	0.15 J	0.11 U	0.27 U	1.4 J	0.25 U	0.041 U	1.1 U	0.21 U	3.7 J	2.3 J	0.33 J
2,3,7,8-TCDD	0.16 U	0.029 U	0.062 U	0.26 J	0.13 U	1.2 J	0.11 U	0.092 U	0.064 U	0.34 U	0.51 J	0.057 U
2,3,7,8-TCDF	0.12 U	0.3 J	0.059 U	0.61 J	0.19 U	0.48 J	0.13 J	0.82 J	0.56 J	1.6 J	1.8 J	0.47 J
OCDD	660 J	170	200	440	1600	240	6.6	1600	330	9500	5700	350
OCDF	14 J	7.2 J	7.4	9.8	66	11	0.22 U	73	17	710	290	15
Dioxin/Furan TEQ	1.9E+00	6.2E-01	6.2E-01	1.7E+00	5.8E+00	2.1E+00	1.4E-01	5.4E+00	1.0E+00	2.8E+01	1.7E+01	1.2E+00
Total HpCDDs	140 J	41	43	100	350	74 U	1.8 U	360	66	2100	1000	69
Total HpCDFs	24 J	9.1	11	16	87	17	0.37 U	110	23	700	310	18 U
Total HxCDDs	15	6 U	5.5 U	15 U	41 U	18 U	0.77 U	37 U	11 U	180 U	130 U	11 U
Total HxCDFs	15 U	5.1	5.8 U	12 U	54	4.7 U	0.45 U	57 U	9.4 U	270	160	11 U
Total PeCDDs	0.19 U	0.17 J	0.099 U	1.3 U	3.8 U	0.27 U	0.24 U	2.5 U	0.11 U	9.6 U	13 U	0.65 U
Total PeCDFs	1.1 J	1 U	0.93 J	4 U	21 U	0.25 U	0.38 U	12 U	3.4 U	41	34 U	2.1 U
Total TCDDs	0.16 U	0.12 U	0.5 U	0.73 U	2.3 U	1.2	0.82 U	2 U	1.1 U	5.4 U	8.7 U	0.55 J
Total TCDFs	0.12 U	0.99 U	0.059 U	5 U	5.3 U	1.7 U	0.85 U	3.2 U	4.1 U	5.3 U	9.5 U	0.69 U

Table 4-1
Surface and Subsurface Sediment Results
Former PWT Site
Ridgefield, Washington

NOTES:
cm = centimeter(s).
CUL = cleanup level
ft = feet.
HpCDD = heptachlorodibenzo-p-dioxin.
HpCDF = heptachlorodibenzofuran.
HxCDD = hexachlorodibenzo-p-dioxin.
HxCDF = hexachlorodibenzofuran.
J = the reporting limit is an estimate.
ng/kg = nanograms per kilogram.
OCDD = octachlorodibenzo-p-dioxin.
OCDF = octachlorodibenzofuran.
PeCDD = pentachlorodibenzo-p-dioxin.
PeCDF = pentachlorodibenzofuran.
TCDD = tetrachlorodibenzo-p-dioxin.
TCDF = tetrachlorodibenzofuran.
TEQ = Toxicity equivalent.
U = not detected at or above the method reporting limit.

Table 4-2
Physical Parameter Results
Former PWT Site
Ridgefield, Washington

Sample ID Location ID Sample Date Sample Analysis Depth	103			105			109			119			120			126	
	LRIS-LR-103			LRIS-LR-105			LRIS-LR-109			LRIS-LR-119			LRIS-LR-120			LRIS-LR-126	
	12/04/2012			12/04/2012			12/04/2012			12/04/2012			12/04/2012			12/04/2012	
	1 ft	1.5 ft	2 ft	1 ft	1.5 ft	2 ft	0.5 ft	1 ft	1.5 ft	0.5 ft	1 ft	1.5 ft	0.5 ft	1 ft	1.5 ft	1.5 ft	2 ft
Physical Parameters																	
Total solids (%)	64.7	nv	nv	67.2	nv	nv	nv	60.4	nv	60.3	nv	nv	62.3	nv	nv	46	nv
Moisture Content (%)	nv	54	nv	nv	64	nv	nv	53	nv	nv	84	nv	nv	62	nv	nv	61
Dry Density (pcf)	nv	65	nv	nv	61	nv	nv	65	nv	nv	49	nv	nv	60	nv	nv	69
Liquid Limit (%)	NP	nv	nv	NP	nv	nv	NP	nv	nv	NP	nv	nv	NP	nv	nv	NP	nv
Plastic Limit (%)	NP	nv	nv	NP	nv	nv	NP	nv	nv	NP	nv	nv	NP	nv	nv	NP	nv
Plasticity Index (%)	NP	nv	nv	NP	nv	nv	NP	nv	nv	NP	nv	nv	NP	nv	nv	NP	nv
Permeability Coefficient (cm/s)	nv	nv	1.5E-06	nv	nv	5.4E-07	nv	nv	1.9E-05	nv	nv	1.9E-06	nv	nv	1.3E-06	nv	nv
Grain Size (%)																	
Clay	11	nv	nv	10	nv	nv	16	nv	nv	10	nv	nv	15	nv	nv	8	nv
Gravel	0	nv	nv	0	nv	nv	0	nv	nv	0	nv	nv	0	nv	nv	0	nv
Sand, Coarse ^a	0	nv	nv	0	nv	nv	0	nv	nv	0	nv	nv	0	nv	nv	4	nv
Sand, Fine ^a	18	nv	nv	40	nv	nv	6	nv	nv	34	nv	nv	14	nv	nv	17	nv
Sand, Medium ^a	0	nv	nv	1	nv	nv	0	nv	nv	2	nv	nv	1	nv	nv	6	nv
Silt	70	nv	nv	48	nv	nv	78	nv	nv	54	nv	nv	70	nv	nv	64	nv
Total Clay	11	nv	nv	10	nv	nv	16	nv	nv	10	nv	nv	15	nv	nv	8	nv
Total Fines (silt and clay)	81	nv	nv	58	nv	nv	94	nv	nv	64	nv	nv	85	nv	nv	72	nv
Total Gravel	0	nv	nv	0	nv	nv	0	nv	nv	0	nv	nv	0	nv	nv	1	nv
Total Sand	18	nv	nv	41	nv	nv	6	nv	nv	36	nv	nv	15	nv	nv	27	nv
Total Silt	70	nv	nv	48	nv	nv	78	nv	nv	54	nv	nv	70	nv	nv	64	nv
Total Grain Size	99	nv	nv	99	nv	nv	100	nv	nv	100	nv	nv	100	nv	nv	100	nv
NOTES: % = percent. cm/s = centimeters per second. ft = feet. NP = nonplastic. nv = no value. pcf = pounds per cubic foot. ^a Values approximated from grain size charts.																	

Table 4-3
Remedy Areas and Estimated Post-Remedy Conditions
Former PWT Site
Ridgefield, Washington

Station	Name	Date	Start Depth	End Depth	Depth Unit	Dioxin TEQ ^a	Neatline Dredge Depth (ft) ^b	Estimated post-dredge Concentration (ng/kg) ^c	Estimated post-remedial Concentration (ng/kg) ^d
LRIS-LR-01	LRIS-LR-01-SS	04/19/2010	0	10	cm	37	1	6.4	3.4
	LRIS-LR-01-SB-1-2	04/26/2010	1	2	ft	6.4			
LRIS-LR-02	LRIS-LR-02-SS	04/19/2010	0	10	cm	3.3	-	3.3	3.3
LRIS-LR-103	LRIS-LR-103	12/04/2012	0	10	cm	4.2	ENR ^e	4.2	2.3
	LRIS-LR-103-2	12/03/2012	1	2	ft	6.1			
LRIS-LR-04	LRIS-LR-04-SS	04/19/2010	0	10	cm	1.6	-	1.6	1.6
LRIS-LR-05	LRIS-LR-05-SS	04/19/2010	0	10	cm	30	ENR	30	15
	LRIS-LR-05-SB-1-2	04/27/2010	1	2	ft	17			
LRIS-LR-106	LRIS-LR-106	12/04/2012	0	10	cm	14	ENR	14	7.2
	LRIS-LR-106-2	12/02/2012	1	2	ft	0.06			
LRIS-LR-07	LRIS-LR-07-SS	04/19/2010	0	10	cm	1.4	-	1.4	1.4
LRIS-LR-08	LRIS-LR-08-SS	04/19/2010	0	10	cm	220	3	6.9	3.6
	LRIS-LR-08-SB-1-2	04/28/2010	1	2	ft	910			
	LRIS-LR-108-3	12/03/2012	2	3	ft	41			
	LRIS-LR-08-SB-3-4	04/28/2010	3	4	ft	6.9			
LRIS-LR-09	LRIS-LR-09-SS	04/19/2010	0	10	cm	580	1	3.5	1.9
	LRIS-LR-09-SB-1-2	04/29/2010	1	2	ft	1.5			
	LRIS-LR-109-3	12/02/2012	2	3	ft	3.5			
	LRIS-LR-09-SB-4-5	04/29/2010	4	5	ft	3.1			
LRIS-LR-10	LRIS-LR-10-SS	04/19/2010	0	10	cm	57	3 ^f	46	23
	LRIS-LR-10-SB-1-2	04/28/2010	1	2	ft	79			
	LRIS-LR-110-3	12/03/2012	2	3	ft	78			
	LRIS-LR-110-4	12/03/2012	3	4	ft	46			
	LRIS-LR-110-5	12/03/2012	4	5	ft	62			
LRIS-LR-11	LRIS-LR-11-SS	04/20/2010	0	10	cm	2.5	-	2.5	2.5

Table 4-3
Remedy Areas and Estimated Post-Remedy Conditions
Former PWT Site
Ridgefield, Washington

Station	Name	Date	Start Depth	End Depth	Depth Unit	Dioxin TEQ ^a	Neatline Dredge Depth (ft) ^b	Estimated post-dredge Concentration (ng/kg) ^c	Estimated post-remedial Concentration (ng/kg) ^d
LRIS-LR-12	LRIS-LR-12-SS	04/20/2010	0	10	cm	61	1	9.7	5.0
LRIS-LR-12	LRIS-LR-12-SB-1-2	04/28/2010	1	2	ft	9.7			
LRIS-LR-13	LRIS-LR-13-SS	04/20/2010	0	10	cm	16	ENR	16	8.2
LRIS-LR-14	LRIS-LR-14-SS	04/20/2010	0	10	cm	13	ENR	13	6.7
LRIS-LR-15	LRIS-LR-15-SS	04/20/2010	0	10	cm	1.2	-	1.2	1.2
LRIS-LR-16 ^g	LRIS-LR-16-SS	04/20/2010	0	10	cm	14	-	-	-
LRIS-LR-17 ^g	LRIS-LR-17-SS	04/20/2010	0	10	cm	4.3	-	-	-
LRIS-LR-18	LRIS-LR-18-SS	04/20/2010	0	10	cm	1.7	-	1.7	1.7
LRIS-LR-19	LRIS-LR-19-SS	04/21/2010	0	10	cm	110	2	3.8	2.1
	LRIS-LR-119-2	12/03/2012	1	2	ft	33			
	LRIS-LR-119-3	12/03/2012	2	3	ft	3.8			
LRIS-LR-20	LRIS-LR-20-SS	04/21/2010	0	10	cm	260	1	26	13
	LRIS-LR-120-2	12/03/2012	1	2	ft	26			
LRIS-LR-21	LRIS-LR-21-SS	04/21/2010	0	10	cm	0.51	-	0.51	0.51
LRIS-LR-122	LRIS-LR-122	12/04/2012	0	10	cm	250	2	1.6	0.98
	LRIS-LR-122-2	12/03/2012	1	2	ft	38			
	LRIS-LR-122-3	12/03/2012	2	3	ft	1.6			
LRIS-LR-23	LRIS-LR-23-SS	04/21/2010	0	10	cm	0.59	-	0.59	0.59
LRIS-LR-24	LRIS-LR-24-SS	04/21/2010	0	10	cm	170	3	0.86	0.61
	LRIS-LR-124-2	12/03/2012	1	2	ft	110			
	LRIS-LR-124-3	12/03/2012	2	3	ft	56			
	LRIS-LR-124-4	12/03/2012	3	4	ft	0.86			
LRIS-LR-25	LRIS-LR-25-SS	04/21/2010	0	10	cm	260	2	2.4	1.4
	LRIS-LR-125-2	12/02/2012	1	2	ft	170			
	LRIS-LR-125-3	12/02/2012	2	3	ft	2.4			

Table 4-3
Remedy Areas and Estimated Post-Remedy Conditions
Former PWT Site
Ridgefield, Washington

Station	Name	Date	Start Depth	End Depth	Depth Unit	Dioxin TEQ ^a	Neatline Dredge Depth (ft) ^b	Estimated post-dredge Concentration (ng/kg) ^c	Estimated post-remedial Concentration (ng/kg) ^d
LRIS-LR-126	LRIS-LR-126	12/04/2012	0	10	cm	140	1	12	6.2
	LRIS-LR-126-2	12/02/2012	1	2	ft	12			
LRIS-LR-27	LRIS-LR-27-SS	04/21/2010	0	10	cm	0.93	-	0.93	0.93
LRIS-LR-28	LRIS-LR-28-SS	04/21/2010	0	10	cm	0.84	-	0.84	0.84
LRIS-LR-129	LRIS-LR-129	12/04/2012	0	10	cm	2.2	-	2.2	2.2
	LRIS-LR-129-2	12/02/2012	1	2	ft	2.0			
LRIS-LR-130	LRIS-LR-130	12/04/2012	0	10	cm	0.68	-	0.68	0.68
	LRIS-LR-130-2	12/02/2012	1	2	ft	0.82			
	LRIS-LR-130-FD-1	12/04/2012	0	10	cm	0.62			
	LRIS-LR-130-FD	12/02/2012	1	2	ft	1.9			
LRIS-LR-131	LRIS-LR-131	12/04/2012	0	10	cm	0.62	-	0.62	0.62
	LRIS-LR-131-2	12/02/2012	1	2	ft	1.7			
LRIS-LR-132	LRIS-LR-132	12/04/2012	0	10	cm	5.8	ENR	5.8	3.1
	LRIS-LR-132-2	12/03/2012	1	2	ft	2.1			
	LRIS-LR-132-5	12/03/2012	4	5	ft	0.14			
LRIS-LR-133	LRIS-LR-133	12/04/2012	0	10	cm	5.4	ENR	5.4	2.9
	LRIS-LR-133-2	12/03/2012	1	2	ft	1.0			
LRIS-LR-134	LRIS-LR-134	12/04/2012	0	10	cm	28	ENR	28	14
	LRIS-LR-134-2	12/02/2012	1	2	ft	17			
LRIS-LR-137	LRIS-LR-137	12/04/2012	0	10	cm	1.2	-	1.2	1.2

Table 4-3
Remedy Areas and Estimated Post-Remedy Conditions
Former PWT Site
Ridgefield, Washington

NOTES:

- = no action.

ENR = enhanced natural recovery.

cm = centimeters.

ft = feet.

ng/kg = nanograms per kilogram.

TEQ = toxicity equivalent.

^a**Bold** values exceed the cleanup level.

^bDredge depths for surrounding areas are shown on Figure 4-3.

^cValues indicate the post-dredge leave surface concentration used for estimating post-remedy surface concentration; the concentration of sediment below the presumed neatline dredge cut was applied.

^dIn estimating post-remedy concentration, ENR layer is assumed to contain 0.365 dioxin TEQ and to mix fully with remaining surface layer (MFA, 2012b).

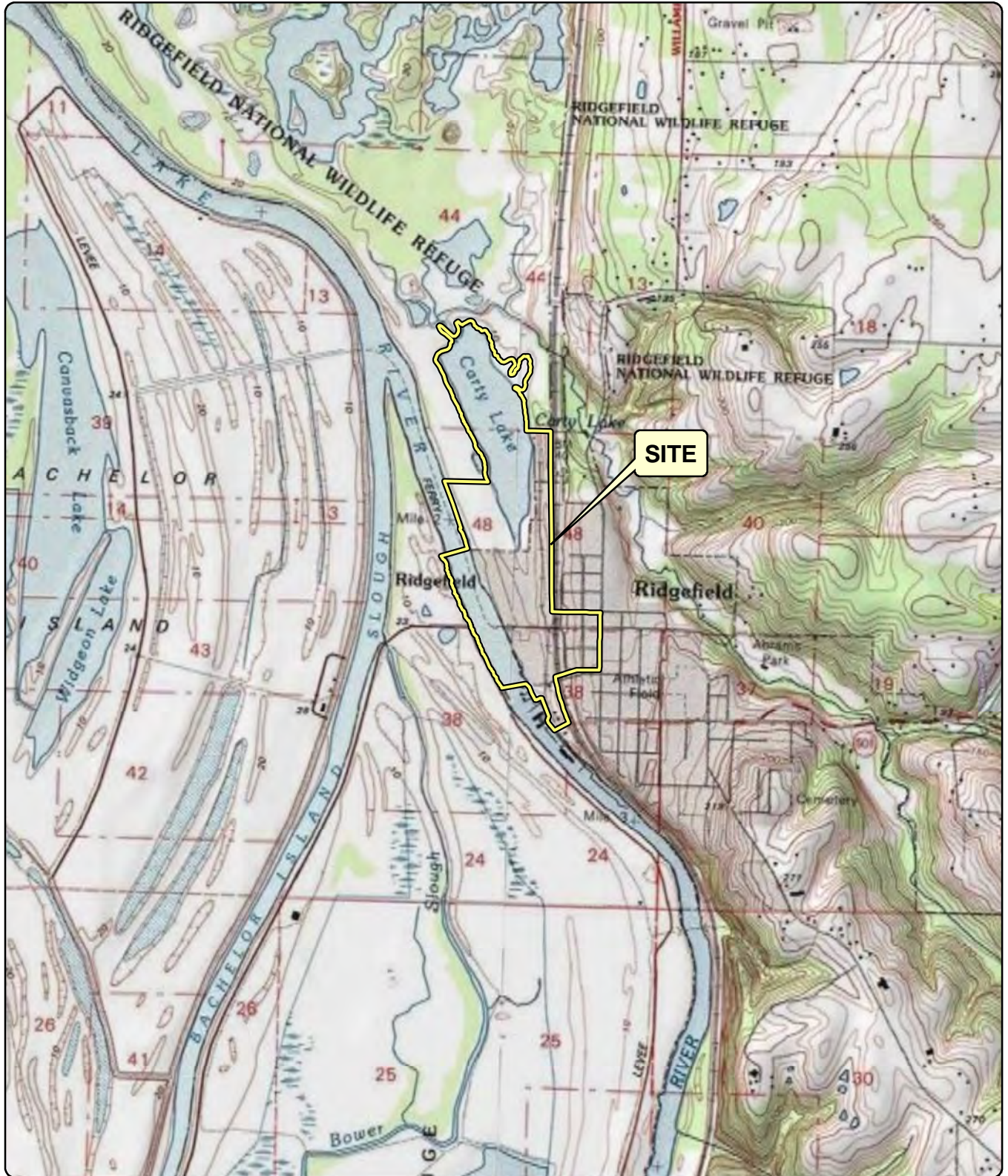
^eAlthough below 5 ng/kg, this area was identified for ENR treatment (see Figure 4-3).

^f2 feet of ENR will be placed at this location (see main text for details).

^gAreas not within site boundary (MFA, 2012b); not included in evaluations.

FIGURES






Source: Topographic Quadrangle obtained from ArcGIS Online Services/NGS-USGS TOPO/US Geological Survey (1999)
 7.5-minute topographic quadrangle: Ridgefield
 Address: Lake River Industrial Site
 111 W. Division Street, Ridgefield, WA 98642
 Section: 24 Township: 4N Range: 1W Of Willamette Meridian

Figure 1-1
Site Location

Former PWT Site
 Ridgefield, Washington

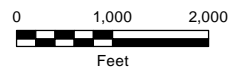
Legend

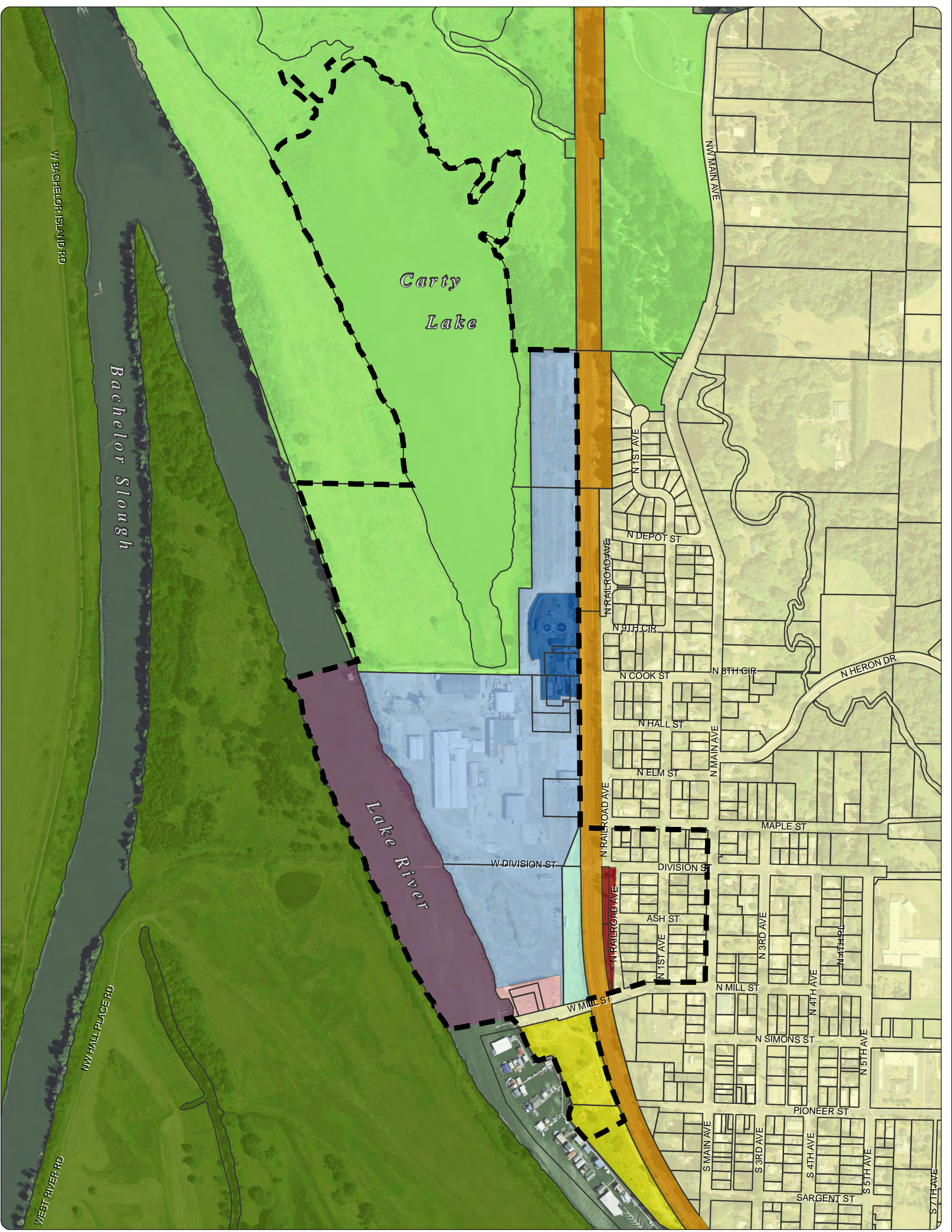
 Former Pacific Wood Treating Site



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Source: Aerial photograph obtained from Clark County (2007).

- Notes:**
1. BNSF = Burlington Northern Sante Fe
 2. LRIS = Lake River Industrial Site
 3. Port = Port of Ridgefield
 4. RNWR = Ridgefield National Wildlife Refuge
 5. WWTP = Wastewater treatment plant

Legend

- Pacific Wood Treating Site
- Clark County Tax Lots (2010)

Area Designations

LRIS	Upland Off-Property
Port-Owned	Residential; Low-Density
Union Pacific Railroad-Owned	McCuddy's Marina Property
City of Ridgefield WWTP	Other
Port-Owned	RNWR-Carty Unit
Railroad Avenue Property	RNWR-River S Unit
Marina Property	BNSF Railroad Property
	Lake River

Figure 1-2
Site Vicinity
 Former PWT Site
 Ridgefield, Washington

0 250 500
 Feet



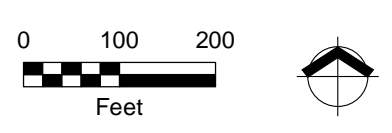
Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps

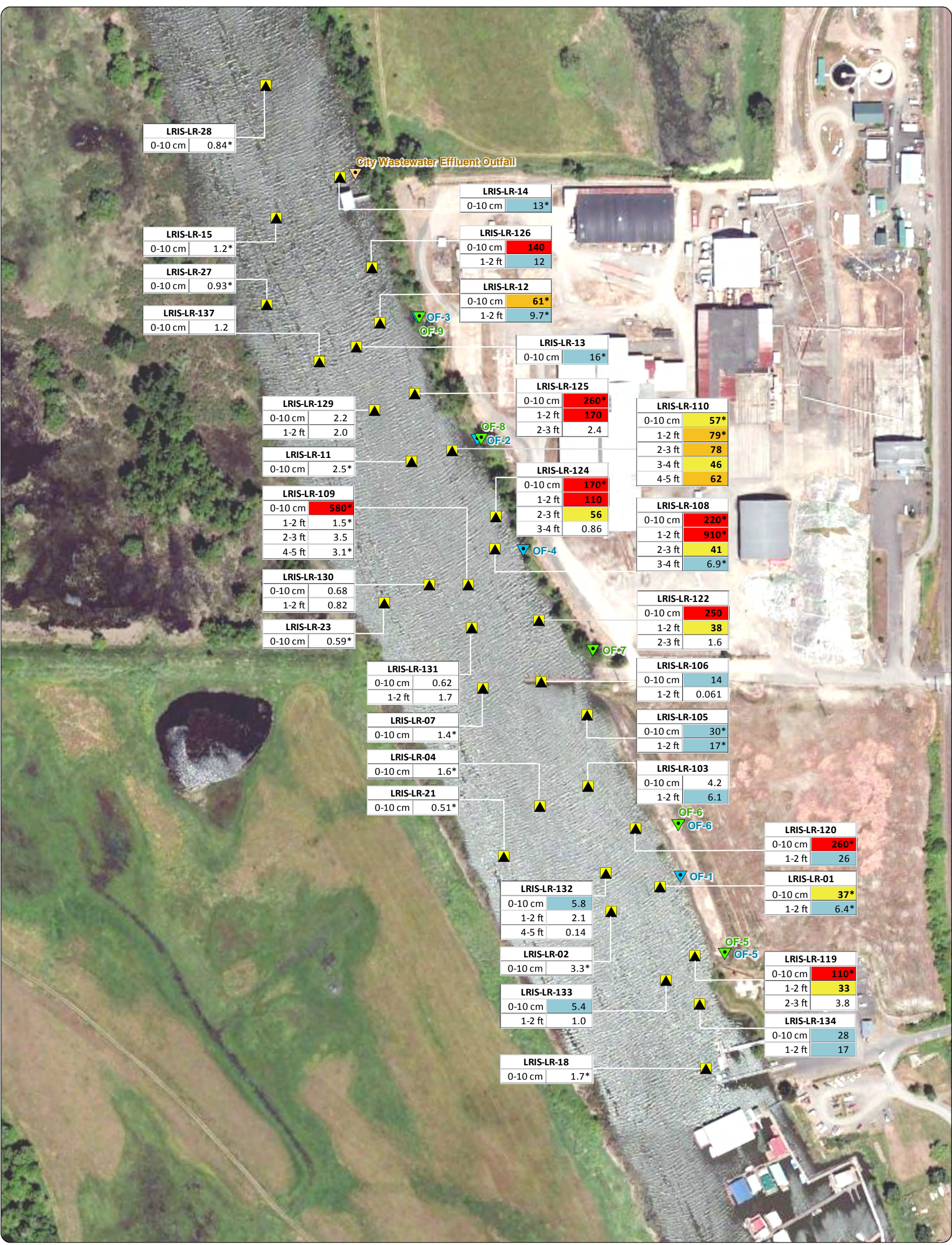


Legend

- Private Outfall
- City of Ridgefield Outfall
- Historical Outfall
- Surface Sediment Sample**
- Chemical Only
- Physical Only
- Chemical and Physical

Figure 3-1
2012 Sediment
Sample Locations
Former PWT Site
Ridgefield, Washington





Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps.

- Notes:
1. **Bold** value exceeds cleanup level.
 2. TEQ = Toxicity Equivalent.
 3. ng/kg = nanograms per kilogram.
 4. Sample stations with data associated with remedial investigation and pre-design activities are designated here with pre-design station nomenclature (e.g., LRIS-LR-119 was called LRIS-LR-19 for historical sampling).
 5. Values with * are data generated during remedial investigation activities.

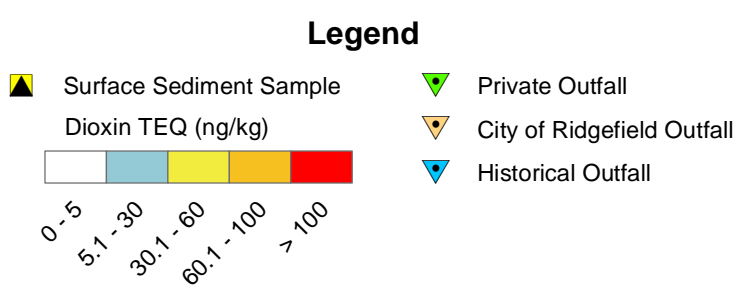
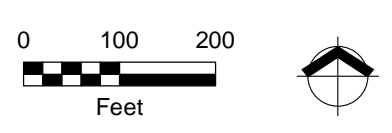
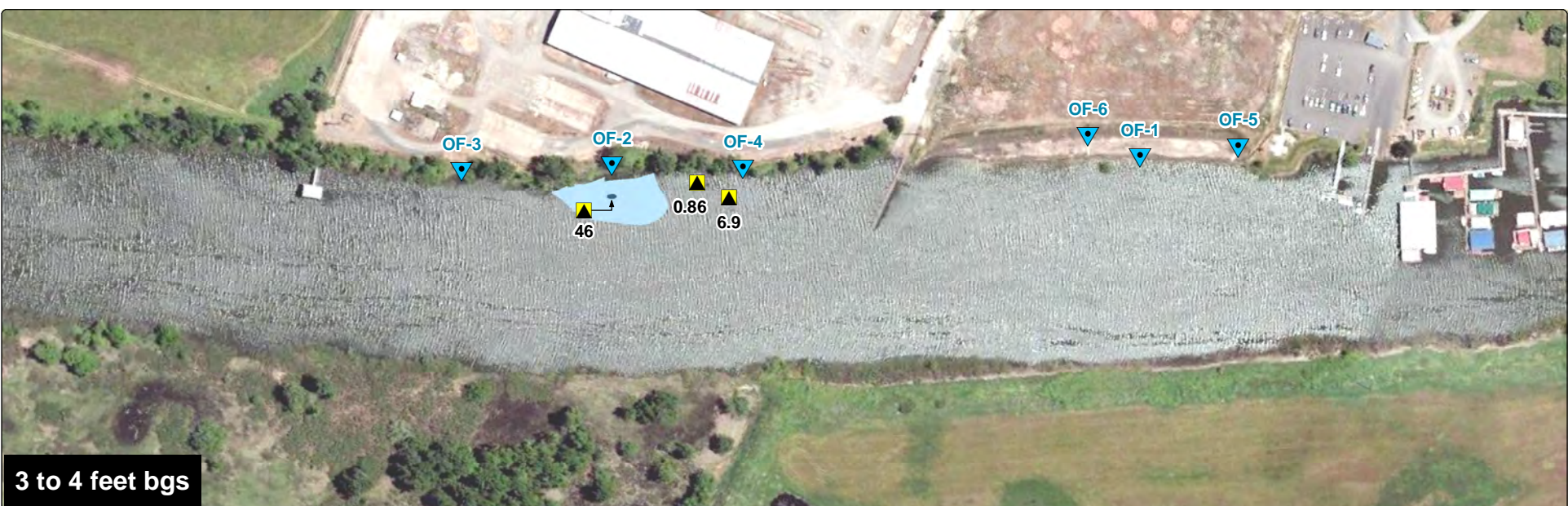
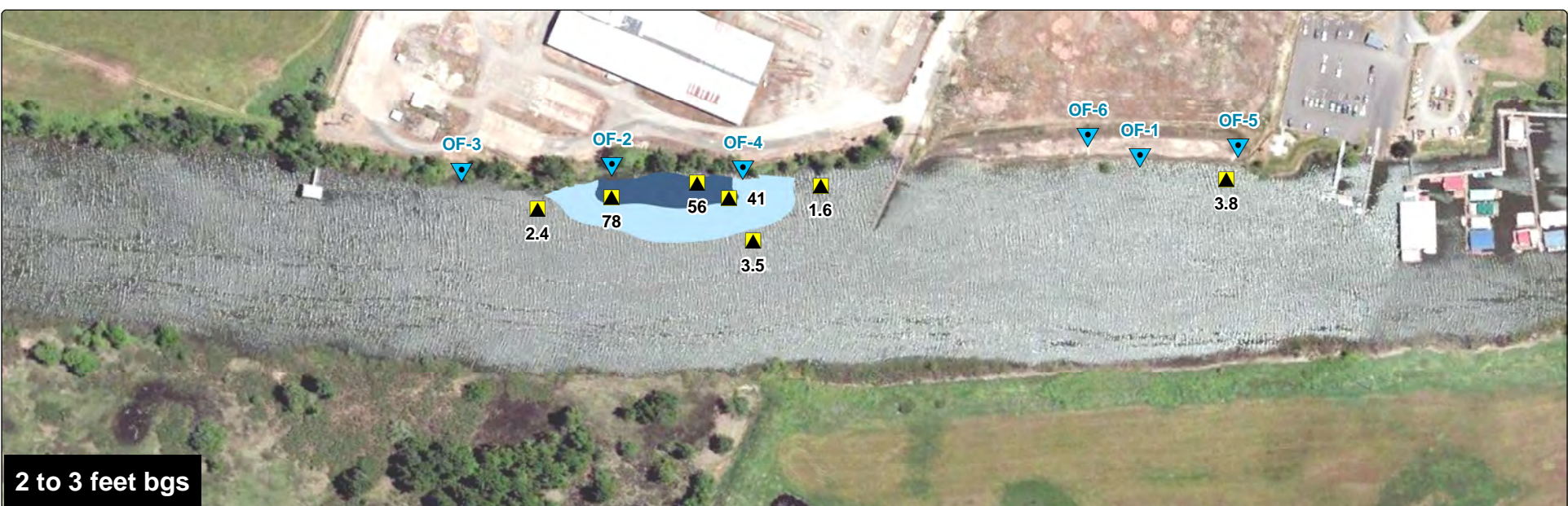
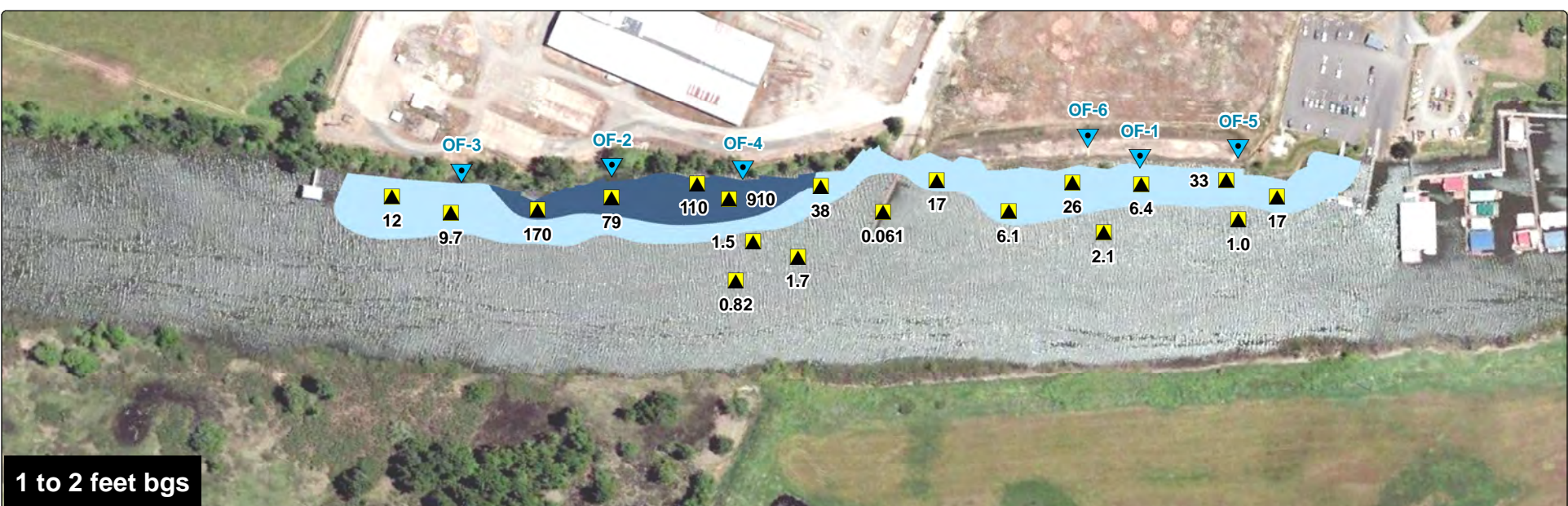
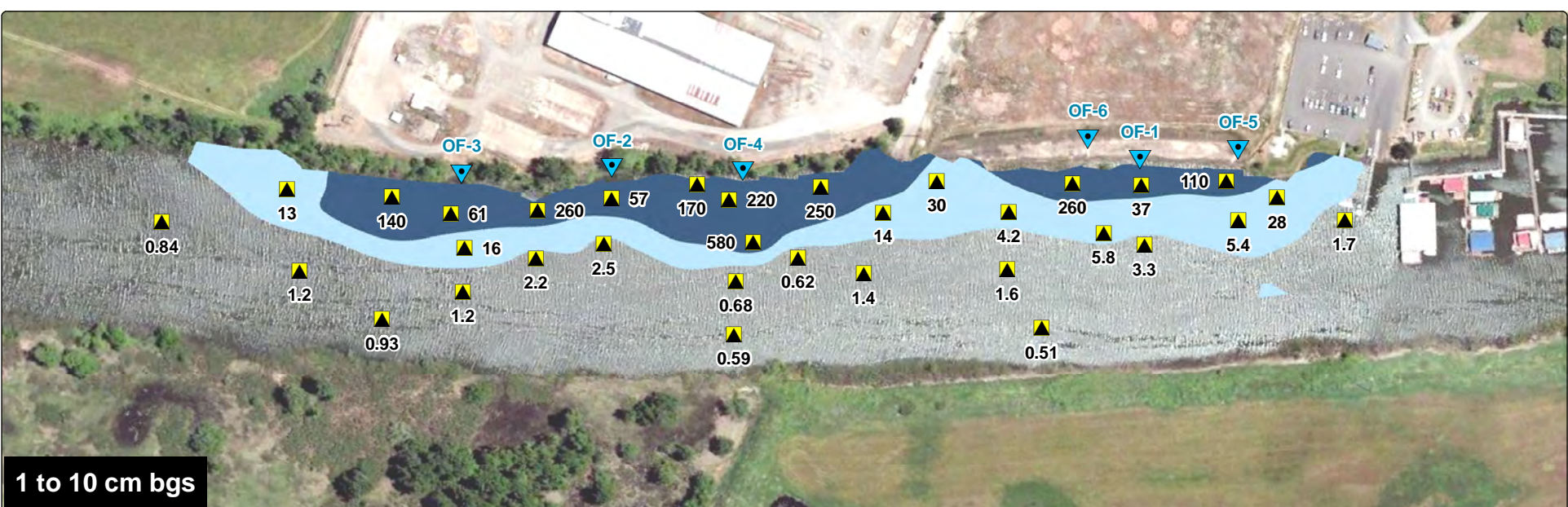


Figure 4-1
Lake River Dioxin TEQ in Sediment
Former PWT Site
Ridgefield, Washington



Path: X:\9003.01\Port of Ridgefield\40\Projects\06\Lake River Pre-Design\Report\Fig4-2_Distribution of Surface and Sub-Surface Dioxin using IDW Interpolation.mxd
 Project: 9003.01-40/06
 Approved By: rmaroon
 Produced By: rmaroon
 Print Date: 4/30/2013



Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps

- Notes:
1. ENR = Enhanced Natural Recovery.
 2. IDW = Inverse Distance Weighted.
 3. TEQ = Toxicity Equivalent.
 4. ng/kg = nanograms per kilogram.
 5. bgs = below ground surface.
 6. Surface Dioxin TEQ west of sample points was extrapolated to an assumed constant of 2.0 ng/kg.
 7. Analysis extent has been clipped to the upshore extent of dredge feasibility plus 20 feet bankward. Dredge boundaries near the shore were generally determined by projection of a 3:1 horizontal to vertical slope down from the shoreline inflection point to the required dredge depth. ENR boundaries near the shore were determined by the point where the shore slope transitions to less than a 5:1 horizontal to vertical slope.
 8. Sample concentrations were log-normalized prior to conducting interpolation because of a positively skewed histogram indicating the presence of a few very large concentrations.
 9. IDW parameters: Power=1, 200-ft x 100-ft elliptical search neighborhood at 155°, minimum samples=1, smoothing factor=0.5.

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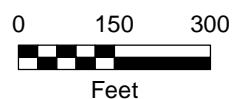
Legend

- ▲ Surface Sediment Sample
- ▼ Historical Outfall

Dioxin TEQ (ng/kg)

5.1 - 30 > 30

Figure 4-2
DISTRIBUTION OF SURFACE
AND SUB-SURFACE DIOXIN
using IDW Interpolation
 Former PWT Site
 Ridgefield, Washington





Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps

- Notes:
1. ENR = Enhanced Natural Recovery.
 2. IDW = Inverse Distance Weighted.
 3. Dredge depths denote neatline.
 4. Dredged areas will also receive 1 foot of ENR treatment.
 5. Analysis extent has been clipped to the upshore extent of dredge feasibility plus 20 feet bankward. Dredge boundaries near the shore were generally determined by projection of a 3:1 horizontal to vertical slope down from the shoreline inflection point to the required dredge depth. ENR boundaries near the shore were determined by the point where the shore slope transitions to less than a 5:1 horizontal to vertical slope.
 6. Action areas are based on the distribution of dioxin using the IDW interpolation method. IDW parameters: Power=1, 200-ft x 100-ft elliptical search neighborhood, minimum samples=1, smoothing factor=0.5.

Legend

- ▼ Historical Outfall
- ▲ Surface Sediment Sample
- Area of Remedy Reassignment

Remedial Action Areas

ENR Only	1-ft Dredge	2-ft Dredge	3-ft Dredge	3-ft Dredge*
----------	-------------	-------------	-------------	--------------

*Area projected to have remaining sub-surface dioxin toxicity equivalent (TEQ) exceeding 30 ng/kg. See text for details.

Figure 4-3
Proposed Remedial Action Areas
based on 10x10-foot Grid

Former PWT Site
 Ridgefield, Washington

Methodology Notes: 10x10-ft grid cells were assigned dredge depths based on the Majority Zonal Overlay method. This method assigns a remedial action to each 10x10-ft grid cell by evaluating the underlying surface generated from a higher resolution (1x1-ft grid) composite of remedial actions assigned based on the evaluation of contamination to a depth of 4 feet using the IDW interpolation method. The Majority method counts each of the underlying 1x1-ft cells and assigns the value of the cell with the greatest frequency to the 10x10-ft grid cell.

0 100 200
 Feet



Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps

- Notes:
1. ENR = Enhanced Natural Recovery.
 2. IDW = Inverse Distance Weighted.
 3. TEQ = Toxicity Equivalent.
 4. ng/kg = nanograms per kilogram.
 5. Post-remedy concentrations were log-normalized prior to conducting interpolation to maintain consistent methodology with the interpolation of the pre-remedy surface which presented a positively skewed histogram.
 6. Analysis extent has been clipped to the upshore extent of dredge feasibility plus 20 feet bankward. Dredge boundaries near the shore were generally determined by projection of a 3:1 horizontal to vertical slope down from the shoreline inflection point to the required dredge depth. ENR boundaries near the shore were determined by the point where the shore slope transitions to less than a 5:1 horizontal to vertical slope.
 7. IDW parameters: Power=1, 200-ft x 100-ft elliptical search neighborhood at 155°, minimum samples=1, smoothing factor=0.5.

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Figure 4-4
Post-Remedy Distribution
of Dioxin in Sediment

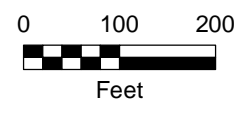
Former PWT Site
Ridgfield, Washington

Legend

- ▲ Surface Sediment Sample
- ▼ Historical Outfall

Surface Dioxin TEQ (ng/kg)

5.1 - 30 > 30



APPENDIX A

SURFACE SEDIMENT PHOTOGRAPHS





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

1

Date

December 4, 2012

Description

LRIS-LR-126



Photo No.

2

Date

December 4, 2012

Description

LRIS-LR-137





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

3

Date

December 4, 2012

Description

LRIS-LR-129



Photo No.

4

Date

December 4, 2012

Description

LRIS-LR-130





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

5

Date

December 4, 2012

Description

LRIS-LR-136



Photo No.

6

Date

December 4, 2012

Description

LRIS-LR-131





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

7

Date

December 4, 2012

Description

LRIS-LR-122



Photo No.

8

Date

December 4, 2012

Description

LRIS-LR-106





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

9

Date

December 4, 2012

Description

LRIS-LR-103



Photo No.

10

Date

December 4, 2012

Description

LRIS-LR-132





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

11

Date

December 4, 2012

Description

LRIS-LR-133



Photo No.

12

Date

December 4, 2012

Description

LRIS-LR-135





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

13

Date

December 4, 2012

Description

LRIS-LR-134



APPENDIX B

SEDIMENT CORE PHOTOGRAPHS





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

1

Date

December 2, 2012

Description

LRIS-LR-134

Interval

0-2 feet bml

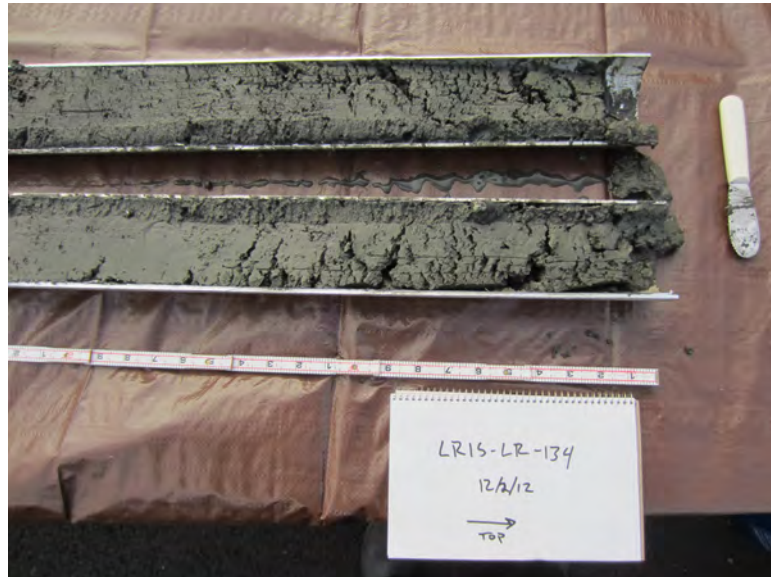


Photo No.

2

Date

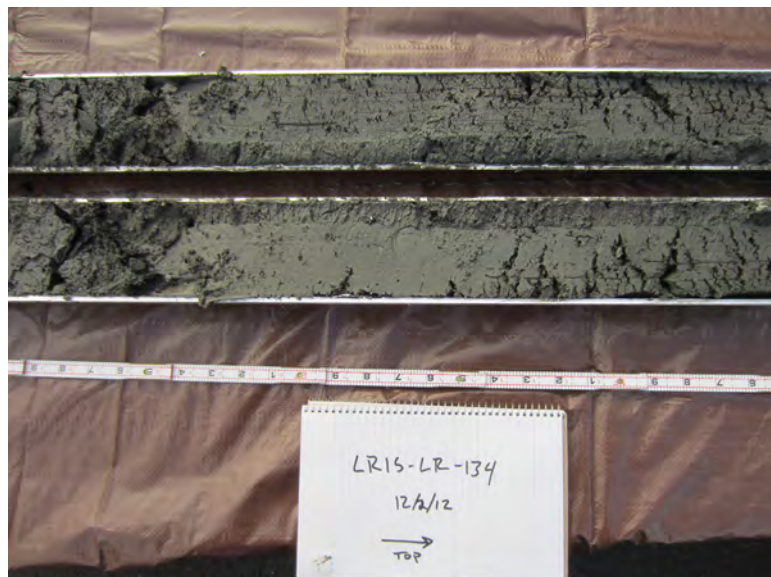
December 2, 2012

Description

LRIS-LR-134

Interval

1-3 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

3

Date

December 2, 2012

Description

LRIS-LR-134

Interval

2-4 feet bml

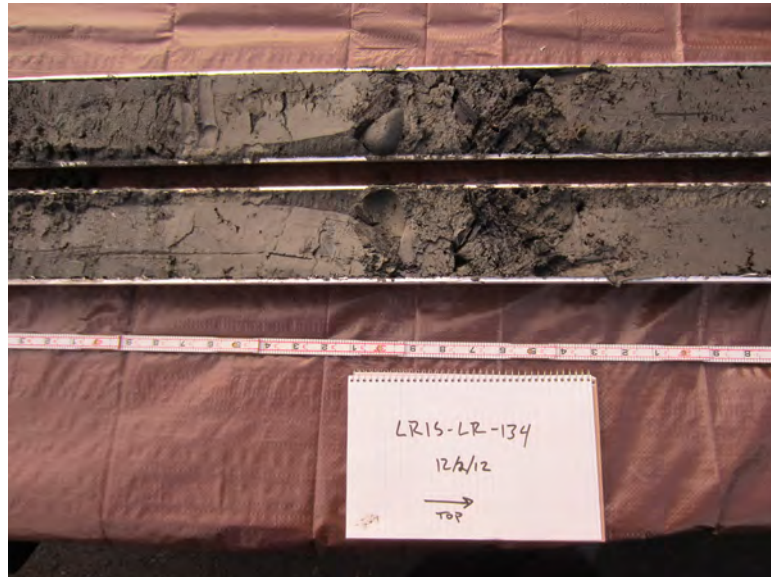


Photo No.

4

Date

December 2, 2012

Description

LRIS-LR-134

Interval

3-5 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

5

Date

December 2, 2012

Description

LRIS-LR-137

Interval

0-2 feet bml

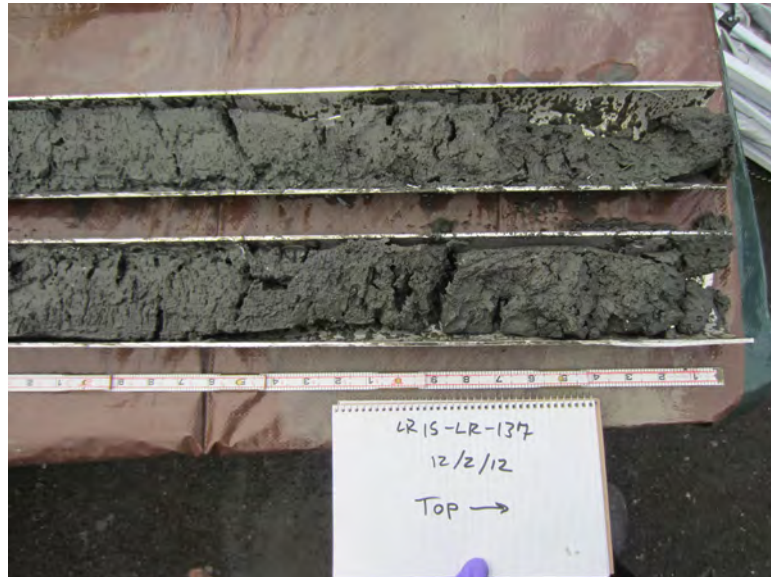


Photo No.

6

Date

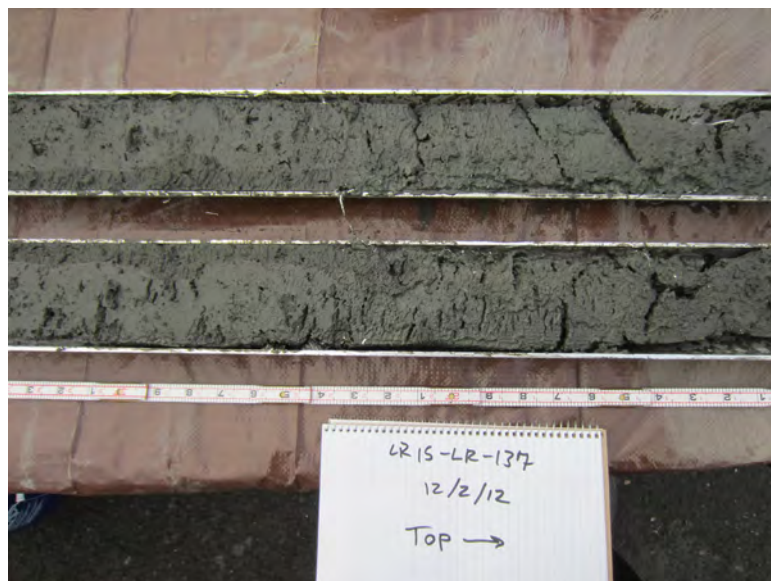
December 2, 2012

Description

LRIS-LR-137

Interval

1-3 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

7

Date

December 2, 2012

Description

LRIS-LR-137

Interval

3-4 feet bml

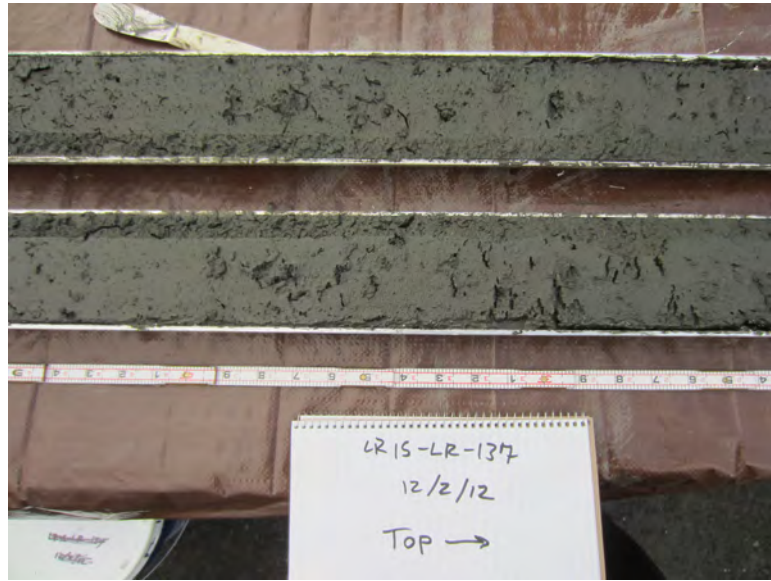


Photo No.

8

Date

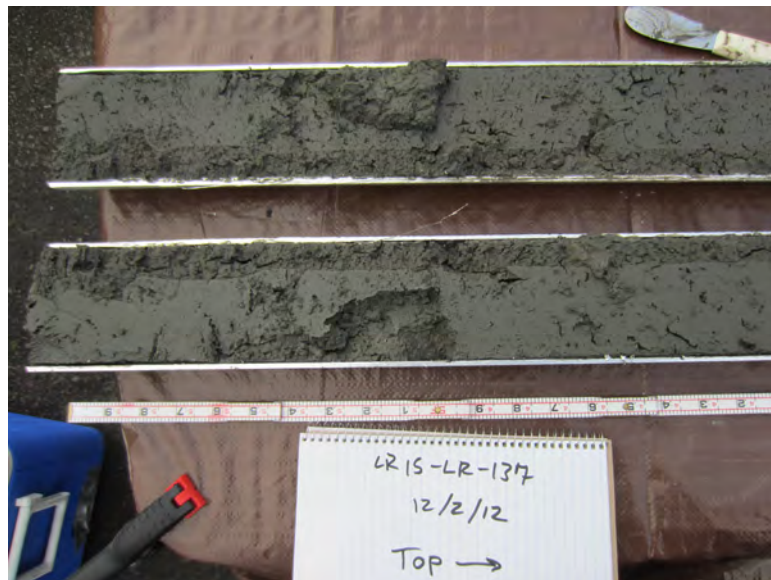
December 2, 2012

Description

LRIS-LR-137

Interval

4-6.2 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

9

Date

December 2, 2012

Description

LRIS-LR-126

Interval

0-2 feet bml

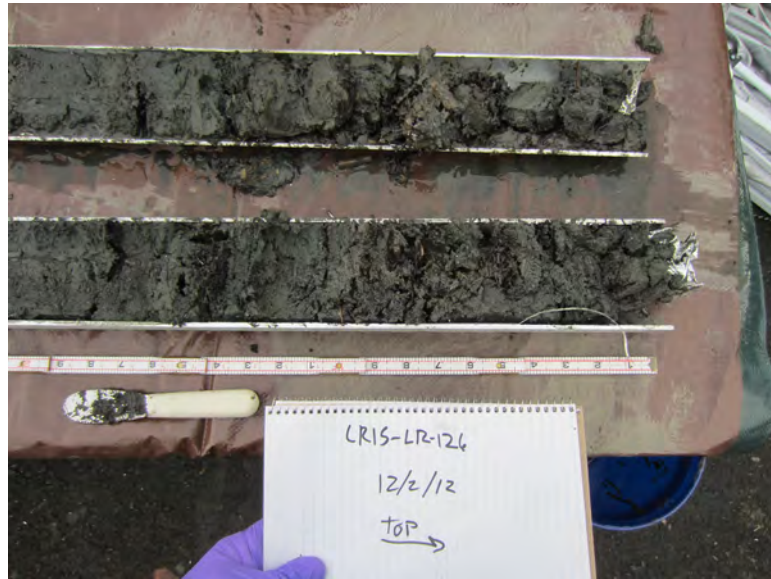


Photo No.

10

Date

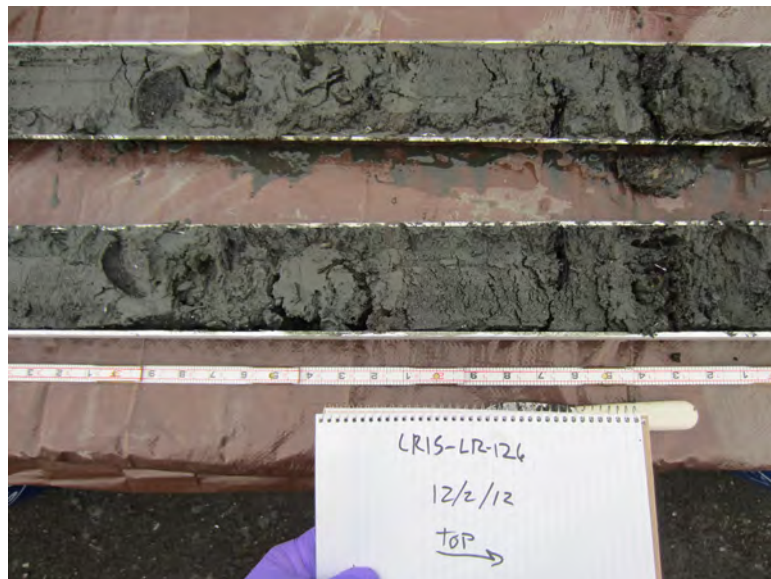
December 2, 2012

Description

LRIS-LR-126

Interval

1-3 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

11

Date

December 2, 2012

Description

LRIS-LR-126

Interval

3-4 feet bml

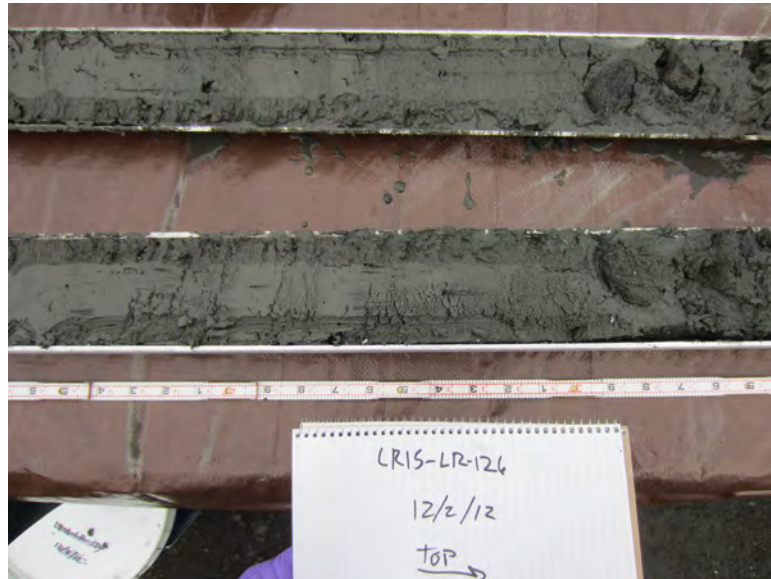


Photo No.

12

Date

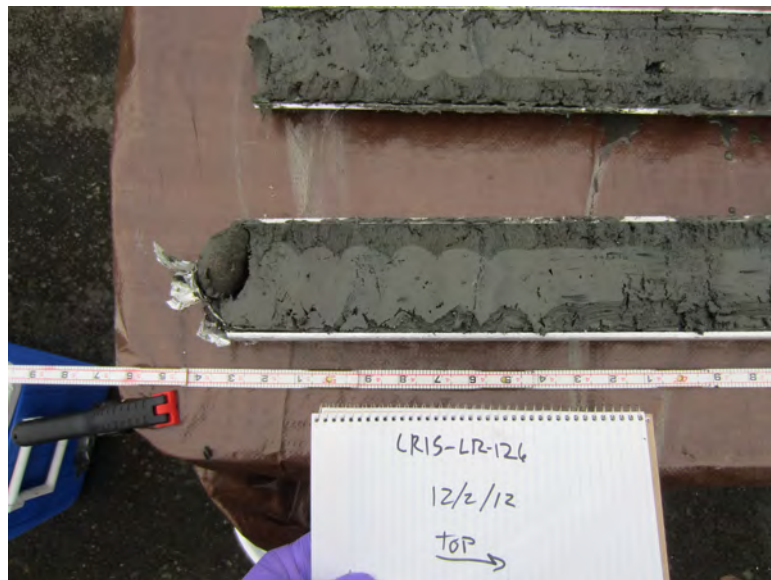
December 2, 2012

Description

LRIS-LR-126

Interval

4-5.5 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

13

Date

December 2, 2012

Description

LRIS-LR-125

Interval

0-2 feet bml

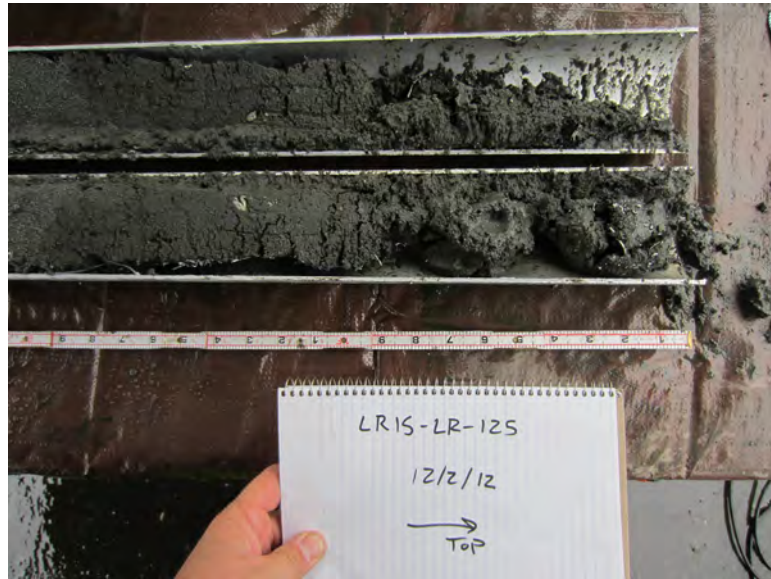


Photo No.

14

Date

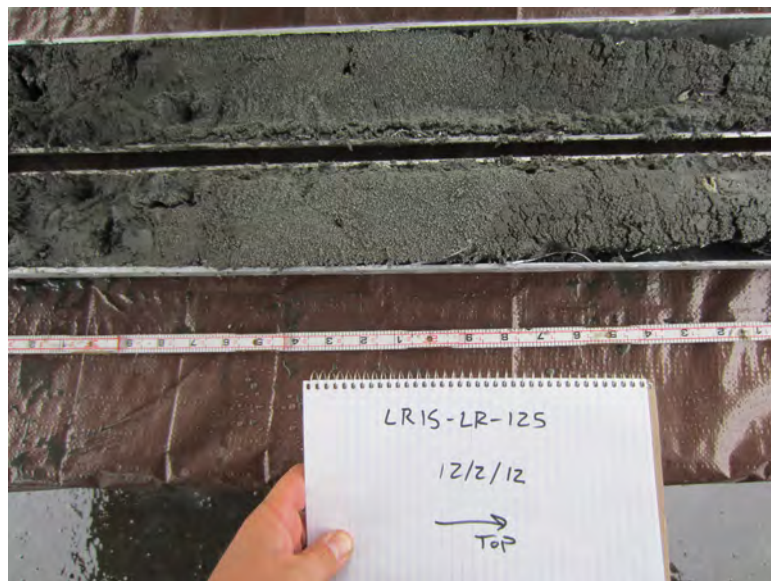
December 2, 2012

Description

LRIS-LR-125

Interval

1-3 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

15

Date

December 2, 2012

Description

LRIS-LR-125

Interval

3-4.2 feet bml

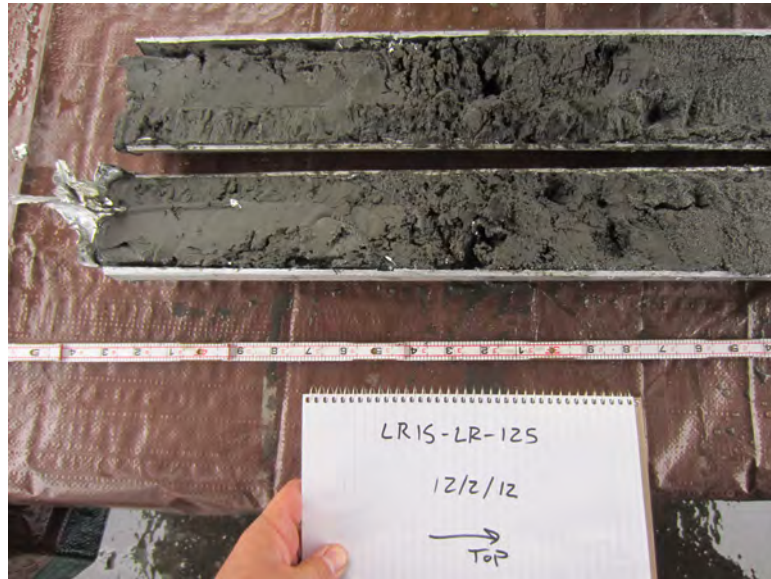


Photo No.

16

Date

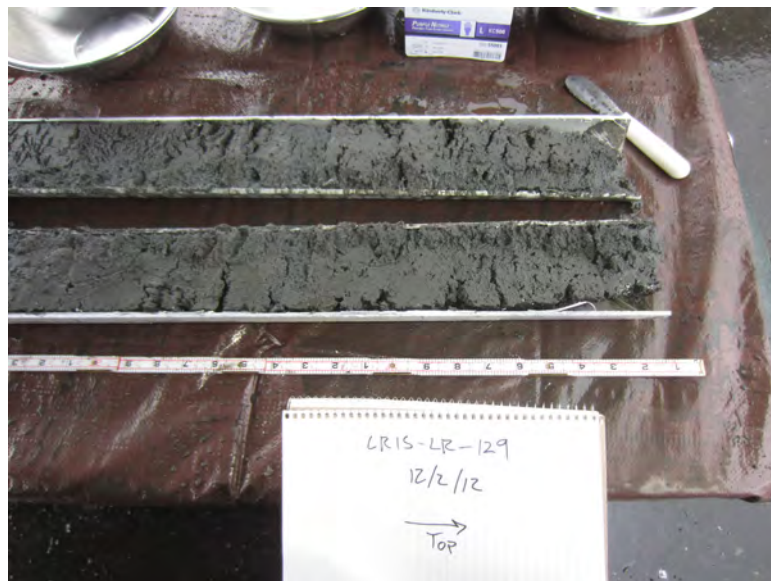
December 2, 2012

Description

LRIS-LR-129

Interval

0-2 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

17

Date

December 2, 2012

Description

LRIS-LR-129

Interval

1-3 feet bml

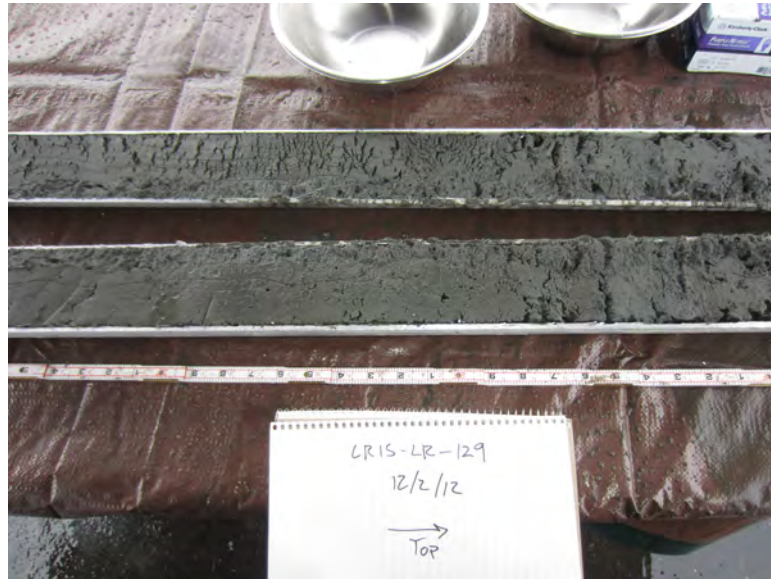


Photo No.

18

Date

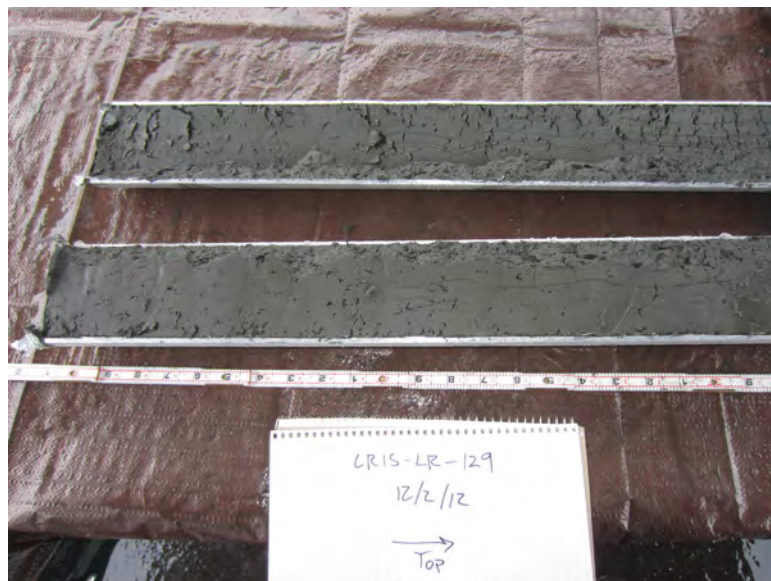
December 2, 2012

Description

LRIS-LR-129

Interval

3-5 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

19

Date

December 2, 2012

Description

LRIS-LR-130

Interval

0-2 feet bml

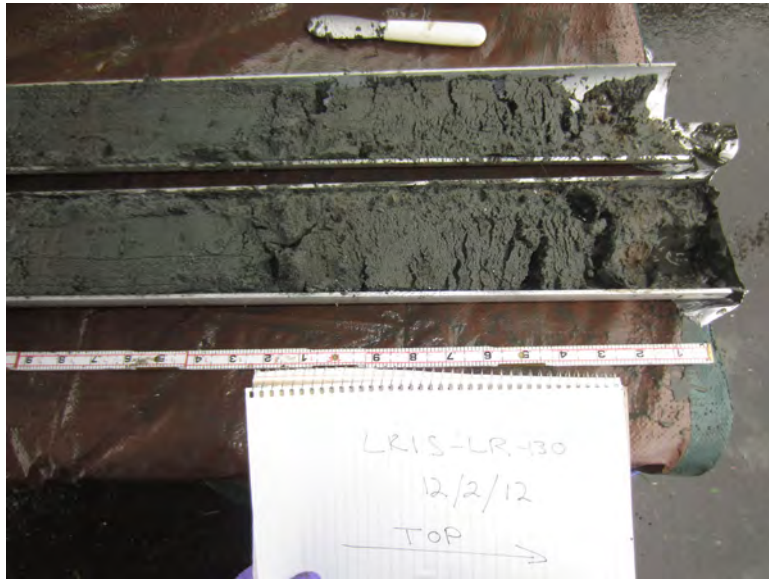


Photo No.

20

Date

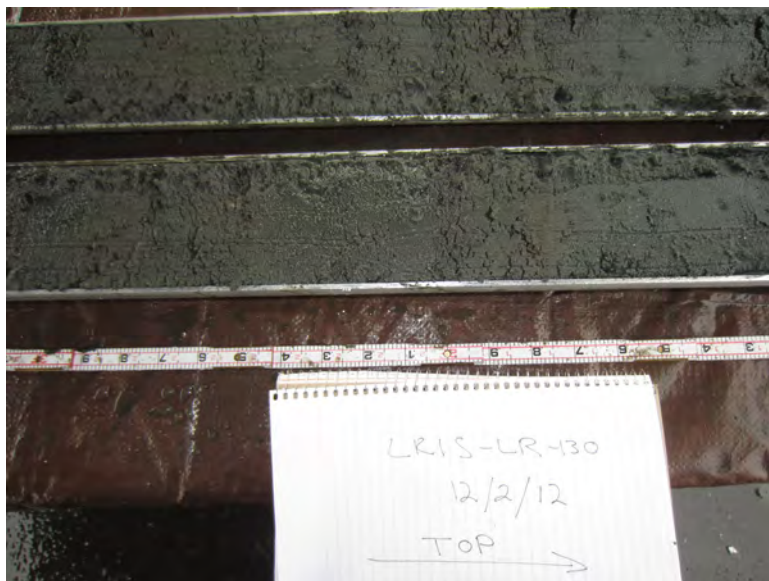
December 2, 2012

Description

LRIS-LR-130

Interval

1-3 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

21

Date

December 2, 2012

Description

LRIS-LR-130

Interval

3-4 feet bml

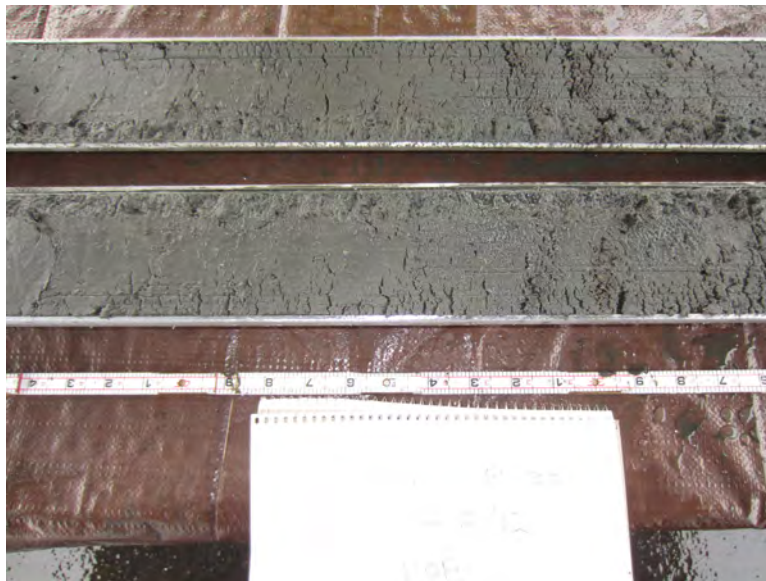


Photo No.

22

Date

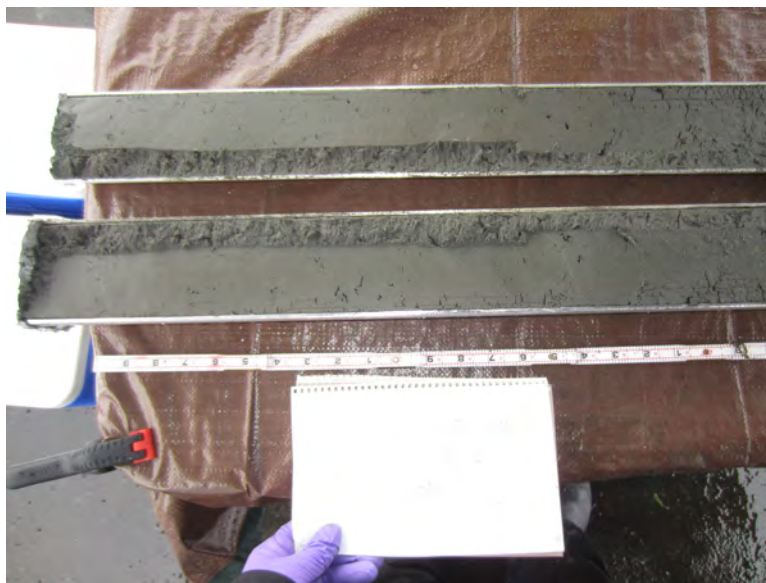
December 2, 2012

Description

LRIS-LR-130

Interval

4-6.3 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

23

Date

December 2, 2012

Description

LRIS-LR-109

Interval

0-2 feet bml

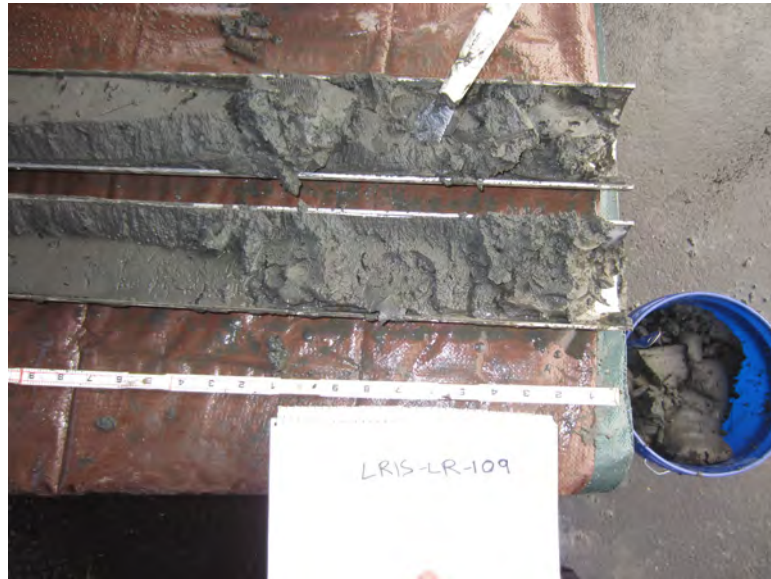


Photo No.

24

Date

December 2, 2012

Description

LRIS-LR-109

Interval

1-3 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

25

Date

December 2, 2012

Description

LRIS-LR-109

Interval

3-5 feet bml



Photo No.

26

Date

December 2, 2012

Description

LRIS-LR-109

Interval

4-6.3 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

27

Date

December 2, 2012

Description

LRIS-LR-131

Interval

0-2 feet bml



Photo No.

28

Date

December 2, 2012

Description

LRIS-LR-131

Interval

1-3 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

29

Date

December 2, 2012

Description

LRIS-LR-131

Interval

2-4 feet bml



Photo No.

30

Date

December 2, 2012

Description

LRIS-LR-136

Interval

0-2 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

31

Date

December 2, 2012

Description

LRIS-LR-136

Interval

1-3 feet bml

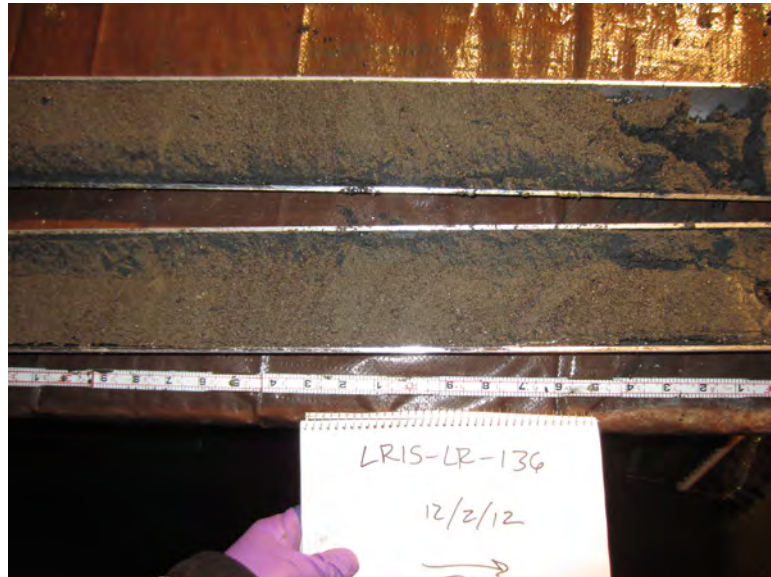


Photo No.

32

Date

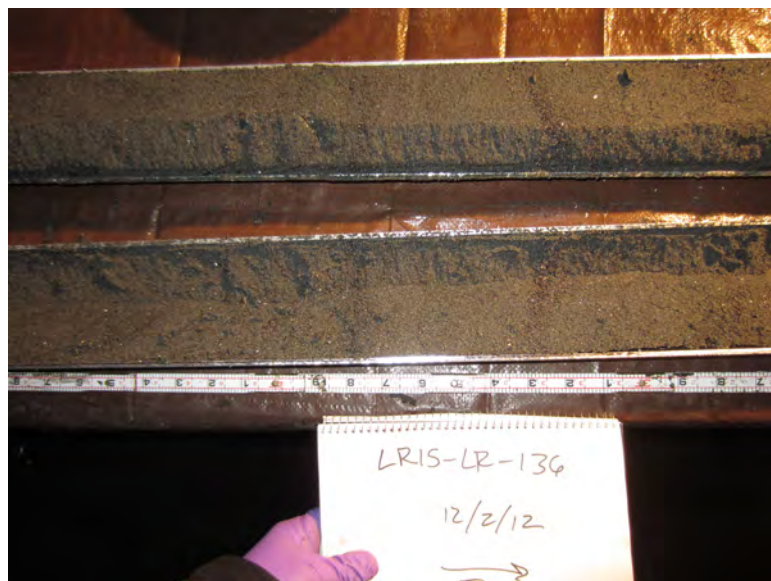
December 2, 2012

Description

LRIS-LR-136

Interval

3-5 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

33

Date

December 2, 2012

Description

LRIS-LR-136

Interval

4-5.7 feet bml

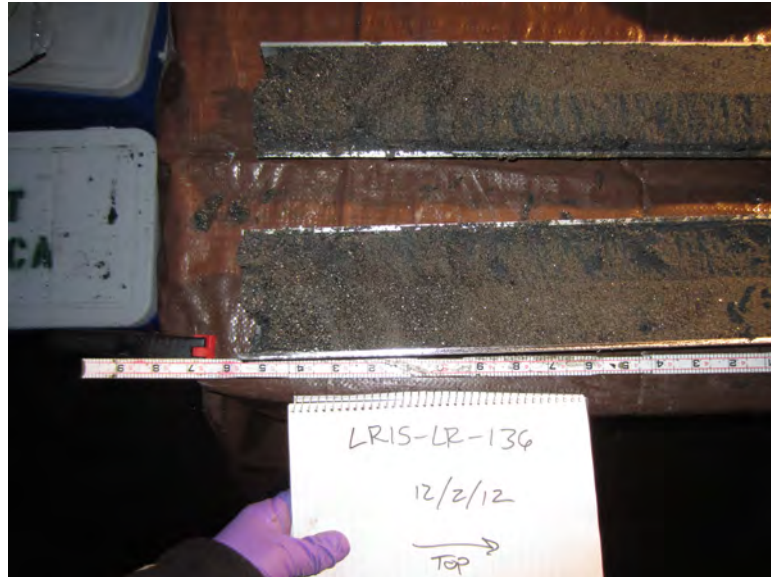


Photo No.

34

Date

December 2, 2012

Description

LRIS-LR-106

Interval

0-2 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

35

Date

December 2, 2012

Description

LRIS-LR-106

Interval

1-3 feet bml



Photo No.

36

Date

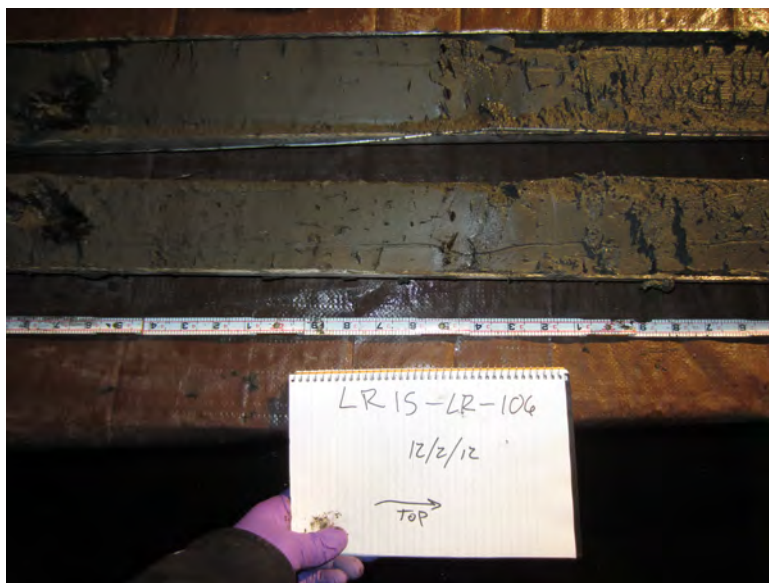
December 2, 2012

Description

LRIS-LR-106

Interval

3-5 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

37

Date

December 2, 2012

Description

LRIS-LR-106

Interval

4-6.5 feet bml



Photo No.

38

Date

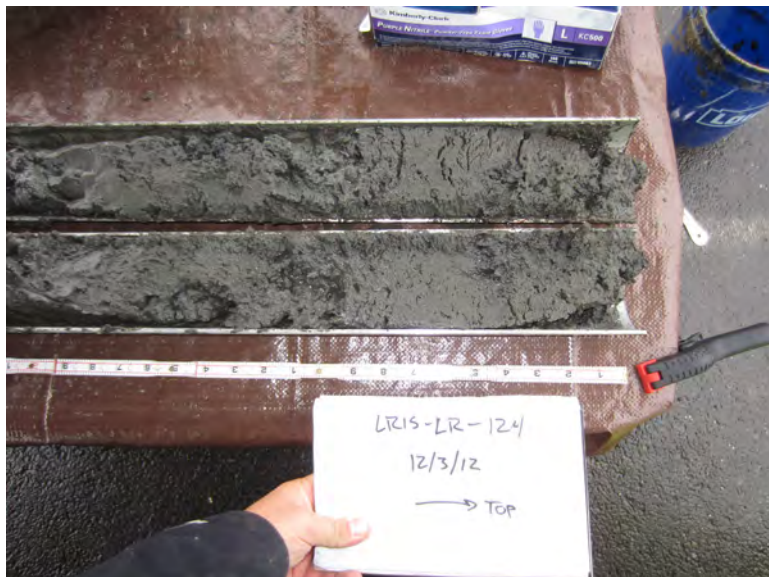
December 3, 2012

Description

LRIS-LR-124

Interval

0-2 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

39

Date

December 3, 2012

Description

LRIS-LR-124

Interval

1-3 feet bml

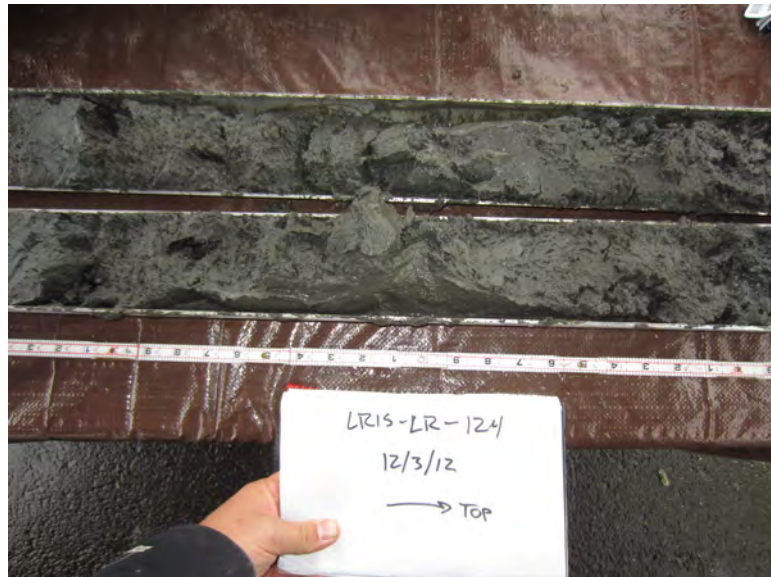


Photo No.

40

Date

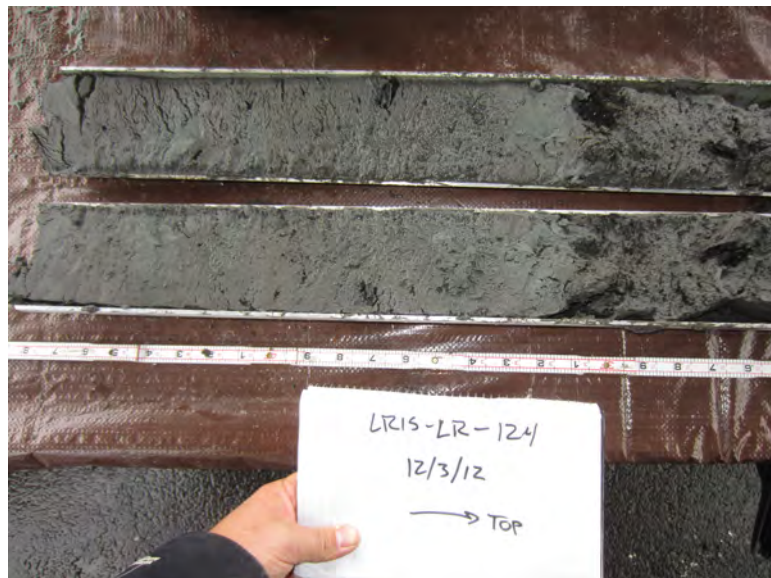
December 3, 2012

Description

LRIS-LR-124

Interval

3-4.7 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

41

Date

December 3, 2012

Description

LRIS-LR-110

Interval

0-2 feet bml



Photo No.

42

Date

December 3, 2012

Description

LRIS-LR-110

Interval

1-3 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

43

Date

December 3, 2012

Description

LRIS-LR-110

Interval

3-4.5 feet bml

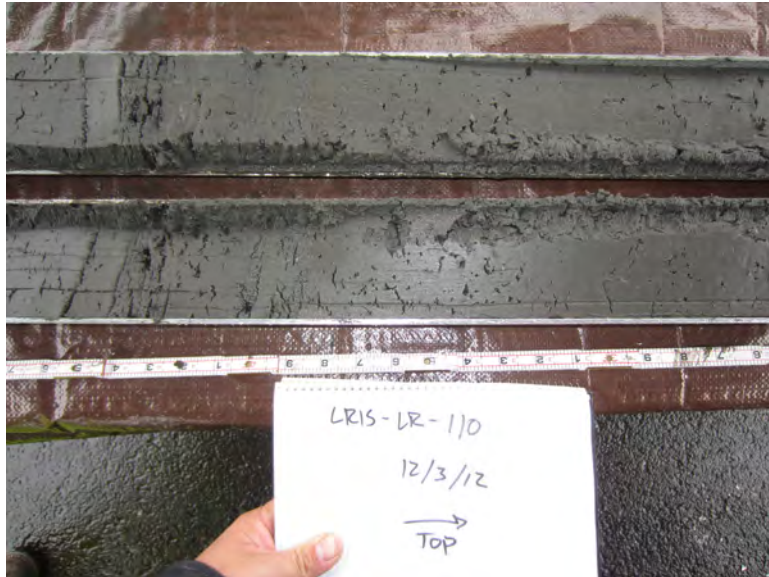


Photo No.

44

Date

December 3, 2012

Description

LRIS-LR-110

Interval

4.5-6.6 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

45

Date

December 3, 2012

Description

LRIS-LR-108

Interval

0-2 feet bml

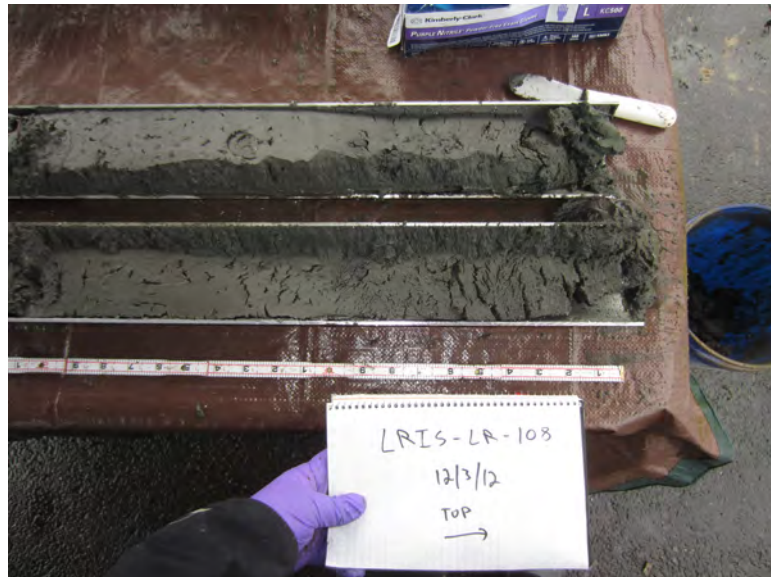


Photo No.

46

Date

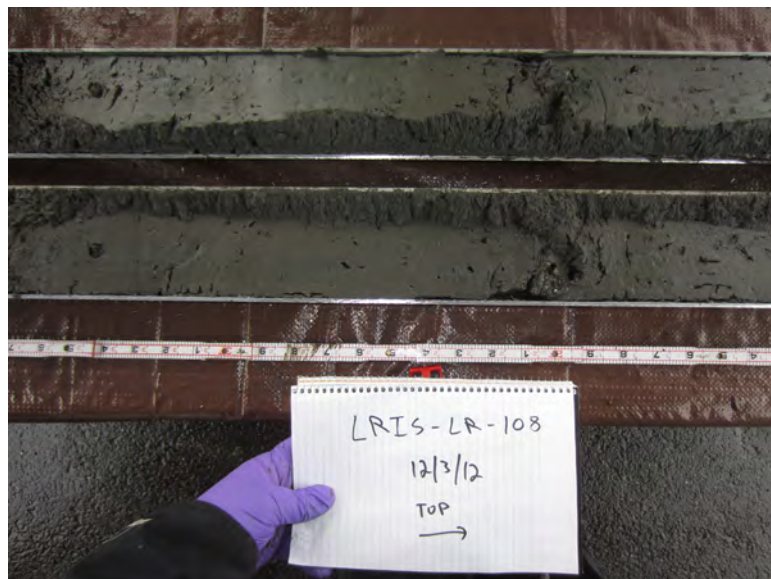
December 3, 2012

Description

LRIS-LR-108

Interval

1.5-3.5 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

47

Date

December 3, 2012

Description

LRIS-LR-108

Interval

3-5 feet bml

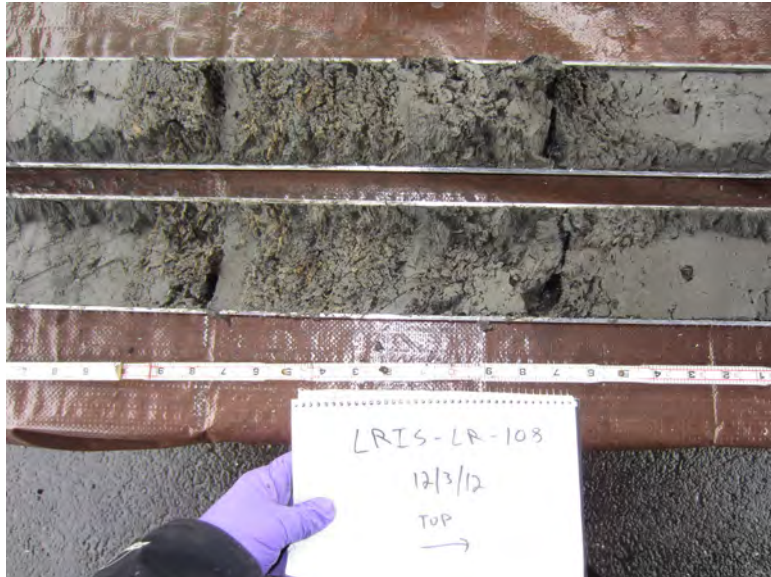


Photo No.

48

Date

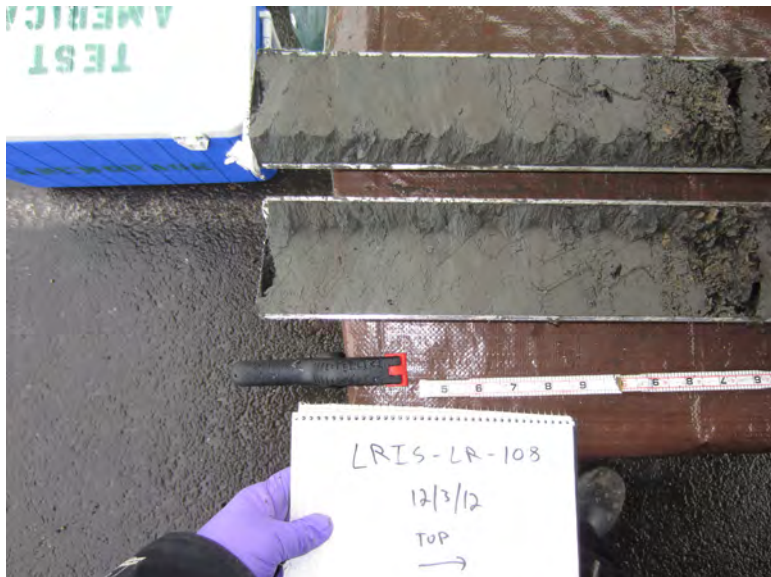
December 3, 2012

Description

LRIS-LR-108

Interval

5-6.2 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

49

Date

December 3, 2012

Description

LRIS-LR-122

Interval

0-2 feet bml

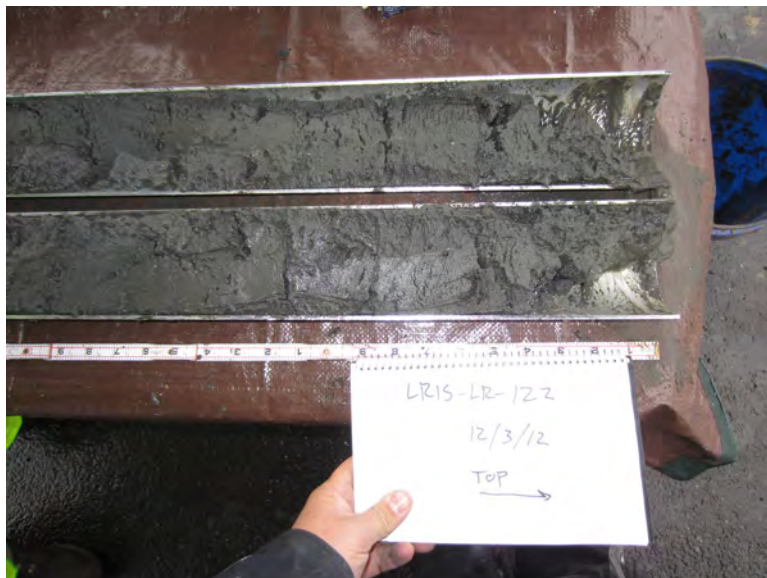


Photo No.

50

Date

December 3, 2012

Description

LRIS-LR-122

Interval

1.5-3.5 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

51

Date

December 3, 2012

Description

LRIS-LR-122

Interval

3.5-5.5 feet bml

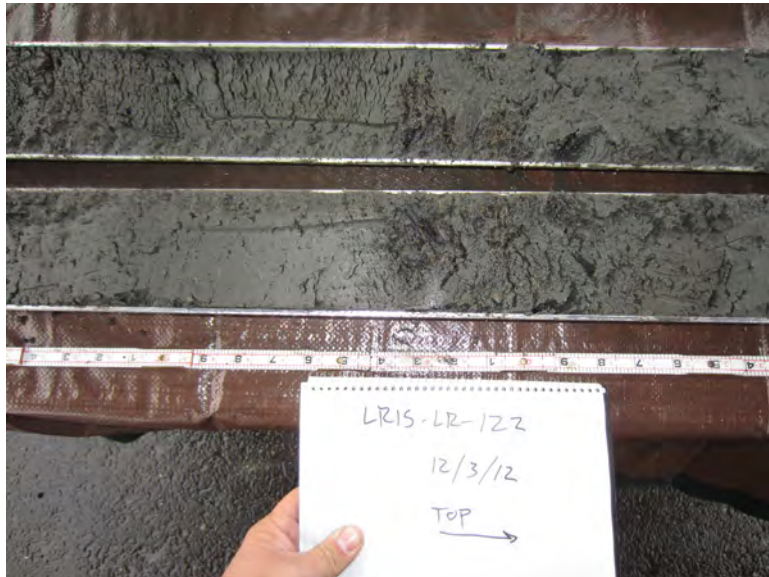


Photo No.

52

Date

December 3, 2012

Description

LRIS-LR-122

Interval

5.5-6.05 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

53

Date

December 3, 2012

Description

LRIS-LR-120

Interval

0-2 feet bml



Photo No.

54

Date

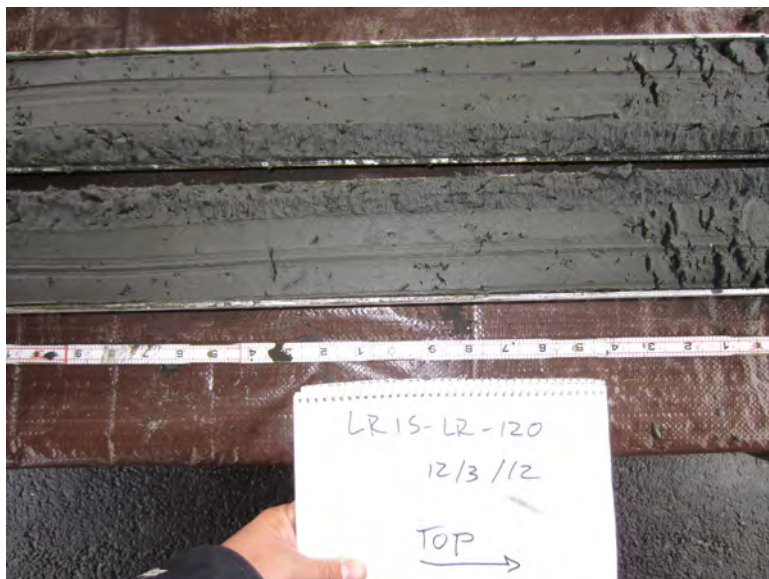
December 3, 2012

Description

LRIS-LR-120

Interval

1-3 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

55

Date

December 3, 2012

Description

LRIS-LR-120

Interval

3-4.5 feet bml

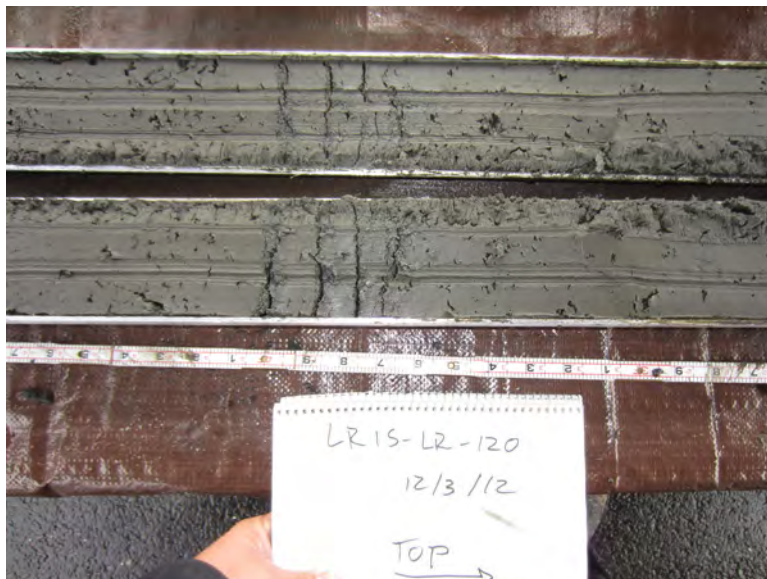


Photo No.

56

Date

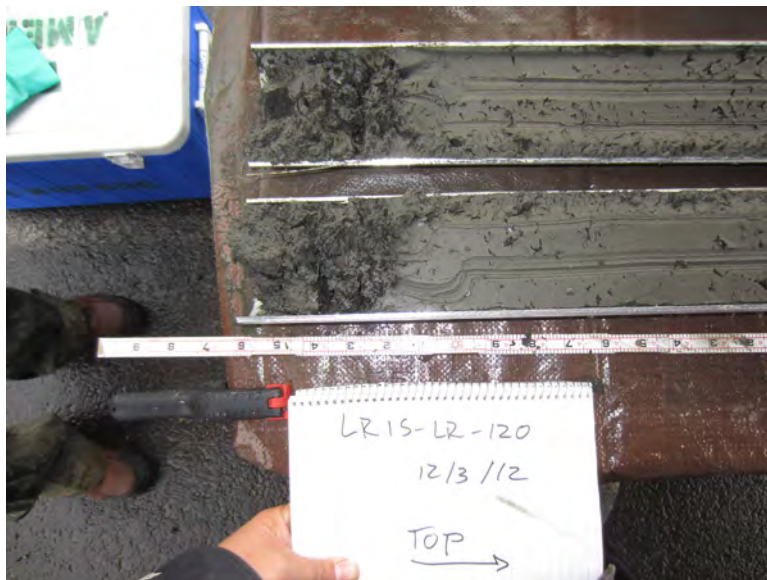
December 3, 2012

Description

LRIS-LR-120

Interval

4-5.5 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

57

Date

December 3, 2012

Description

LRIS-LR-103

Interval

0-2 feet bml

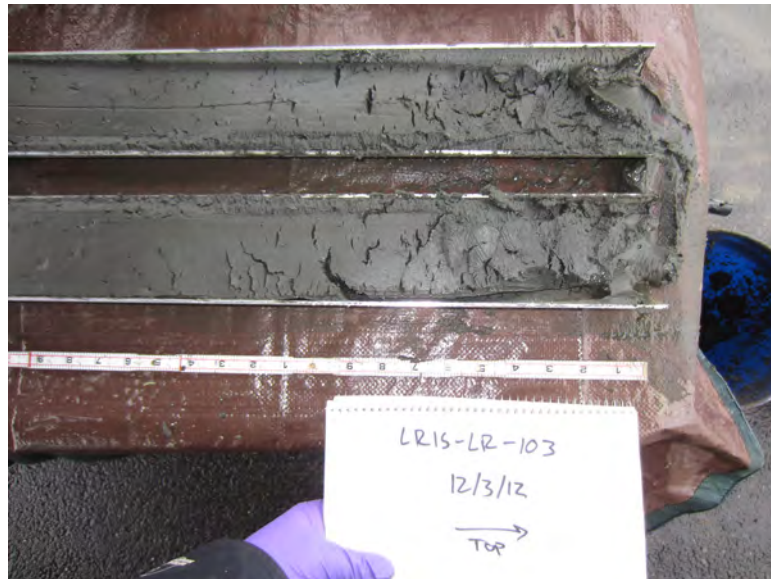


Photo No.

58

Date

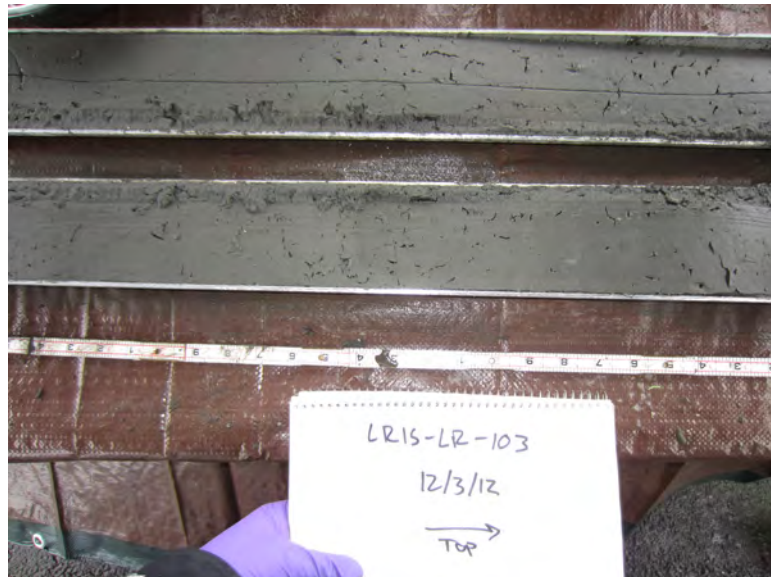
December 3, 2012

Description

LRIS-LR-103

Interval

1-3.5 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

59

Date

December 3, 2012

Description

LRIS-LR-103

Interval

3.5-5 feet bml



Photo No.

60

Date

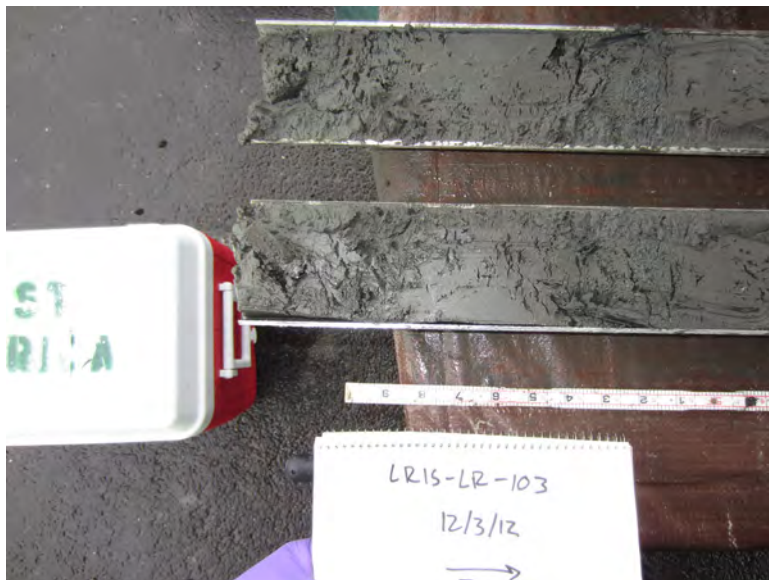
December 3, 2012

Description

LRIS-LR-103

Interval

5-6.3 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

61

Date

December 3, 2012

Description

LRIS-LR-119

Interval

0-2 feet bml



Photo No.

62

Date

December 3, 2012

Description

LRIS-LR-119

Interval

1.5-3.5 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

63

Date

December 3, 2012

Description

LRIS-LR-119

Interval

3.5-5.7 feet bml



Photo No.

64

Date

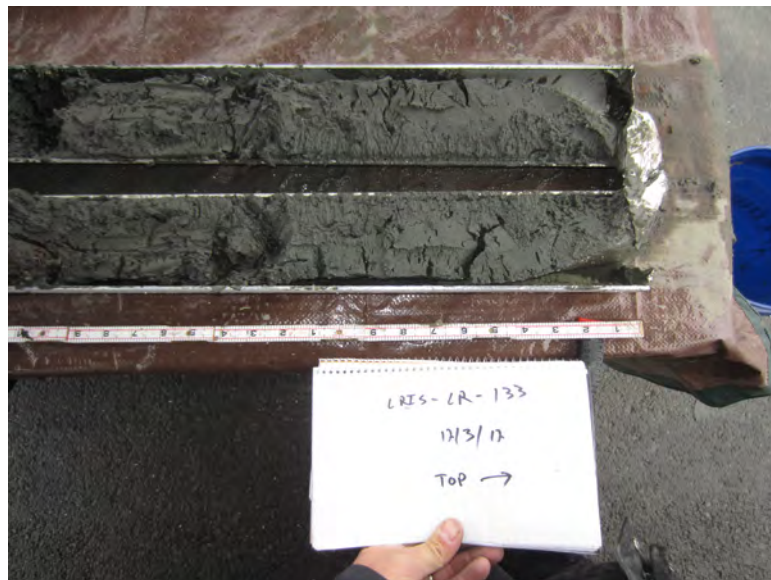
December 3, 2012

Description

LRIS-LR-133

Interval

0-2 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

65

Date

December 3, 2012

Description

LRIS-LR-133

Interval

1.5-3.5 feet bml

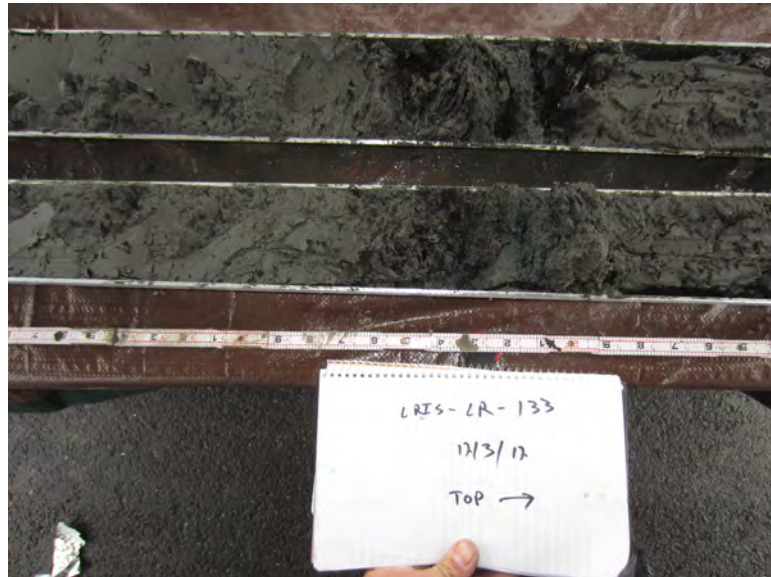


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66

Date

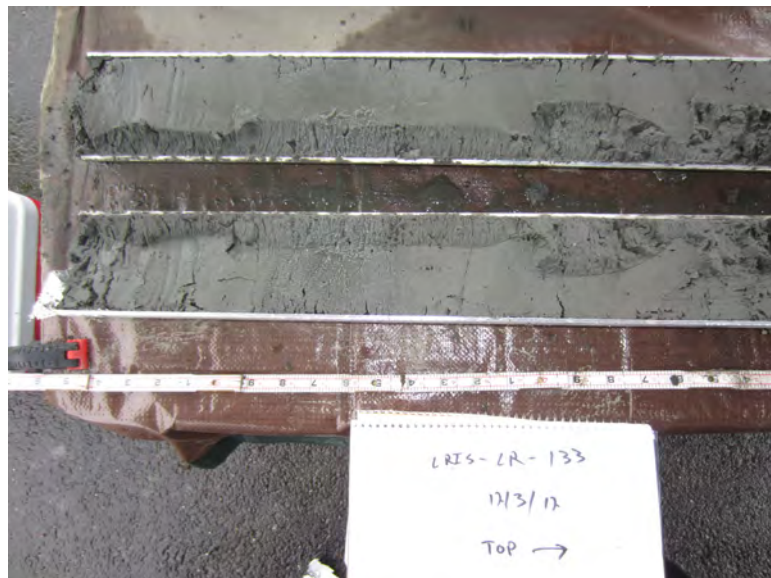
December 3, 2012

Description

LRIS-LR-133

Interval

3.5-5.5 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

67

Date

December 3, 2012

Description

LRIS-LR-135

Interval

0-2 feet bml

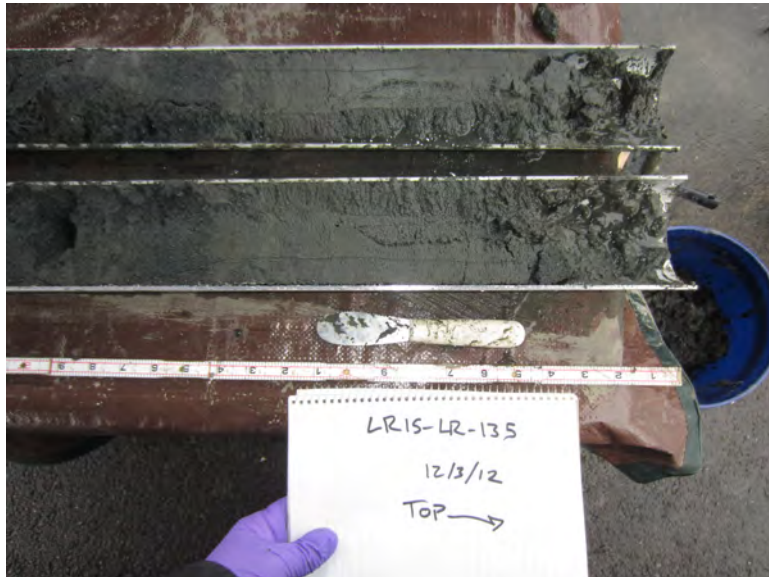


Photo No.

68

Date

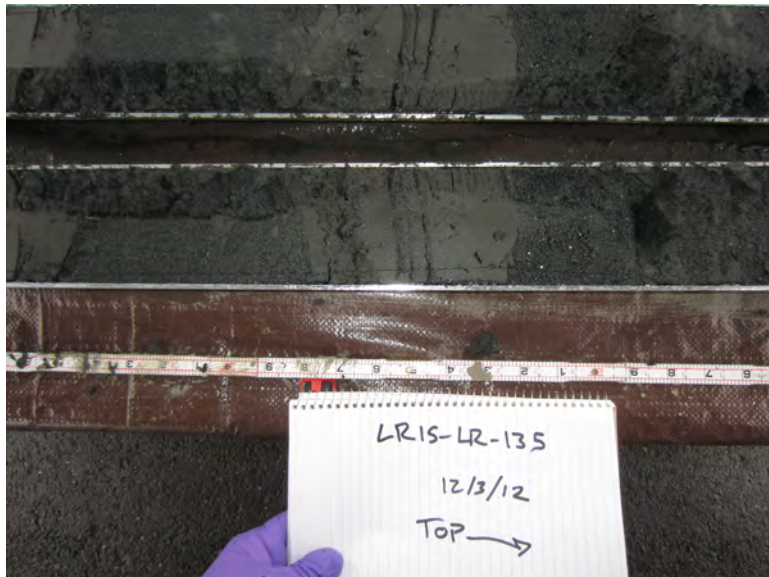
December 3, 2012

Description

LRIS-LR-135

Interval

1.5-3.5 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

69

Date

December 3, 2012

Description

LRIS-LR-135

Interval

3-5.5 feet bml

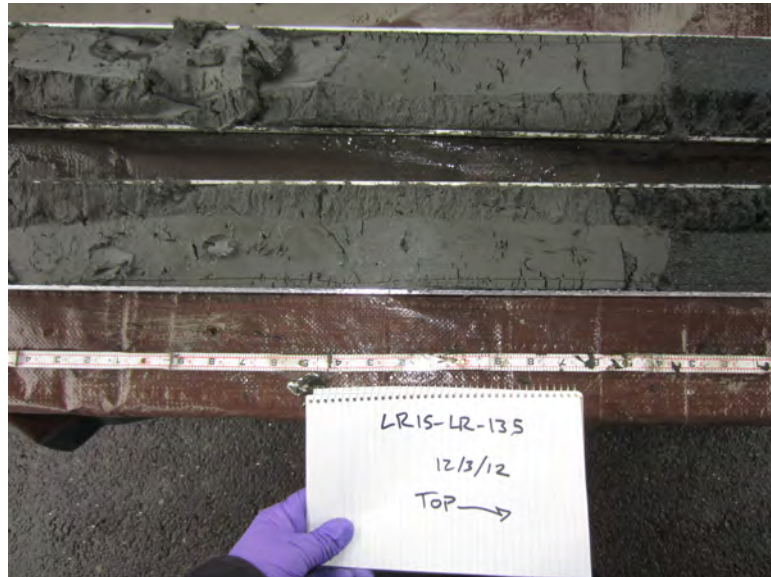


Photo No.

70

Date

December 3, 2012

Description

LRIS-LR-135

Interval

4.5-6.1 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

71

Date

December 3, 2012

Description

LRIS-LR-132;
mislabeled as LR-135
in field

Interval

0-2 feet bml



Photo No.

72

Date

December 3, 2012

Description

LRIS-LR-132;
mislabeled as LR-135
in field

Interval

1-3.5 feet bml





PHOTOGRAPHS

Project Name: Port of Ridgefield Predesign
Sampling
Project Number: 9003.01.40

Photo No.

73

Date

December 3, 2012

Description

LRIS-LR-132;
mislabeled as LR-135
in field

Interval

3-5 feet bml



Photo No.

74

Date

December 3, 2012

Description

LRIS-LR-132;
mislabeled as LR-135
in field

Interval

4.5-5.8 feet bml



APPENDIX C

BORING LOGS



Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

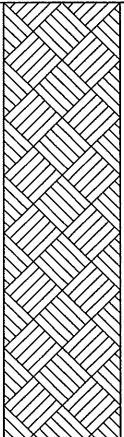
Project Number
9003.01.40

Well Number
LRIS-LR-103

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/3/2012 to 12/3/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-84190.7**
 Easting **1226042.9**
 Hole Depth **6.2-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 1.3 feet: SILT WITH SAND (ML); gray; wet; loose.
2				CB		LRIS-LR-103-2			1.3 to 6.2 feet: SILT (ML); gray; moist; stiff. @ 4.4 and 4.6 feet: sand lenses. @ 5.3 and 5.9 feet: wood debris.
3				CB		LRIS-LR-103-3			
4				CB		LRIS-LR-103-4			
5				CB		LRIS-LR-103-5			
6									

Total recovery = 6.2 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

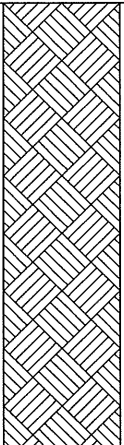
Project Number
9003.01.40

Well Number
LRIS-LR-106

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/2/2012 to 12/2/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-71504.5**
 Easting **1220206.6**
 Hole Depth **6.3-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 0.6 feet: SILT WITH SAND (ML); gray; loose; wet; wood debris.
2				CB	LRIS-LR-106-2				0.6 to 6.3 feet: SILT (ML); gray; stiff; moist. @ 3.4 feet: sand lens; gray; loose; wet.
3				CB	LRIS-LR-106-3				
4				CB	LRIS-LR-106-4				
5				CB	LRIS-LR-106-5				
6									

Total recovery = 6.3 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number
9003.01.40

Well Number
LRIS-LR-108

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/3/2012 to 12/3/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-53814.9**
 Easting **1213638.9**
 Hole Depth **6.0-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 0.5 feet: SANDY SILT (MLS); gray; loose; wet.
2				CB	LRIS-LR-108-2				0.5 to 3.5 feet: SILT WITH SAND (ML); gray; stiff; moist. @ 2.0 feet: wood debris.
3				CB	LRIS-LR-108-3				
4				CB	LRIS-LR-108-4				3.5 to 4.9 feet: WOODY DEBRIS; with sandy silt (ML).
5				CB	LRIS-LR-108-5				
6									4.9 to 6.0 feet: SANDY SILT (MLS); gray; moist; stiff.

Total recovery = 6.0 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

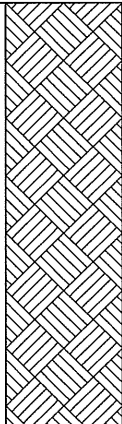

Maul Foster & Alongi, Inc. **Geologic Borehole Log/Well Construction**

Project Number
9003.01.40

Well Number
LRIS-LR-109

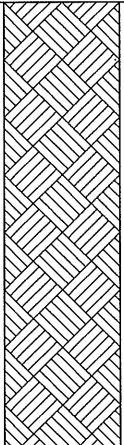
Sheet
1 of 1

Project Name	Port of Ridgefield	TOC Elevation (feet)	
Project Location	Ridgefield, WA	Surface Elevation (feet)	
Start/End Date	12/2/2012 to 12/2/2012	Northing	-59259.1
Driller/Equipment	Marine Sampling Systems/Vibracore	Easting	1210603.2
Geologist/Engineer	Michael R. Murray	Hole Depth	6.0-feet
Sample Method	Vibracore	Outer Hole Diam	3.75-inch

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0 to 1.3 feet: SILT WITH SAND (ML); gray; loose; wet.
2				CB		LRIS-LR-109-2			1.3 to 4.7 feet: SILT (ML); gray, stiff, moist.
3				CB		LRIS-LR-109-3			
4				CB		LRIS-LR-109-4			
5				CB		LRIS-LR-109-5			
6									4.7 to 6.0 feet: SAND (SW); gray; coarse; stiff; moist. @ 4.8 feet: debris layer including broken bottle identified as post-1930's.

Total recovery = 6.0 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.		Geologic Borehole Log/Well Construction					
		Project Number 9003.01.40		Well Number LRIS-LR-110		Sheet 1 of 1	
Project Name		Port of Ridgefield			TOC Elevation (feet)		
Project Location		Ridgefield, WA			Surface Elevation (feet)		
Start/End Date		12/3/2012 to 12/3/2012			Northing -42582.5		
Driller/Equipment		Marine Sampling Systems/Vibracore			Easting 1208583.0		
Geologist/Engineer		Michael R. Murray			Hole Depth 6.3-feet		
Sample Method		Vibracore			Outer Hole Diam 3.75-inch		
Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Soil Description
				Collection Method	Number	Name (Type)	
1				CB	LRIS-LR-110-2		0.0 to 2.2 feet: SILT (ML); gray; loose; wet.
2				CB	LRIS-LR-110-3		2.2 to 6.3 feet: SILT WITH SAND (ML); gray; stiff; moist. @ 6.0 to 6.3 feet: woody debris.
3				CB	LRIS-LR-110-4		
4				CB	LRIS-LR-110-5		
5							
6							
Total recovery = 6.3 feet.							
NOTES: CB = Core Barrel: Composite sample collected from core barrel.							

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number
9003.01.40

Well Number
LRIS-LR-119

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/3/2012 to 12/3/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-105987.9**
 Easting **1239815.7**
 Hole Depth **5.7-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1								0.0 to 1.0 feet: SAND WITH SILT (SW-SM); gray; wet; loose.	
2				CB	LRIS-LR-119-2			1.0 to 1.4 feet: WOODY DEBRIS; loose; wet; with gray sand.	
3				CB	LRIS-LR-119-3			1.4 to 5.7 feet: SILT WITH SAND (ML); gray; moist; stiff. @ 2.3 and 3.4 feet: wood debris.	
4				CB	LRIS-LR-119-4				
5				CB	LRIS-LR-119-5				

Total recovery = 5.7 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

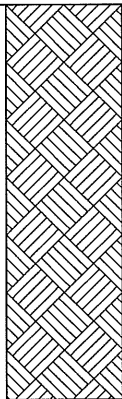
Project Number
9003.01.40

Well Number
LRIS-LR-120

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/3/2012 to 12/3/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-90375.6**
 Easting **1232104.8**
 Hole Depth **5.6-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 1.0 feet: SILT (ML); gray; wet; loose.
2				CB	LRIS-LR-120-2				1.0 to 5.2 feet: SILT (ML); gray; moist; stiff. @ 3.6 to 4.1 feet: SAND (SP) lenses.
3				CB	LRIS-LR-120-3				
4				CB	LRIS-LR-120-4				
5				CB	LRIS-LR-120-5				
									5.2 to 5.6 feet: WOODY DEBRIS; loose; wet; with gray SANDY SILT (MLS).

Total recovery = 5.6 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number
9003.01.40

Well Number
LRIS-LR-122

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/3/2012 to 12/3/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-63584.3**
 Easting **1219456.3**
 Hole Depth **6.0-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1								0.0 to 2.8 feet: SILT WITH SAND (ML); gray; loose; wet. @ 2.1 and 2.7 feet: wood debris.	
2				CB	LRIS-LR-122-2				
3				CB	LRIS-LR-122-3			2.8 to 3.2 feet: SAND (SW); gray; stiff; moist; with wood debris.	
4				CB	LRIS-LR-122-4			3.2 to 3.9 feet: SANDY SILT (MLS); gray; moist; stiff; trace wood debris.	
5				CB	LRIS-LR-122-5			3.9 to 4.4 feet: WOODY DEBRIS with SANDY SILT (ML); gray; loose; wet.	
6								4.4 to 5.5 feet: SILT WITH SAND (ML); gray; moist; stiff.	
								5.5 to 6.0 feet: WOODY DEBRIS with SANDY SILT (ML); gray; wet.	

Total recovery = 6.0 feet.

NOTES: CB = Core Barrel; Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number
9003.01.40

Well Number
LRIS-LR-124

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/3/2012 to 12/3/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-49231.0**
 Easting **1213704.1**
 Hole Depth **4.7-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data				Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)				
1									0.0 to 1.7 feet: SILT WITH SAND (ML); gray; loose; wet; wood debris.	
2				CB	LRIS-LR-124-2				1.7 to 3.1 feet: SILT (ML); gray; wet; loose; trace wood debris.	
3				CB	LRIS-LR-124-3				3.1 to 4.7 feet: SILT (ML); gray; moist; stiff; trace wood debris.	
4				CB	LRIS-LR-124-4					
				CB	LRIS-LR-124-5					

Total recovery = 4.7 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

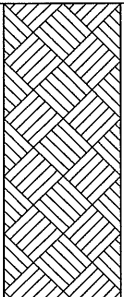
Project Number
9003.01.40

Well Number
LRIS-LR-125

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/2/2012 to 12/2/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-35696.7**
 Easting **1203344.1**
 Hole Depth **4.2-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1								0.0 to 1.7 feet: SILTY SAND (SM); gray; loose; wet.	
2				CB	LRIS-LR-125-2			1.7 to 2.7 feet: SAND (SP); gray; stiff; moist.	
3				CB	LRIS-LR-125-3			2.7 to 4.2 feet: SANDY SILT (MLS); gray; loose; moist. @ 3.2 feet: trace organic debirs.	
4				CB	LRIS-LR-125-4				

Total recovery = 4.2 feet.

NOTES: CB = Core Barrel; Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

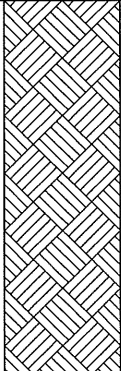
Project Number
9003.01.40

Well Number
LRIS-LR-126

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/2/2012 to 12/2/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-19181.2**
 Easting **1197684.7**
 Hole Depth **5.3-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1								0.0 to 1.3 feet: SANDY SILT (MLS); gray; wet; loose. @ 0.4 to 0.9 feet: woody debris. @ 1.3 feet: woody debris.	
2				CB	LRIS-LR-126-2		1.3 to 4.2 feet: SAND WITH SILT (SP-SM); gray; moist; firm. @ 2.4 to 3.0 feet: gravel and cobbles; wet.		
3				CB	LRIS-LR-126-3				
4				CB	LRIS-LR-126-4				
5				CB	LRIS-LR-126-5		4.2 to 5.3 feet: SANDY SILT (MLS); gray; moist; firm. @ 5.3 feet: cobble.		

Total recovery = 5.3 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number
9003.01.40

Well Number
LRIS-LR-129

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/2/2012 to 12/2/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-37691.8**
 Easting **1198441.4**
 Hole Depth **5.1-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 2.5 feet: SILT WITH SAND (ML); gray; wet; loose.
2				CB		LRIS-LR-129-2			
3				CB		LRIS-LR-129-3			2.5 to 5.1 feet: SANDY SILT (MLS); gray; firm; moist; trace organic material.
4				CB		LRIS-LR-129-4			
5				CB		LRIS-LR-129-5			

Total recovery = 5.1 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number
9003.01.40

Well Number
LRIS-LR-130

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/2/2012 to 12/2/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-58959.3**
 Easting **1205595.0**
 Hole Depth **6.2-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1								0.0 to 1.1 feet: SILTY SAND (SM); gray; loose; wet; trace organic debris.	
2				CB	LRIS-LR-130-2			1.1 to 1.8 feet: SAND WITH SILT (SP-SM); gray; stiff; moist.	
3				CB	LRIS-LR-130-3			1.8 to 4.1 feet: SILTY SAND (SM); gray; stiff; wet.	
4				CB	LRIS-LR-130-4				
5				CB	LRIS-LR-130-5				
6								4.1 to 6.2 feet: SILT (ML); gray; damp; stiff.	

Total recovery = 6.2 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc. **Geologic Borehole Log/Well Construction**

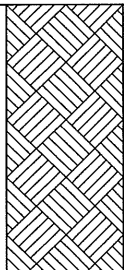
Project Number
9003.01.40

Well Number
LRIS-LR-131

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/2/2012 to 12/2/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-64087.8**
 Easting **1211252.4**
 Hole Depth **3.8-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 1.6 feet: SANDY SILT (MLS); gray; loose; wet; trace woody debris. @ 1.2 to 1.4 feet: WOOD DEBRIS; wet.
2			CB	LRIS-LR-131-2				1.6 to 2.7 feet: SILT (ML); gray; moist; stiff; trace organic debris (roots).	
3			CB	LRIS-LR-131-3				2.7 to 3.8 feet: SAND (SW); gray; moist; stiff.	
				CB	LRIS-LR-131-4				

Total recovery = 3.8 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

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Geologic Borehole Log/Well Construction

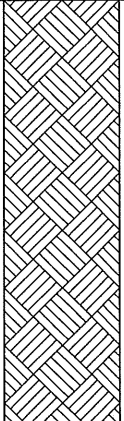
Project Number
9003.01.40

Well Number
LRIS-LR-132

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/3/2012 to 12/3/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-95668.7**
 Easting **1228844.6**
 Hole Depth **6.0-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1								0.0 to 6.0 feet: SANDY SILT (MLS); gray; wet; loose. @ 1.9 and 3.1 feet: sand lenses. @ 3.4, 4.5 and 6.0 feet: woody debris.	
2				CB	LRIS-LR-132-2				
3				CB	LRIS-LR-132-3				
4				CB	LRIS-LR-132-4				
5				CB	LRIS-LR-132-5				
6									

Total recovery = 6.0 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

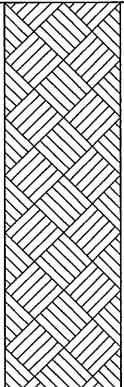
Project Number
9003.01.40

Well Number
LRIS-LR-133

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/3/2012 to 12/3/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-108832.8**
 Easting **1236469.2**
 Hole Depth **5.5-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 1.9 feet: SILT WITH SAND (ML); gray; wet; loose.
2				CB	LRIS-LR-133-2				1.9 to 2.6 feet: WOODY DEBRIS with SAND (SW).
3				CB	LRIS-LR-133-3				2.6 to 5.5 feet: SILT WITH SAND (ML); gray; moist; stiff. @ 4.5 to 4.8 feet: SAND (SW) lens; gray; wet; loose.
4				CB	LRIS-LR-133-4				
5				CB	LRIS-LR-133-5				

Total recovery = 5.5 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number
9003.01.40

Well Number
LRIS-LR-134

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/2/2012 to 12/2/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-111651.5**
 Easting **1240858.4**
 Hole Depth **4.8-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 2.4 feet: SANDY SILT (MLS); gray; wet; loose. Trace organic debris.
2				CB		LRIS-LR-134-2			
3				CB		LRIS-LR-134-3			2.4 to 3.0 feet: WOODY DEBRIS with SANDY SILT (ML); gray; moist; with rounded cobbles.
				CB		LRIS-LR-134-4			3.0 to 3.7 feet: SILT WITH SAND (ML); gray; moist; firm.
4				CB		LRIS-LR-134-5			3.7 to 4.8 feet: SILTY SAND (SM); well sorted; gray; moist; firm.

Total recovery = 4.8 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

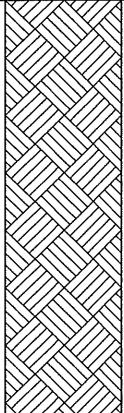
Project Number
9003.01.40

Well Number
LRIS-LR-135

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/3/2012 to 12/3/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-112627.1**
 Easting **1231736.6**
 Hole Depth **5.9-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
			Collection Method	Number	Name (Type)			
1								0.0 to 1.4 feet: SANDY SILT (MLS); gray; wet; loose.
2			CB	LRIS-LR-135-2				1.4 to 3.4 feet: SAND WITH SILT (SW-SM); gray; moist; stiff. @ 2.3, 2.5 and 2.7 feet: SILT (ML) lenses.
3			CB	LRIS-LR-135-3				
4			CB	LRIS-LR-135-4				3.4 to 5.9: SILT WITH SAND (ML); gray; moist; stiff.
5			CB	LRIS-LR-135-5				

Total recovery = 5.9 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Geologic Borehole Log/Well Construction

Maul Foster & Alongi, Inc.

Project Number
9003.01.40

Well Number
LRIS-LR-136

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/2/2012 to 12/2/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-65154.4**
 Easting **1204796.6**
 Hole Depth **5.5-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 1.1 feet: SILT WITH SAND (ML); gray; wet; loose; with fine sand. @ 1.1 feet: wood.
2				CB	LRIS-LR-136-2				1.1 to 5.5 feet: SAND (SW); gray; firm; moist. @ 3.3 feet: redox banding.
3				CB	LRIS-LR-136-3				
4				CB	LRIS-LR-136-4				
5				CB	LRIS-LR-136-5				

Total recovery = 5.5 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number
9003.01.40

Well Number
LRIS-LR-137

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/2/2012 to 12/2/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-30850.0**
 Easting **1191847.9**
 Hole Depth **6.2-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 6.0 feet: SANDY SILT (MLS); gray; wet; loose.
2				CB		LRIS-LR-137-2			
3				CB		LRIS-LR-137-3			2.5 to 6.2 feet: SILTY SAND (SM); gray; moist; stiff.
4				CB		LRIS-LR-137-4			
5				CB		LRIS-LR-137-5			
6									

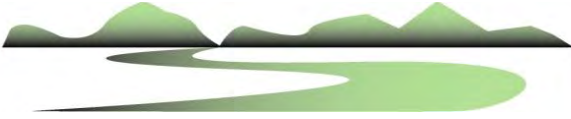
Total recovery = 6.2 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

APPENDIX D

ARCHAEOLOGICAL MONITORING REPORT





Date: January 8, 2013

To: Madi Novak
Maul Foster & Alongi, Inc.
2001 NW 19th Avenue, Suite 200, Portland, OR 97209

From: Paul S. Solimano, M.A., RPA
WillametteCRA
Portland, Oregon.

Subject: Archaeological Monitoring of Coring Operations for the
Port of Ridgefield's Lake River Industrial Site Remediation Project
Letter Report No. 12-35

This letter report summarizes archaeological monitoring by Willamette Cultural Resources Associates, Ltd. (WillametteCRA), of coring operations for the Port of Ridgefield's Lake River Industrial Site (LRIS) Remediation Project. Maul Foster & Alongi, Inc. (MFA) is undertaking the project on behalf of the Port of Ridgefield (Port). Coring occurred in Lake River, in Ridgefield, Washington, Township 4 North, 1 West, Donation Land Claims 38 and 48, Willamette Meridian (Figure 1). The coring in Lake River required obtaining a permit from the U.S. Army Corps of Engineers (ACOE) (NWP-2012-401). As a condition of that permit, the ACOE required the presence of a professional archaeologist to inspect the cores to determine if any cores indicated the presence of archaeological or other cultural resources. MFA contracted with WillametteCRA to provide the services of a professional archaeologist for monitoring the coring and inspect the retrieved cores.

The following letter report provides a summary of the archaeological monitoring and provides recommendations for future work. First, the project background is provided, with some basic information on the coring process. A short discussion of local archaeological work is presented, focused on nearby archaeological sites but also local sites that might have submerged deposits. The methods employed for archaeological monitoring as well as the results of that monitoring are provided. Finally, a short discussion of the results and recommendations for additional archaeological work are presented. The complete coring logs are attached to this letter report.

Project Background and Coring Methodology

The Pacific Wood Treatment Company (PWT) operated a wood treatment facility at the Port's LRIS adjacent to Lake River immediately west of Ridgefield, Washington (MFA 2012). The PWT facility, which operated from the 1960s to the early 1990s, pressure-treated wood products with a range of products, releasing creosote, PCPs, copper, arsenic, zinc, chromium and dioxins on the LRIS property and into the adjacent Lake River. MFA is designing remediation measures of these contaminated sediments. Previous remediation alternative design work has included field study and sampling in both upland and in-river locations. The current effort included 20, in-water vibracore samples from the Lake River bed to characterize sediments and contamination.

Sediment sampling consisted of removing ca. 3.75-inch diameter cores from the river bottom. Core locations are depicted in Figure 2. Cores were excavated in near shore and mid-channel locations, but all coring was staged from a boat and the actual coring process itself occurs underwater. The cores were brought to shore, opened, examined, and documented, and soil samples collected. Core soil not collected for sampling was disposed of in accordance with the Lake River Predesign Sampling Plan (MFA 2012).

Archaeological Background

A large number of sites have been found and excavated in the area, but little of these data has been synthesized into a usable format and consists primarily of site specific descriptions. Areas around Vancouver Lake are somewhat better known, at least in terms of the amount of data available, although even there, data has not been organized to allow clear discussions of hunter-gatherer mobility, resource intensification, and land-use.

The lowlands adjacent to the Columbia River have fairly extensive and often dense archaeological deposits. Sites range from large dense residential sites with house and processing features to small limited-task sites probably related to resource procurement or processing and consisting primarily of lithic artifacts or a narrow range of features. Sparse, widespread artifact scatters are also common. Generally, lowland sites post-date about 3,000 years ago and most are much younger. Several older sites are known, however, by typological cross-dating.

Two precontact sites are adjacent to the cored reach of Lake River. Site 45-CL-4 is immediately adjacent to the downstream cores (126, 125, 110, 129 and 137; see Figure 2) on the east bank of Lake River. Excavations in and near the site have been undertaken by several researchers (Abramowitz 1980; Minor and Topel 1984; Ross and Starky 1975), with most work attempting to verify the site as the location of the ethnographically described village of Cathlapotle, a village visited and described by Lewis and Clark. Minor and Topel's work was the most extensive and suggested the site consists of a series of smaller, sometimes dense, limited task sites, without house features.

Relatively large-scale erosion has removed portions of the site along Lake River. Hearth features were found, with lithic debitage, tools and bone recovered from over a meter below the surface. Use began about 2,000 years ago at the downstream end and continued until the historic period in the upstream portion (Minor and Topel 1984).

Site 45-CL-108 is also adjacent to the downstream cores (137, 129, 130 and 138; see Figure 2), but located on the west shore of Lake River. Little is known about the site, but it appears large, shallow, and heavily looted.

Work upstream in and around Vancouver Lake, however, provides somewhat more pertinent information to the current undertaking. A large and unusually diverse collection of precontact artifacts were recovered during dredging of the lake (Wesson 1983). Recovered artifacts include projectile points, scrapers, bifaces mortars, pestles and other groundstone fragments, net sinkers, hammerstones and cores. Interestingly, several edge-ground cobbles and large, leaf shaped points suggest at least some of the deposits are from a Mid Holocene occupation.

While site descriptions are vague, rendering the exact configuration, location and depths of the materials unclear, several sites near the confluence of Lake River and Vancouver Lake have submerged deposits (Stenger 1989). Materials include a number of fir branch, lined pits and stakes at 45-CL-12, 45-CL-402, and possibly 45-CL-15. Some or all of these features appear to be submerged at low water (Stenger 1989).

Archaeological Methods

Inspection of the cores was conducted by WillametteCRA archaeologists Paul S. Solimano, M.A., on December 2 and Kanani Paraso, M.A., on December 3, 2012. Due to soil contamination, archaeological monitoring consisted of examining the sediment when the core was opened and as soil was removed for analysis or disposal. No screening occurred. The sediment in each core was described and photographed. Precontact and historic-era materials were found in two cores (see below). Archaeological materials were described and their depth and associated soils noted. Fire-cracked rock (FCR) was discarded with excess core sediment after documentation due to potential contamination of the coarse-grained material. Several fragments of more recent bottle glass were also discarded. A single, fine-grained tool fragment, however, was cleaned sufficiently and retained. The artifact was bagged and labeled.

Results

Pertinent data from the 20 excavated cores is summarized in Table 1 while core locations are shown in Figure 2. Water depth at core locations ranged from two to over five meters. The depth of cores

Table 1. Summary of Core Recovery and Depth.

Core ID	Water Depth		Sediment Recovery		Archaeological Recovery		
	Feet	Meters	Feet	Meters	Precontact	Historic	Comments
103	7.1	2.2	6.2	1.9	No	No	
106	10.3	3.1	6.3	1.9	No	No	
108	8.5	2.6	6.0	1.8	No	No	
109	13.5	4.1	6.0	1.8	No	Yes	Bottle fragments
110	7.8	2.4	6.3	1.9	No	No	
119	7.0	2.1	5.7	1.7	No	No	
120	7.2	2.2	5.6	1.7	No	No	
122	7.6	2.3	6.0	1.8	No	No	
124	7.2	2.2	4.7	1.4	No	No	
125	8.6	2.6	4.2	1.3	No	No	
126	6.6	2.0	5.3	1.6	Yes	No	Lithic tool, FCR
129	17.3	5.3	5.1	1.6	No	No	
130	15.1	4.6	6.2	1.9	No	No	
131	13.0	4.0	3.8	1.2	No	No	
132	8.7	2.7	6.0	1.8	No	No	
133	8.5	2.6	5.5	1.7	No	No	
134	9.5	2.9	4.8	1.5	No	No	
135	12.9	3.9	5.9	1.8	No	No	
136	14.5	4.4	5.5	1.7	No	No	
137	17.6	5.4	6.2	1.9	No	No	

from the mudline (bed of Lake River channel) was between about one and two meters, but averaged about 1.6 meters of sediment.

Sediment encountered ranged from silt to sand, with woody debris lenses and layers present in approximately half of the cores. Silt and sand was present as relatively massive layers but also included lenses. Wood included unburned twigs branches, but most was wood chips and one possible fragment of milled lumber was found in Core 109. Organic layers and lenses were also observed.

Archaeological materials were found in two cores (109 and 126) (see Figure 2). All other cores were culturally sterile. The ACOE was notified of the find in accordance with the permit on December 3, 2012. In Core 109, a bottle fragment was found over 125 cm below the riverbed (Figure 3). The bottle fragment is a colorless bottle neck and finish shard with a continuous external thread for a screw cap closure. Neither material type nor manufacture technique are particularly diagnostic. True colorless glass that would not become tinted with sun exposure was introduced around 1920 and has been in use ever since. Although the bottle seams indicate it was machine-made, this has been the most common type of bottle manufacturing technique from 1905 to present. The best

indication of manufacture date is probably the external threads, which were not common on small mouth bottles until the 1930s (Rock 1981).

In Core 126, four possible fragments of fire cracked rock (FCR) and one tool fragment were identified (Figure 4). Three FCR fragments were at about 80 cm below the riverbed, while the tool was approximately 100 cm below the riverbed. An additional FCR fragment was found at the base of the core at around 125 cm. The tool fragment is small (ca. 1 cm.), unifacially pressure flaked (Figure 5). The raw material is yellow-brown and translucent; possibly chalcedony. The collected artifact is temporarily curated at the WillametteCRA office in Portland.

Discussion

Overall, there was little clear horizontal or vertical patterning in the sediments, wood, or organic layers among cores. Precontact materials were found in only one core, but whether these materials are in place or redeposited is unknown. Large numbers of precontact sites are known along Lake River and two sites are in close proximity. Moreover, many local sites exhibit extensive erosion or historic disturbances, so precontact materials redeposited in the river would not be unexpected. Submerged, possibly intact deposits are suggested at other nearby locales, however, but these sites are poorly understood.

The historic bottle fragment was about 125 cm (ca. 4 feet) below the mudline, while precontact materials were found between 80 and 125 cm (ca. 2.5 to 4 feet) below the mudline. Comparing these core locations to the sediment accumulation since 1970 suggests (Figure 6) these core locations are areas with more limited sedimentation. While it seems unlikely, it is possible the precontact materials in Core 126 represent intact deposits.

Recommendations

Precontact archaeological materials were found in Core 126, but their context is unclear. The material may represent intact deposits, but with the large number of local sites and well known river side erosion at these sites, it is more likely these materials represent eroded deposits, possibly quite far from their original location.

As a result, we recommend archaeological monitoring of any ground-disturbing activity below the mudline of Lake River including dredging. An archaeologist should be consulted during cleanup planning to develop a monitoring plan in coordination with the ACOE, the appropriate Tribes, and the Washington Department of Archaeology and Historic Preservation.

References Cited

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Maul Foster and Alongi, Inc.

2012 *Lake River Predesign Sampling Plan*. Prepared for Port of Ridgefield, Ridgefield, Washington.

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Wessen, Gary.

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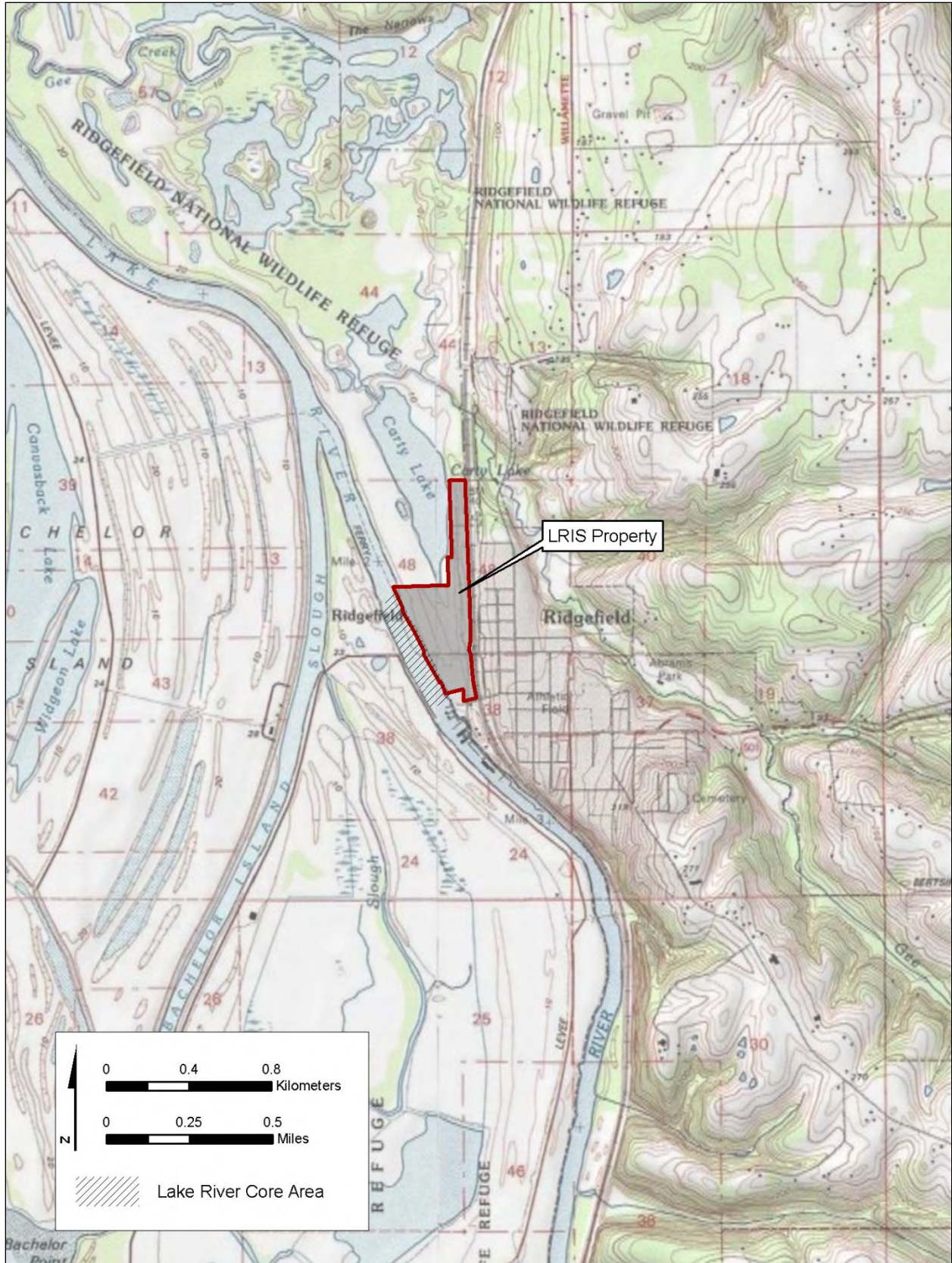


Figure 1. Location of the LRIS and area cored.

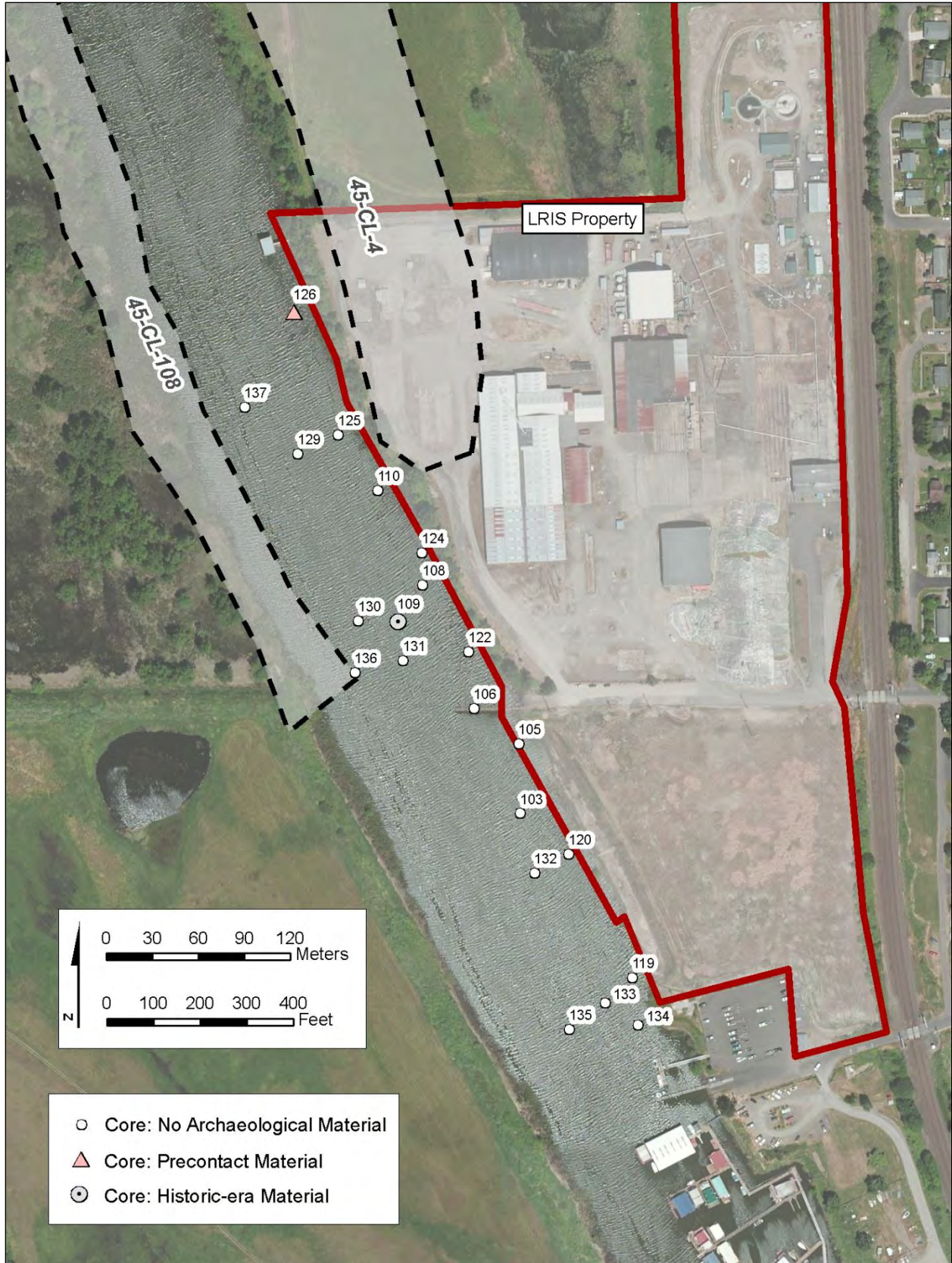


Figure 2. Configuration of the project area, location of cores as well as nearby archaeological sites.

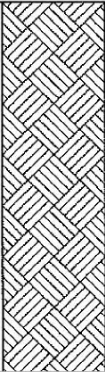
Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1								0 to 1.3 feet: SILT WITH SAND (ML); gray; loose; wet.	
2			CB	LRIS-LR-109-2				1.3 to 4.7 feet: SILT (ML); gray, stiff, moist.	
3			CB	LRIS-LR-109-3					
4			CB	LRIS-LR-109-4					
5			CB	LRIS-LR-109-5					
6							Glass	4.7 to 6.0 feet: SAND (SW); gray; coarse; stiff; moist. @ 4.8 feet: debris layer including broken bottle identified as post-1930's.	



Figure 3. Core log (above) and core photograph (below) for Core 109.

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data		Blows/6"	Lithologic Column	Soil Description
				Collection Method	Name (Type)			
1								0.0 to 1.3 feet: SANDY SILT (MLS); gray; wet; loose. @ 0.4 to 0.9 feet: woody debris. @ 1.3 feet: woody debris.
2				CB	LRIS-LR-126-2			1.3 to 4.2 feet: SAND WITH SILT (SP-SM); gray; moist; firm. @ 2.4 to 3.0 feet: gravel and cobbles; wet.
3				CB	LRIS-LR-126-3	FCR		
4				CB	LRIS-LR-126-4	Tool		
5				CB	LRIS-LR-126-5		FCR	4.2 to 5.3 feet: SANDY SILT (MLS); gray; moist; firm. @ 5.3 feet: cobble.

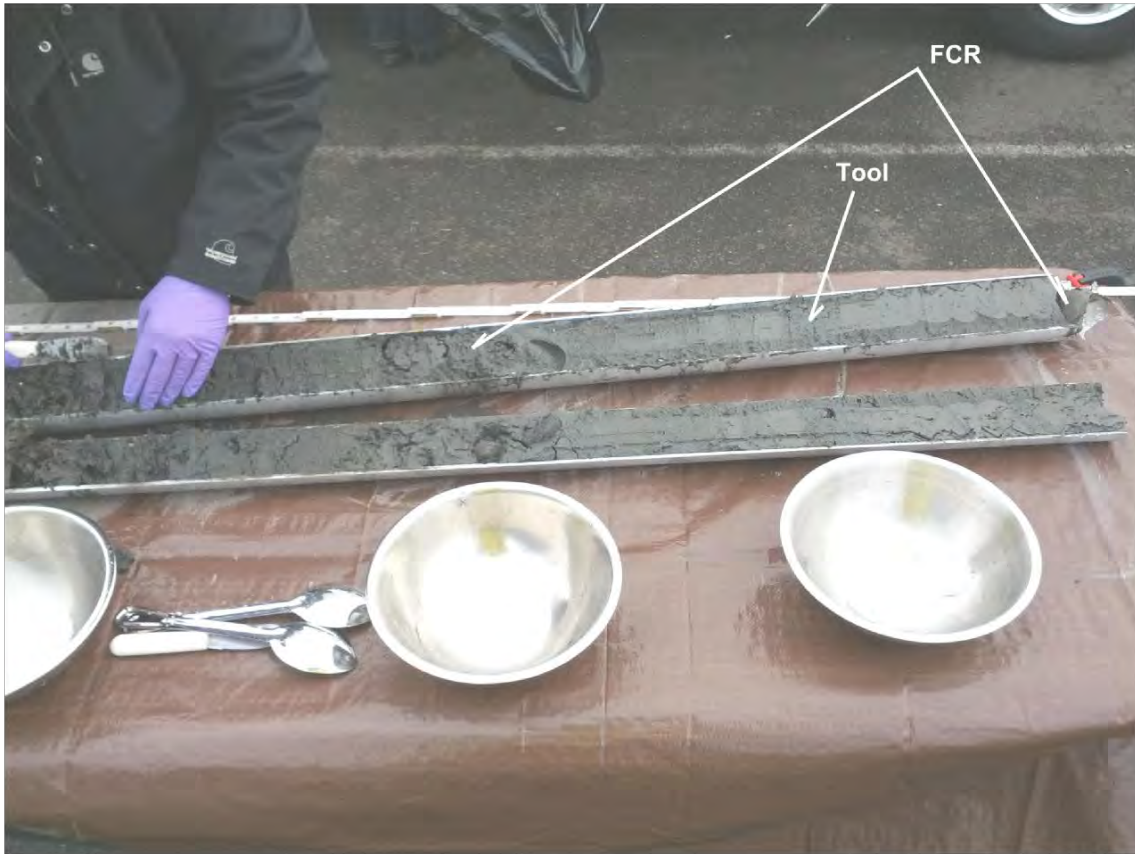


Figure 4. Core log (above) and core photograph (below) for Core 126.



Figure 5. Lithic tool fragment recovered from Core 126.

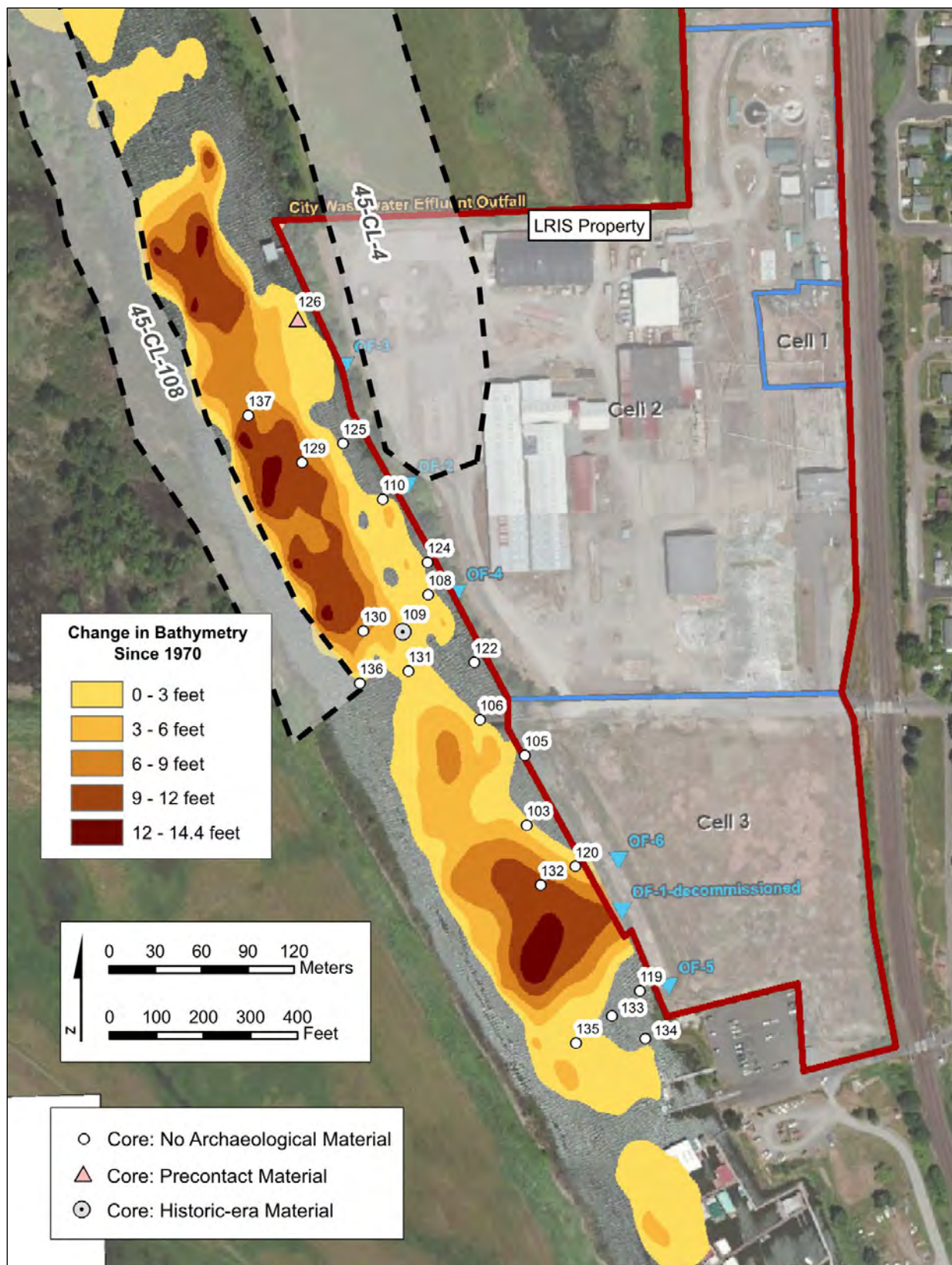


Figure 6. Core locations in relation to sediment accumulation since 1970 (base map from MFA 2012)

Appendix A: Boring Logs

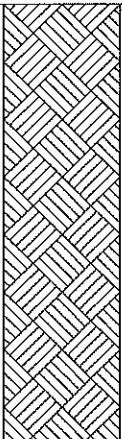
Maul Foster & Alongi, Inc. **Geologic Borehole Log/Well Construction**

Project Number
9003.01.40

Well Number
LRIS-LR-103

Sheet
1 of 1

Project Name	Port of Ridgefield	TOC Elevation (feet)	
Project Location	Ridgefield, WA	Surface Elevation (feet)	
Start/End Date	12/3/2012 to 12/3/2012	Northing	-84190.7
Driller/Equipment	Marine Sampling Systems/Vibracore	Easting	1226042.9
Geologist/Engineer	Michael R. Murray	Hole Depth	6.2-feet
Sample Method	Vibracore	Outer Hole Diam	3.75-inch

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 1.3 feet: SILT WITH SAND (ML); gray; wet; loose.
2				CB	LRIS-LR-103-2				1.3 to 6.2 feet: SILT (ML); gray; moist; stiff. @ 4.4 and 4.6 feet: sand lenses. @ 5.3 and 5.9 feet: wood debris.
3				CB	LRIS-LR-103-3				
4				CB	LRIS-LR-103-4				
5				CB	LRIS-LR-103-5				
6									

Total recovery = 6.2 feet.

NOTES: CB = Core Barrel; Composite sample collected from core barrel.

Geologic Borehole Log/Well Construction

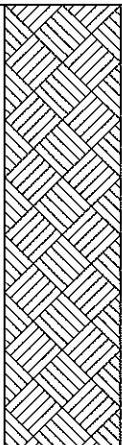
Project Number
9003.01.40

Well Number
LRIS-LR-106

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/2/2012 to 12/2/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-71504.5**
 Easting **1220206.6**
 Hole Depth **6.3-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data				Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)				
1									0.0 to 0.6 feet: SILT WITH SAND (ML); gray; loose; wet; wood debris.	
2				CB	LRIS-LR-106-2				0.6 to 6.3 feet: SILT (ML); gray; stiff; moist. @ 3.4 feet: sand lens; gray; loose; wet.	
3				CB	LRIS-LR-106-3					
4				CB	LRIS-LR-106-4					
5				CB	LRIS-LR-106-5					
6										

Total recovery = 6.3 feet.

NOTES: CB = Core Barrel; Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

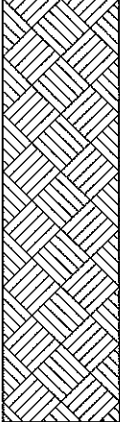
Project Number
9003.01.40

Well Number
LRIS-LR-108

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/3/2012 to 12/3/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-53814.9**
 Easting **1213638.9**
 Hole Depth **6.0-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data				Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)	Blows/6"		
1								0.0 to 0.5 feet: SANDY SILT (MLS); gray; loose; wet.	
2				CB	LRIS-LR-108-2			0.5 to 3.5 feet: SILT WITH SAND (ML); gray; stiff; moist. @ 2.0 feet: wood debris.	
3				CB	LRIS-LR-108-3				
4				CB	LRIS-LR-108-4			3.5 to 4.9 feet: WOODY DEBRIS; with sandy silt (ML).	
5				CB	LRIS-LR-108-5			4.9 to 6.0 feet: SANDY SILT (MLS); gray; moist; stiff.	
6									

Total recovery = 6.0 feet.

NOTES: CB = Core Barrel; Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.	Geologic Borehole Log/Well Construction		
	Project Number 9003.01.40	Well Number LRIS-LR-109	Sheet 1 of 1

Project Name	Port of Ridgefield	TOC Elevation (feet)	
Project Location	Ridgefield, WA	Surface Elevation (feet)	
Start/End Date	12/2/2012 to 12/2/2012	Northing	-59259.1
Driller/Equipment	Marine Sampling Systems/Vibracore	Easting	1210603.2
Geologist/Engineer	Michael R. Murray	Hole Depth	6.0-feet
Sample Method	Vibracore	Outer Hole Diam	3.75-inch

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0 to 1.3 feet: SILT WITH SAND (ML); gray; loose; wet.
2				CB	LRIS-LR-109-2				1.3 to 4.7 feet: SILT (ML); gray, stiff, moist.
3				CB	LRIS-LR-109-3				
4				CB	LRIS-LR-109-4				
5				CB	LRIS-LR-109-5				4.7 to 6.0 feet: SAND (SW); gray; coarse; stiff; moist. @ 4.8 feet: debris layer including broken bottle identified as post-1930's.
6									

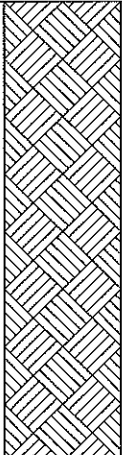
Total recovery = 6.0 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc. **Geologic Borehole Log/Well Construction**

Project Number: **9003.01.40** Well Number: **LRIS-LR-110** Sheet: **1 of 1**

Project Name: **Port of Ridgefield** Project Location: **Ridgefield, WA** TOC Elevation (feet):
 Start/End Date: **12/3/2012 to 12/3/2012** Surface Elevation (feet):
 Driller/Equipment: **Marine Sampling Systems/Vibracore** Northing: **-42582.5**
 Geologist/Engineer: **Michael R. Murray** Easting: **1208583.0**
 Sample Method: **Vibracore** Hole Depth: **6.5-feet**
 Outer Hole Diam: **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 2.2 feet: SILT (ML); gray; loose; wet.
2				CB		LRIS-LR-110-2			2.2 to 6.5 feet: SILT WITH SAND (ML); gray; stiff; moist. @ 6.0 to 6.5 feet: woody debris.
3				CB		LRIS-LR-110-3			
4				CB		LRIS-LR-110-4			
5				CB		LRIS-LR-110-5			
6									

Total recovery = 6.5 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Geologic Borehole Log/Well Construction

Maul Foster & Alongi, Inc.	Project Number	Well Number	Sheet
	9003.01.40	LRIS-LR-119	1 of 1

Project Name	Port of Ridgefield	TOC Elevation (feet)
Project Location	Ridgefield, WA	Surface Elevation (feet)
Start/End Date	12/3/2012 to 12/3/2012	Northing
Driller/Equipment	Marine Sampling Systems/Vibracore	-105987.9
Geologist/Engineer	Michael R. Murray	Easting
Sample Method	Vibracore	1239815.7
		Hole Depth
		5.7-feet
		Outer Hole Diam
		3.75-inch

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1								0.0 to 1.0 feet: SAND WITH SILT (SW-SM); gray; wet; loose.	
2				CB		LRIS-LR-119-2		1.0 to 1.4 feet: WOODY DEBRIS; loose; wet; with gray sand.	
3				CB		LRIS-LR-119-3		1.4 to 5.7 feet: SILT WITH SAND (ML); gray; moist; stiff.	
4				CB		LRIS-LR-119-4		@ 2.3 and 3.4 feet: wood debris.	
5				CB		LRIS-LR-119-5			

Total recovery = 5.7 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc. **Geologic Borehole Log/Well Construction**

Project Name Port of Ridgefield		Project Number 9003.01.40		Well Number LRIS-LR-120		Sheet 1 of 1	
Project Location Ridgefield, WA		Start/End Date 12/3/2012 to 12/3/2012		TOC Elevation (feet)		Surface Elevation (feet)	
Driller/Equipment Marine Sampling Systems/Vibracore		Geologist/Engineer Michael R. Murray		Northing		-90375.6	
Sample Method Vibracore				Easting		1232104.8	
				Hole Depth		5.6-feet	
				Outer Hole Diam		3.75-inch	

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 1.0 feet: SILT (ML); gray; wet; loose.
2				CB		LRIS-LR-120-2			1.0 to 5.2 feet: SILT (ML); gray; moist; stiff. @ 3.6 to 4.1 feet: SAND (SP) lenses.
3				CB		LRIS-LR-120-3			
4				CB		LRIS-LR-120-4			
5				CB		LRIS-LR-120-5			
									5.2 to 5.6 feet: WOODY DEBRIS; loose; wet; with gray SANDY SILT (MLS).

Total recovery = 5.6 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Geologic Borehole Log/Well Construction

Maul Foster & Alongi, Inc.	Project Number 9003.01.40	Well Number LRIS-LR-122	Sheet 1 of 1
Project Name Port of Ridgefield	Project Location Ridgefield, WA	TOC Elevation (feet)	
Start/End Date 12/3/2012 to 12/3/2012	Driller/Equipment Marine Sampling Systems/Vibracore	Surface Elevation (feet)	-63584.3
Geologist/Engineer Michael R. Murray	Sample Method Vibracore	Northing	1219456.3
		Easting	1219456.3
		Hole Depth	6.0-feet
		Outer Hole Diam	3.75-inch

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data				Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)				
1									0.0 to 2.8 feet: SILT WITH SAND (ML); gray; loose; wet. @ 2.1 and 2.7 feet: wood debris.	
2				CB	LRIS-LR-122-2					
3				CB	LRIS-LR-122-3					
4				CB	LRIS-LR-122-4				2.8 to 3.2 feet: SAND (SW); gray; stiff; moist; with wood debris.	
5				CB	LRIS-LR-122-5				3.2 to 3.9 feet: SANDY SILT (MLS); gray; moist; stiff; trace wood debris.	
6									3.9 to 4.4 feet: WOODY DEBRIS with SANDY SILT (ML); gray; loose; wet. 4.4 to 5.5 feet: SILT WITH SAND (ML); gray; moist; stiff. 5.5 to 6.0 feet: WOODY DEBRIS with SANDY SILT (ML); gray; wet.	

Total recovery = 6.0 feet.

NOTES: CB = Core Barrel. Composite sample collected from core barrel.

Geologic Borehole Log/Well Construction

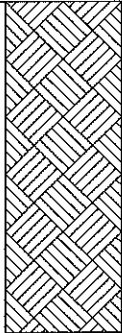
Maul Foster & Alongi, Inc.

Project Number
9003.01.40

Well Number
LRIS-LR-124

Sheet
1 of 1

Project Name	Port of Ridgefield	TOC Elevation (feet)	
Project Location	Ridgefield, WA	Surface Elevation (feet)	
Start/End Date	12/3/2012 to 12/3/2012	Northing	-49231.0
Driller/Equipment	Marine Sampling Systems/Vibracore	Easting	1213704.1
Geologist/Engineer	Michael R. Murray	Hole Depth	4.7-feet
Sample Method	Vibracore	Outer Hole Diam	3.75-inch

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 1.7 feet: SILT WITH SAND (ML); gray; loose; wet; wood debris.
2				CB	LRIS-LR-124-2				1.7 to 3.1 feet: SILT (ML); gray; wet; loose; trace wood debris.
3				CB	LRIS-LR-124-3				
4				CB	LRIS-LR-124-4				
				CB	LRIS-LR-124-5				

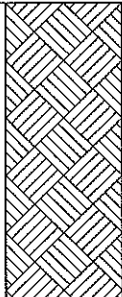
Total recovery = 4.7 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc. **Geologic Borehole Log/Well Construction**

Project Number: 9003.01.40 Well Number: LRIS-LR-125 Sheet: 1 of 1

Project Name: Port of Ridgefield TOC Elevation (feet):
 Project Location: Ridgefield, WA Surface Elevation (feet):
 Start/End Date: 12/2/2012 to 12/2/2012 Northing: -35696.7
 Driller/Equipment: Marine Sampling Systems/Vibracore Easting: 1203344.1
 Geologist/Engineer: Michael R. Murray Hole Depth: 4.2-feet
 Sample Method: Vibracore Outer Hole Diam: 3.75-inch

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1								0.0 to 1.7 feet: SILTY SAND (SM); gray; loose; wet.	
2				CB	LRIS-LR-125-2			1.7 to 2.7 feet: SAND (SP); gray; stiff; moist.	
3				CB	LRIS-LR-125-3			2.7 to 4.2 feet: SANDY SILT (MLS); gray; loose; moist. @ 3.2 feet: trace organic debirs.	
4				CB	LRIS-LR-125-4				

Total recovery = 4.2 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number
9003.01.40

Well Number
LRIS-LR-126

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/2/2012 to 12/2/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-19181.2**
 Easting **1197684.7**
 Hole Depth **5.3-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1								0.0 to 1.3 feet: SANDY SILT (MLS); gray; wet; loose. @ 0.4 to 0.9 feet: woody debris. @ 1.3 feet: woody debris.	
2				CB		LRIS-LR-126-2		1.3 to 4.2 feet: SAND WITH SILT (SP-SM); gray; moist; firm. @ 2.4 to 3.0 feet: gravel and cobbles; wet.	
3				CB		LRIS-LR-126-3			
4				CB		LRIS-LR-126-4			
5				CB		LRIS-LR-126-5		4.2 to 5.3 feet: SANDY SILT (MLS); gray; moist; firm. @ 5.3 feet: cobble.	

Total recovery = 5.3 feet.

NOTES: CB = Core Barrel; Composite sample collected from core barrel.

Geologic Borehole Log/Well Construction

Maul Foster & Alongi, Inc.

Project Number
9003.01.40

Well Number
LRIS-LR-129

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/2/2012 to 12/2/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet) **-37691.8**
 Northing **1198441.4**
 Easting **1198441.4**
 Hole Depth **4.9-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 2.5 feet: SILT WITH SAND (ML); gray; wet; loose.
2				CB		LRIS-LR-129-2			
3				CB		LRIS-LR-129-3			2.5 to 4.9 feet: SANDY SILT (MLS); gray; firm; moist; trace organic material.
4				CB		LRIS-LR-129-4			
				CB		LRIS-LR-129-5			

Total recovery = 4.9 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Geologic Borehole Log/Well Construction

Maul Foster & Alongi, Inc.

Project Number
9003.01.40

Well Number
LRIS-LR-130

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/2/2012 to 12/2/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-58959.3**
 Easting **1205595.0**
 Hole Depth **6.2-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1								0.0 to 1.1 feet: SILTY SAND (SM); gray; loose; wet; trace organic debris.	
2				CB		LRIS-LR-130-2		1.1 to 1.8 feet: SAND WITH SILT (SP-SM); gray; stiff; moist.	
3				CB		LRIS-LR-130-3		1.8 to 4.1 feet: SILTY SAND (SM); gray; stiff; wet.	
4				CB		LRIS-LR-130-4			
5				CB		LRIS-LR-130-5			
6								4.1 to 6.2 feet: SILT (ML); gray; damp; stiff.	

Total recovery = 6.2 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number
9003.01.40

Well Number
LRIS-LR-131

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/2/2012 to 12/2/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-64087.8**
 Easting **1211252.4**
 Hole Depth **3.8-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Sample Data						Lithologic Column	Soil Description
		Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"		
1								0.0 to 1.6 feet: SANDY SILT (MLS); gray; loose; wet; trace woody debris. @ 1.2 to 1.4 feet: WOOD DEBRIS; wet.	
2				CB		LRIS-LR-131-2		1.6 to 2.7 feet: SILT (ML); gray; moist; stiff; trace organic debris (roots).	
3				CB		LRIS-LR-131-3		2.7 to 3.8 feet: SAND (SW); gray; moist; stiff.	
				CB		LRIS-LR-131-4			

Total recovery = 3.8 feet.

NOTES: CB = Core Barrel; Composite sample collected from core barrel.

Maul Foster & Alongi, Inc. **Geologic Borehole Log/Well Construction**

Project Number: 9003.01.40 Well Number: LRIS-LR-132 Sheet: 1 of 1

Project Name: Port of Ridgefield TOC Elevation (feet):
 Project Location: Ridgefield, WA Surface Elevation (feet):
 Start/End Date: 12/3/2012 to 12/3/2012 Northing: -95668.7
 Driller/Equipment: Marine Sampling Systems/Vibracore Easting: 1228844.6
 Geologist/Engineer: Michael R. Murray Hole Depth: 6.0-feet
 Sample Method: Vibracore Outer Hole Diam: 3.75-inch

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1								0.0 to 6.0 feet: SANDY SILT (MLS); gray; wet; loose. @ 1.9 and 3.1 feet: sand lenses. @ 3.4, 4.5 and 6.0 feet: woody debris.	
2				CB	LRIS-LR-132-2				
3				CB	LRIS-LR-132-3				
4				CB	LRIS-LR-132-4				
5				CB	LRIS-LR-132-5				
6									

Total recovery = 6.0 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Geologic Borehole Log/Well Construction

Maul Foster & Alongi, Inc.	Project Number 9003.01.40	Well Number LRIS-LR-133	Sheet 1 of 1
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Project Name Port of Ridgefield	TOC Elevation (feet)
Project Location Ridgefield, WA	Surface Elevation (feet)
Start/End Date 12/3/2012 to 12/3/2012	Northing -108832.8
Driller/Equipment Marine Sampling Systems/Vibracore	Easting 1236469.2
Geologist/Engineer Michael R. Murray	Hole Depth 5.4-feet
Sample Method Vibracore	Outer Hole Diam 3.75-inch

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1								0.0 to 1.9 feet: SILT WITH SAND (ML); gray; wet; loose.	
2				CB	LRIS-LR-133-2			1.9 to 2.6 feet: WOODY DEBRIS with SAND (SW).	
3				CB	LRIS-LR-133-3			2.6 to 5.4 feet: SILT WITH SAND (ML); gray; moist; stiff. @ 4.5 to 4.8 feet: SAND (SW) lens; gray; wet; loose.	
4				CB	LRIS-LR-133-4				
5				CB	LRIS-LR-133-5				

Total recovery = 5.4 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number
9003.01.40

Well Number
LRIS-LR-134

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/2/2012 to 12/2/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-111651.5**
 Easting **1240858.4**
 Hole Depth **4.8-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1								0.0 to 2.4 feet: SANDY SILT (MLS); gray; wet; loose. Trace organic debris.	
2			CB	LRIS-LR-134-2					
3			CB	LRIS-LR-134-3		2.4 to 3.0 feet: WOODY DEBRIS with SANDY SILT (ML); gray; moist; with rounded cobbles.			
			CB	LRIS-LR-134-4		3.0 to 3.7 feet: SILT WITH SAND (ML); gray; moist; firm.			
4			CB	LRIS-LR-134-5		3.7 to 4.8 feet: SILTY SAND (SM); well sorted; gray; moist; firm.			

Total recovery = 4.8 feet.

NOTES: CB = Core Barrel; Composite sample collected from core barrel.

Geologic Borehole Log/Well Construction

Maul Foster & Alongi, Inc.

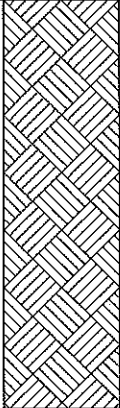
Project Number
9003.01.40

Well Number
LRIS-LR-135

Sheet
1 of 1

Project Name **Port of Ridgefield**
 Project Location **Ridgefield, WA**
 Start/End Date **12/3/2012 to 12/3/2012**
 Driller/Equipment **Marine Sampling Systems/Vibracore**
 Geologist/Engineer **Michael R. Murray**
 Sample Method **Vibracore**

TOC Elevation (feet)
 Surface Elevation (feet)
 Northing **-112627.1**
 Easting **1231736.6**
 Hole Depth **5.8-feet**
 Outer Hole Diam **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1								0.0 to 1.4 feet: SANDY SILT (MLS); gray; wet; loose.	
2				CB	LRIS-LR-135-2			1.4 to 3.4 feet: SAND WITH SILT (SW-SM); gray; moist; stiff. @ 2.3, 2.5 and 2.7 feet: SILT (ML) lenses.	
3				CB	LRIS-LR-135-3				
4				CB	LRIS-LR-135-4			3.4 to 5.8: SILT WITH SAND (ML); gray; moist; stiff.	
5				CB	LRIS-LR-135-5				

Total recovery = 5.8 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc.	Geologic Borehole Log/Well Construction		
	Project Number 9003.01.40	Well Number LRIS-LR-136	Sheet 1 of 1

Project Name Port of Ridgefield	TOC Elevation (feet)
Project Location Ridgefield, WA	Surface Elevation (feet)
Start/End Date 12/2/2012 to 12/2/2012	Northing -65154.4
Driller/Equipment Marine Sampling Systems/Vibracore	Easting 1204796.6
Geologist/Engineer Michael R. Murray	Hole Depth 5.5-feet
Sample Method Vibracore	Outer Hole Diam 3.75-inch

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data			Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)			
1									0.0 to 1.1 feet: SILT WITH SAND (ML); gray; wet; loose; with fine sand. @ 1.1 feet: wood.
2				CB	LRIS-LR-136-2				1.1 to 5.5 feet: SAND (SW); gray; firm; moist. @ 3.3 feet: redox banding.
3				CB	LRIS-LR-136-3				
4				CB	LRIS-LR-136-4				
5				CB	LRIS-LR-136-5				

Total recovery = 5.5 feet.

NOTES: CB = Core Barrel: Composite sample collected from core barrel.

Maul Foster & Alongi, Inc. **Geologic Borehole Log/Well Construction**

Project Number: **9003.01.40** Well Number: **LRIS-LR-137** Sheet: **1 of 1**

Project Name: **Port of Ridgefield** Project Location: **Ridgefield, WA** Start/End Date: **12/2/2012 to 12/2/2012** Driller/Equipment: **Marine Sampling Systems/Vibracore** Geologist/Engineer: **Michael R. Murray** Sample Method: **Vibracore**

TOC Elevation (feet): _____ Surface Elevation (feet): _____ Northing: **-30850.0** Easting: **1191847.9** Hole Depth: **6.0-feet** Outer Hole Diam: **3.75-inch**

Depth (feet, BGS)	Well Details	Interval	Percent Recovery	Sample Data				Blows/6"	Lithologic Column	Soil Description
				Collection Method	Number	Name (Type)				
1									0.0 to 6.0 feet: SANDY SILT (MLS); gray; wet; loose.	
2				CB	LRIS-LR-137-2					
3				CB	LRIS-LR-137-3			2.5 to 6.0 feet: SILTY SAND (SM); gray; moist; stiff.		
4				CB	LRIS-LR-137-4					
5				CB	LRIS-LR-137-5					
6										

Total recovery = 6.0 feet.

NOTES: CB = Core Barrel; Composite sample collected from core barrel.

APPENDIX E

ANALYTICAL REPORTS



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-36242-1

Client Project/Site: Port of Ridgefield

For:

Maul Foster & Alongi Inc
2001 NW 19th Avenue, Suite 200
Portland, Oregon 97239

Attn: Ms. Madi Novak

Pamela R. Johnson

Authorized for release by:
12/13/2012 11:39:57 AM

Pam Johnson
Project Manager I
pamr.johnson@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Job ID: 580-36242-1

Laboratory: TestAmerica Seattle

Narrative

Comments

No additional comments.

Receipt

The samples were received on 12/7/2012 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 8 coolers at receipt time were 2.6° C, 2.9° C, 3.4° C, 4.3° C, 4.5° C, 4.6° C, 5.9° C and 6.0° C.

Except:

The container labels for the following samples LRIS-LR-122-2 (580-36242-31), LRIS-LR-122-3 (580-36242-32), LRIS-LR-122-4 (580-36242-33), LRIS-LR-122-5 (580-36242-34), LRIS-LR-126 (580-36242-47) did not match the information listed on the Chain-of-Custody (COC). Sample 31, 32, 33, 34: The container labels list a time of 11:45, 11:50, 11:55, and 12:00 for samples 31, 32, 33, and 34 respectively. The Chain-of-Custody (COC) lists a time of 15:22 for these samples.

Sample 47: Container labels list 08:55 while the Chain-of-Custody (COC) lists 08:56 as the sampling time.

In both cases listed above, the samples have been logged in per the information provided on the Chain-of-Custody (COC).

The container label for the following samples LRIS-LR-130-FD (580-36242-54), LRIS-LR-130-FD-1 (580-36242-59), LRIS-LR-134 (580-36242-78) did not match the information listed on the Chain-of-Custody (COC). LRIS-LR-134 has a time of 13:19 on the label. Logged in according to the information provided on the Chain-of-Custody (COC).

LRIS-LR-130-FD is labeled on the container as LRIS-LR-130-2-DUP. LRIS-LR-130-FD-1 is labeled on the container as LRIS-LR-130-DUP. Both samples were lined up per sample time and logged in according to the Chain-of-Custody (COC). CG

General Chemistry

No analytical or quality issues were noted.

Definitions/Glossary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-103

Lab Sample ID: 580-36242-5

Date Collected: 12/04/12 11:55

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	12000		2000	610	mg/Kg			12/11/12 12:57	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	52		0.10		%			12/10/12 16:41	1
Percent Moisture	48		0.10		%			12/10/12 16:41	1



Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-106

Lab Sample ID: 580-36242-10

Date Collected: 12/04/12 11:42

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	18000		2000	610	mg/Kg			12/11/12 13:12	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	48		0.10		%			12/10/12 16:41	1
Percent Moisture	52		0.10		%			12/10/12 16:41	1



Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-109-3

Lab Sample ID: 580-36242-16

Date Collected: 12/02/12 15:15

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	12000		2000	610	mg/Kg			12/11/12 13:16	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	60		0.10		%			12/10/12 16:41	1
Percent Moisture	40		0.10		%			12/10/12 16:41	1

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-110-3

Lab Sample ID: 580-36242-20

Date Collected: 12/03/12 10:35

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	12000		2000	610	mg/Kg			12/11/12 13:20	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	58		0.10		%			12/10/12 16:41	1
Percent Moisture	42		0.10		%			12/10/12 16:41	1



Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-120-2

Lab Sample ID: 580-36242-27

Date Collected: 12/03/12 12:20

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	12000		2000	610	mg/Kg			12/11/12 13:24	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	57		0.10		%			12/10/12 16:41	1
Percent Moisture	43		0.10		%			12/10/12 16:41	1



Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-122-2

Lab Sample ID: 580-36242-31

Date Collected: 12/03/12 15:22

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	12000		2000	610	mg/Kg			12/11/12 13:28	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	65		0.10		%			12/10/12 16:41	1
Percent Moisture	35		0.10		%			12/10/12 16:41	1



Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-124-2

Lab Sample ID: 580-36242-36

Date Collected: 12/03/12 09:50

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	8500		2000	610	mg/Kg			12/11/12 13:32	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	65		0.10		%			12/10/12 16:41	1
Percent Moisture	35		0.10		%			12/10/12 16:41	1



Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-126-2

Lab Sample ID: 580-36242-43

Date Collected: 12/02/12 12:40

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	7600		2000	610	mg/Kg			12/11/12 13:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	69		0.10		%			12/10/12 16:41	1
Percent Moisture	31		0.10		%			12/10/12 16:41	1

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-126

Lab Sample ID: 580-36242-47

Date Collected: 12/04/12 08:56

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	9200		2000	610	mg/Kg			12/11/12 13:41	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	62		0.10		%			12/10/12 16:41	1
Percent Moisture	38		0.10		%			12/10/12 16:41	1



Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-129-2

Lab Sample ID: 580-36242-48

Date Collected: 12/02/12 13:50

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	7300		2000	610	mg/Kg			12/11/12 13:45	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	65		0.10		%			12/10/12 16:41	1
Percent Moisture	35		0.10		%			12/10/12 16:41	1



Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-129

Lab Sample ID: 580-36242-52

Date Collected: 12/04/12 10:10

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	13000		2000	610	mg/Kg			12/11/12 13:54	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	53		0.10		%			12/10/12 16:41	1
Percent Moisture	47		0.10		%			12/10/12 16:41	1



Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-130-2

Lab Sample ID: 580-36242-53

Date Collected: 12/02/12 14:40

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3700		2000	610	mg/Kg			12/11/12 13:58	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	74		0.10		%			12/10/12 16:41	1
Percent Moisture	26		0.10		%			12/10/12 16:41	1



Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-130-FD

Lab Sample ID: 580-36242-54

Date Collected: 12/02/12 14:40

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2000		2000	610	mg/Kg			12/11/12 14:02	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	73		0.10		%			12/10/12 16:41	1
Percent Moisture	27		0.10		%			12/10/12 16:41	1



Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-130

Lab Sample ID: 580-36242-58

Date Collected: 12/04/12 10:24

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	6100		2000	610	mg/Kg			12/11/12 14:06	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	62		0.10		%			12/10/12 16:41	1
Percent Moisture	38		0.10		%			12/10/12 16:41	1

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-130-FD-1

Lab Sample ID: 580-36242-59

Date Collected: 12/04/12 10:24

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	7500		2000	610	mg/Kg			12/11/12 14:11	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	60		0.10		%			12/10/12 16:41	1
Percent Moisture	40		0.10		%			12/10/12 16:41	1

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-131-2

Lab Sample ID: 580-36242-60

Date Collected: 12/02/12 16:30

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	17000		2000	610	mg/Kg			12/11/12 14:15	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	58		0.10		%			12/10/12 16:41	1
Percent Moisture	42		0.10		%			12/10/12 16:41	1

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-131

Lab Sample ID: 580-36242-63

Date Collected: 12/04/12 11:15

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	6400		2000	610	mg/Kg			12/11/12 14:19	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	62		0.10		%			12/10/12 16:41	1
Percent Moisture	38		0.10		%			12/10/12 16:41	1



Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-132-2

Lab Sample ID: 580-36242-64

Date Collected: 12/03/12 14:00

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	12000		2000	610	mg/Kg			12/11/12 14:23	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	70		0.10		%			12/10/12 16:41	1
Percent Moisture	30		0.10		%			12/10/12 16:41	1

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-133-2

Lab Sample ID: 580-36242-69

Date Collected: 12/03/12 15:15

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	12000		2000	610	mg/Kg			12/11/12 14:27	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	64		0.10		%			12/10/12 16:41	1
Percent Moisture	36		0.10		%			12/10/12 16:41	1

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-134-2

Lab Sample ID: 580-36242-74

Date Collected: 12/02/12 10:20

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	10000		2000	610	mg/Kg			12/11/12 14:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	62		0.10		%			12/10/12 16:41	1
Percent Moisture	38		0.10		%			12/10/12 16:41	1

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-137

Lab Sample ID: 580-36242-93

Date Collected: 12/04/12 09:14

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	9600		2000	610	mg/Kg			12/11/12 15:31	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	58		0.10		%			12/10/12 16:41	1
Percent Moisture	42		0.10		%			12/10/12 16:41	1



QC Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Method: 9060_PSEP - TOC (Puget Sound)

Lab Sample ID: MB 580-126310/3

Matrix: Solid

Analysis Batch: 126310

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		2000	610	mg/Kg			12/11/12 12:50	1

Lab Sample ID: LCS 580-126310/4

Matrix: Solid

Analysis Batch: 126310

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	2850	3080		mg/Kg		108	27.8 - 170

Lab Sample ID: LCSD 580-126310/5

Matrix: Solid

Analysis Batch: 126310

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD Limit
Total Organic Carbon	2850	2840		mg/Kg		100	27.8 - 170	8

Lab Sample ID: 580-36242-5 MS

Matrix: Solid

Analysis Batch: 126310

Client Sample ID: LRIS-LR-103

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	12000		122000	143000		mg/Kg		108	50 - 140

Lab Sample ID: 580-36242-5 MSD

Matrix: Solid

Analysis Batch: 126310

Client Sample ID: LRIS-LR-103

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD Limit
Total Organic Carbon	12000		107000	127000		mg/Kg		108	50 - 140	11 / 35

Lab Sample ID: 580-36242-5 DU

Matrix: Solid

Analysis Batch: 126310

Client Sample ID: LRIS-LR-103

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD Limit
Total Organic Carbon	12000			11800		mg/Kg				1 / 50

Lab Sample ID: MB 580-126317/3

Matrix: Solid

Analysis Batch: 126317

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		2000	610	mg/Kg			12/11/12 15:24	1

Lab Sample ID: LCS 580-126317/4

Matrix: Solid

Analysis Batch: 126317

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	2850	3150		mg/Kg		110	27.8 - 170

TestAmerica Seattle

QC Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Lab Sample ID: LCSD 580-126317/5
Matrix: Solid
Analysis Batch: 126317

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	2850	3630		mg/Kg		127	27.8 - 170	14	

Lab Sample ID: 580-36242-93 MS
Matrix: Solid
Analysis Batch: 126317

Client Sample ID: LRIS-LR-137
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	9600		109000	130000		mg/Kg		111	50 - 140		

Lab Sample ID: 580-36242-93 MSD
Matrix: Solid
Analysis Batch: 126317

Client Sample ID: LRIS-LR-137
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	9600		104000	125000		mg/Kg		111	50 - 140	4	35

Lab Sample ID: 580-36242-93 DU
Matrix: Solid
Analysis Batch: 126317

Client Sample ID: LRIS-LR-137
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	9600		9050		mg/Kg		5	50

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-36242-74 DU
Matrix: Solid
Analysis Batch: 126165

Client Sample ID: LRIS-LR-134-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	62		64		%		3	20
Percent Moisture	38		36		%		4	20

Lab Chronicle

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-103

Lab Sample ID: 580-36242-5

Date Collected: 12/04/12 11:55

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 12:57	RB	TAL SEA

Client Sample ID: LRIS-LR-106

Lab Sample ID: 580-36242-10

Date Collected: 12/04/12 11:42

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 13:12	RB	TAL SEA

Client Sample ID: LRIS-LR-109-3

Lab Sample ID: 580-36242-16

Date Collected: 12/02/12 15:15

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 13:16	RB	TAL SEA

Client Sample ID: LRIS-LR-110-3

Lab Sample ID: 580-36242-20

Date Collected: 12/03/12 10:35

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 13:20	RB	TAL SEA

Client Sample ID: LRIS-LR-120-2

Lab Sample ID: 580-36242-27

Date Collected: 12/03/12 12:20

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 13:24	RB	TAL SEA

Client Sample ID: LRIS-LR-122-2

Lab Sample ID: 580-36242-31

Date Collected: 12/03/12 15:22

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-122-2

Lab Sample ID: 580-36242-31

Date Collected: 12/03/12 15:22

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 13:28	RB	TAL SEA

Client Sample ID: LRIS-LR-124-2

Lab Sample ID: 580-36242-36

Date Collected: 12/03/12 09:50

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 13:32	RB	TAL SEA

Client Sample ID: LRIS-LR-126-2

Lab Sample ID: 580-36242-43

Date Collected: 12/02/12 12:40

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 13:37	RB	TAL SEA

Client Sample ID: LRIS-LR-126

Lab Sample ID: 580-36242-47

Date Collected: 12/04/12 08:56

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 13:41	RB	TAL SEA

Client Sample ID: LRIS-LR-129-2

Lab Sample ID: 580-36242-48

Date Collected: 12/02/12 13:50

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 13:45	RB	TAL SEA

Client Sample ID: LRIS-LR-129

Lab Sample ID: 580-36242-52

Date Collected: 12/04/12 10:10

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 13:54	RB	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-130-2

Lab Sample ID: 580-36242-53

Date Collected: 12/02/12 14:40

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 13:58	RB	TAL SEA

Client Sample ID: LRIS-LR-130-FD

Lab Sample ID: 580-36242-54

Date Collected: 12/02/12 14:40

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 14:02	RB	TAL SEA

Client Sample ID: LRIS-LR-130

Lab Sample ID: 580-36242-58

Date Collected: 12/04/12 10:24

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 14:06	RB	TAL SEA

Client Sample ID: LRIS-LR-130-FD-1

Lab Sample ID: 580-36242-59

Date Collected: 12/04/12 10:24

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 14:11	RB	TAL SEA

Client Sample ID: LRIS-LR-131-2

Lab Sample ID: 580-36242-60

Date Collected: 12/02/12 16:30

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 14:15	RB	TAL SEA

Client Sample ID: LRIS-LR-131

Lab Sample ID: 580-36242-63

Date Collected: 12/04/12 11:15

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Client Sample ID: LRIS-LR-131

Lab Sample ID: 580-36242-63

Date Collected: 12/04/12 11:15

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 14:19	RB	TAL SEA

Client Sample ID: LRIS-LR-132-2

Lab Sample ID: 580-36242-64

Date Collected: 12/03/12 14:00

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 14:23	RB	TAL SEA

Client Sample ID: LRIS-LR-133-2

Lab Sample ID: 580-36242-69

Date Collected: 12/03/12 15:15

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 14:27	RB	TAL SEA

Client Sample ID: LRIS-LR-134-2

Lab Sample ID: 580-36242-74

Date Collected: 12/02/12 10:20

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126310	12/11/12 14:31	RB	TAL SEA

Client Sample ID: LRIS-LR-137

Lab Sample ID: 580-36242-93

Date Collected: 12/04/12 09:14

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	126165	12/10/12 16:41	JL	TAL SEA
Total/NA	Analysis	9060_PSEP		1	126317	12/11/12 15:31	RB	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Certification Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-04-13
California	NELAC	9	1115CA	01-31-13
L-A-B	DoD ELAP		L2236	01-19-13
L-A-B	ISO/IEC 17025		L2236	01-19-13
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAC	10	WA100007	11-06-13
USDA	Federal		P330-11-00222	05-20-14
Washington	State Program	10	C553	02-17-13

Sample Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-36242-5	LRIS-LR-103	Solid	12/04/12 11:55	12/07/12 08:50
580-36242-10	LRIS-LR-106	Solid	12/04/12 11:42	12/07/12 08:50
580-36242-16	LRIS-LR-109-3	Solid	12/02/12 15:15	12/07/12 08:50
580-36242-20	LRIS-LR-110-3	Solid	12/03/12 10:35	12/07/12 08:50
580-36242-27	LRIS-LR-120-2	Solid	12/03/12 12:20	12/07/12 08:50
580-36242-31	LRIS-LR-122-2	Solid	12/03/12 15:22	12/07/12 08:50
580-36242-36	LRIS-LR-124-2	Solid	12/03/12 09:50	12/07/12 08:50
580-36242-43	LRIS-LR-126-2	Solid	12/02/12 12:40	12/07/12 08:50
580-36242-47	LRIS-LR-126	Solid	12/04/12 08:56	12/07/12 08:50
580-36242-48	LRIS-LR-129-2	Solid	12/02/12 13:50	12/07/12 08:50
580-36242-52	LRIS-LR-129	Solid	12/04/12 10:10	12/07/12 08:50
580-36242-53	LRIS-LR-130-2	Solid	12/02/12 14:40	12/07/12 08:50
580-36242-54	LRIS-LR-130-FD	Solid	12/02/12 14:40	12/07/12 08:50
580-36242-58	LRIS-LR-130	Solid	12/04/12 10:24	12/07/12 08:50
580-36242-59	LRIS-LR-130-FD-1	Solid	12/04/12 10:24	12/07/12 08:50
580-36242-60	LRIS-LR-131-2	Solid	12/02/12 16:30	12/07/12 08:50
580-36242-63	LRIS-LR-131	Solid	12/04/12 11:15	12/07/12 08:50
580-36242-64	LRIS-LR-132-2	Solid	12/03/12 14:00	12/07/12 08:50
580-36242-69	LRIS-LR-133-2	Solid	12/03/12 15:15	12/07/12 08:50
580-36242-74	LRIS-LR-134-2	Solid	12/02/12 10:20	12/07/12 08:50
580-36242-93	LRIS-LR-137	Solid	12/04/12 09:14	12/07/12 08:50

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36242

Page: 1 of 9
Cooler # 8461

Lab Information: Lab: Test America
Address: 5735 8th Street E, Tacoma, WA 98424
City: Tacoma
State: WA
Zip: 98424

Project Information: Site Code: Lake River Industrial Site
Project # 9003.01.40
Site Address: 111 W. Division St
City/State: Tukwila, WA
PO #
Send EDD to: Eric Navajo
CC Hardcopy to: Erik Navajo, Madi Novak
Lab Notes: TAT Regular Rush

Other Information: Send Invoice to: Laurie Olin, Madi Novak
Address: 911 1st St
City/State: Tukwila, WA
Phone #
Send EDD to: Eric Navajo
CC Hardcopy to: Erik Navajo, Madi Novak

Lab P.M.: Pam Johnson
Phone/Fax: /
PM email: /
Lab Quote #:

ITEM #	Field Sample No. / Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis		Preservative		Lab Notes
							ARCHIVE	1613B - Dioxin/Furan	Total Organic Carbon - COE 9060		
1	LRS-LR-103-2	SUB_S O-SED	C	12/03/2012 13:30	3		X				
2	LRS-LR-103-3	SUB_S O-SED	C	12/03/2012 13:35	3		X				
3	LRS-LR-103-4	SUB_S O-SED	C	12/03/2012 13:40	3		X				
4	LRS-LR-103-5	SUB_S O-SED	C	12/03/2012 13:45	3		X				
5	LRS-LR-103	SOIL-SED	G	12/04/2012 11:55	3		X	X			
6	LRS-LR-106-2	SUB_S O-SED	G	12/02/2012 17:25	3		X				
7	LRS-LR-106-3	SUB_S O-SED	C	12/02/2012 17:30	3		X				
8	LRS-LR-106-4	SUB_S O-SED	C	12/02/2012 17:35	3		X				
9	LRS-LR-106-5	SUB_S O-SED	C	12/02/2012 17:40	3		X				
10	LRS-LR-106	SOIL-SED	C	12/04/2012 11:42	3		X	X			
11	LRS-LR-108-2	SUB_S O-SED	C	12/03/2012 11:20	3		X				

Additional Comments/Special Instructions:

REINQUISHED BY / AFFILIATION: *Eric Navajo / MFA* DATE: *12/12/12* TIME: *13:30*
ACCEPTED BY / AFFILIATION: *Tony Navajo / TASA* DATE: *12/12/12* TIME: *08:50*

Company:	Tracking #:	DATE/TIME:	Temp in OC	Samples on Ice?	Sample intact?	Trip Blank?
			Y/N	Y/N	Y/N	Y/N

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36242

Lab Information: **Project Information:** **Other Information:**

Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Address: Send Invoice to:	City/State:	Phone #:
Address:	Project #	City/State:	City/State:	Phone #:
Site Address:	Site Address:	City/State:	City/State:	Phone #:
Lab P.M.:	City:	State, Zip:	PO #:	
Phone/Fax: /	P.M. Name:	Send EDD to:	CC Hardcopy to:	
P.M. email:	Phone/Fax:	CC Hardcopy to:	CC Hardcopy to:	
Lab Quote #:	P.M. Email:			

ITEM #	Field Sample No. / Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush
12	LRS-LR-108-3	SUB_S O-SED	C	12/03/2012 11:25	3		X				
13	LRS-LR-108-4	SUB_S O-SED	C	12/03/2012 11:30	3		X				
14	LRS-LR-108-5	SUB_S O-SED	C	12/03/2012 11:35	3		X				
15	LRS-LR-109-2	SUB_S O-SED	C	12/02/2012 15:10	3		X				
16	LRS-LR-109-3	SUB_S O-SED	G	12/02/2012 15:15	3		X				
17	LRS-LR-109-4	SUB_S O-SED	G	12/02/2012 15:20	3		X				
18	LRS-LR-109-5	SUB_S O-SED	C	12/02/2012 15:25	3		X				
19	LRS-LR-110-2	SUB_S O-SED	C	12/03/2012 10:30	3		X				
20	LRS-LR-110-3	SUB_S O-SED	C	12/03/2012 10:35	3		X				
21	LRS-LR-110-4	SUB_S O-SED	C	12/03/2012 10:40	3		X				
22	LRS-LR-110-5	SUB_S O-SED	C	12/03/2012 10:45	3		X				

Task:	2012_LR_SED
Total # of Samples:	97
Notes:	F= Field Filtered , H= Hold
Event Complete?	

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Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: **Task:** TAT **Total # of Samples:** 97 **2012_LR_SED** **Event Complete?**

Address:	Site Code:	Lake River Industrial Site	Send Invoice to:	
Project #	Site Address	City/State:	City/State:	Phone #:
Lab PIV:	City	State, Zip	PO #	
Phone/Fax: /	PIV Name	Send EDD to	CC Hardcopy to	
PIV email	Phone/Fax:	CC Hardcopy to	CC Hardcopy to	
Lab Quote #:	PIV Email:			

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush
23	LRS-LR-119-2	SUB_S O-SED	C	12/03/2012 14:30	3		Archive			X	
24	LRS-LR-119-3	SUB_S O-SED	C	12/03/2012 14:35	3		1613B - Dioxin/Furan			X	
25	LRS-LR-119-4	SUB_S O-SED	C	12/03/2012 14:40	3		Total Organic Carbon - COE 9060			X	
26	LRS-LR-119-5	SUB_S O-SED	C	12/03/2012 14:45	3					X	
27	LRS-LR-120-2	SUB_S O-SED	G	12/03/2012 12:20	3					X	
28	LRS-LR-120-3	SUB_S O-SED	G	12/03/2012 12:25	3					X	
29	LRS-LR-120-4	SUB_S O-SED	C	12/03/2012 12:30	3					X	
30	LRS-LR-120-5	SUB_S O-SED	C	12/03/2012 12:35	3					X	
31	LRS-LR-122-2	SUB_S O-SED	C	12/03/2012 15:22	3					X	
32	LRS-LR-122-3	SUB_S O-SED	C	12/03/2012 15:22	3					X	
33	LRS-LR-122-4	SUB_S O-SED	C	12/03/2012 15:22	3					X	

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Lab Information:

Project Information:

Other Information:

Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Address:	City/State:	Phone #:
Address:	Project #	Address:	City/State:	Phone #:
	Site Address	Address:	City/State:	Phone #:
Lab PIV:	City:	State:	Zip:	
Phone/Fax:	PIV Name	Send EDD to	PO #	
PIV email	Phone/Fax:	CC Hardcopy to	CC Hardcopy to	
Lab Quote #:	PIV Email:	CC Hardcopy to		

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Notes: F= Field Filtered , H= Hold	Rush	Event Complete?
34	LRS-LR-122-5	SUB_S O-SED	C	12/03/2012 15:22	3		X	Archive					
35	LRS-LR-122	SUB_S O-SED	C	12/04/2012 11:27	3		X	1613B - Dioxin/Furan					
36	LRS-LR-124-2	SUB_S O-SED	C	12/03/2012 09:50	3		X	Total Organic Carbon - COE 9060					
37	LRS-LR-124-3	SUB_S O-SED	C	12/03/2012 10:00	3		X						
38	LRS-LR-124-4	SUB_S O-SED	G	12/03/2012 10:05	3		X						
39	LRS-LR-124-5	SUB_S O-SED	G	12/03/2012 10:10	3		X						
40	LRS-LR-125-2	SUB_S O-SED	C	12/02/2012 13:10	3		X						
41	LRS-LR-125-3	SUB_S O-SED	C	12/02/2012 13:15	3		X						
42	LRS-LR-125-4	SUB_S O-SED	C	12/02/2012 13:20	3		X						
43	LRS-LR-126-2	SUB_S O-SED	C	12/02/2012 12:40	3		X						
44	LRS-LR-126-3	SUB_S O-SED	C	12/02/2012 12:45	3		X						

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

36242

Lab Information: Unknown Laboratory **Project Information:** Site Code: Lake River Industrial Site **Other Information:** Send Invoice to: **Task:** 2012_LR_SED

Address: Project # Site Address City/State Phone # Total # of Samples: 97 Notes: F= Field Filtered, H= Hold Rush Event Complete?

Lab PM: City State, Zip PO # Send EDD to Preservative Lab Notes

Phone/Fax: / PM Name PM Email CC Hardcopy to CC Hardcopy to

Lab Quote #:

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Archive	1613B - Dioxin/Furan	Total Organic Carbon - COE 9060					
46	LRS-LR-126-4	SUB_S O-SED	C	12/02/2012 12:47	3		X	X	X						
46	LRS-LR-126-5	SUB_S O-SED	C	12/02/2012 12:50	3		X	X	X						
47	LRS-LR-126	SOIL-SED	C	12/04/2012 08:56	3		X	X	X						
48	LRS-LR-129-2	SUB_S O-SED	C	12/02/2012 13:50	3		X	X	X						
49	LRS-LR-129-3	SUB_S O-SED	G	12/02/2012 13:55	3		X								
49	LRS-LR-129-4	SUB_S O-SED	G	12/02/2012 14:00	3		X								
50	LRS-LR-129-5	SUB_S O-SED	C	12/02/2012 14:05	3		X								
51	LRS-LR-129	SOIL-SED	C	12/04/2012 10:10	3		X	X	X						
52	LRS-LR-130-2	SUB_S O-SED	C	12/02/2012 14:40	3		X	X	X						
54	LRS-LR-130-FD	QAQC		12/02/2012 14:40	3		X	X	X						
55	LRS-LR-130-3	SUB_S O-SED		12/02/2012 14:45	3		X								

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: **Task:** Total # of Samples: 97 2012_LR_SED Event Complete?

Address: Site Code: Project # Lake River Industrial Site Address: Send Invoice to: City/State: Phone #:

Site Address City/State State, Zip PO # Send EDD to CC Hardcopy to CC Hardcopy to

Lab P.M.: City P.M. Name State, Zip PM Email: PM Email:

PM email: PM Email: PM Email:

Lab Quote #: PM Email:

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Notes: F=Field Filtered, H=Hold	Rush
56	LRS-LR-130-4	SUB_S O-SED	C	12/02/2012 14:50	3		Archive			X		
57	LRS-LR-130-5	SUB_S O-SED	C	12/02/2012 14:55	3		1613B - Dioxin/Furan			X		
58	LRS-LR-130	SOIL-SED	C	12/04/2012 10:24	3		Total Organic Carbon - COE 9060			X		
59	LRS-LR-130-FD-1	QAQC	C	12/04/2012 10:24	3					X		
60	LRS-LR-131-2	SUB_S O-SED	G	12/02/2012 16:30	3					X		
61	LRS-LR-131-3	SUB_S O-SED	G	12/02/2012 16:35	3					X		
62	LRS-LR-131-4	SUB_S O-SED	C	12/02/2012 16:40	3					X		
63	LRS-LR-131	SOIL-SED	C	12/04/2012 11:15	3					X		
64	LRS-LR-132-2	SUB_S O-SED	C	12/03/2012 14:00	3					X		
65	LRS-LR-132-3	SUB_S O-SED	C	12/03/2012 14:05	3					X		
66	LRS-LR-132-4	SUB_S O-SED	C	12/03/2012 14:10	3					X		

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Lab: Unknown Laboratory **Project Information:** Site Code: Lake River Industrial Site **Other Information:** Send Invoice to: Task: 2012_LR_SED
Address: Project # Address: Total # of Samples: 97 Event Complete?

City: State: Zip PO # Send EDD to TAT Rush Notes: F= Field Filtered, H= Hold

Phone/Fax: P/M Name City/State: Phone #: Preservative

P/M Email: P/M Email: CC Hardcopy to CC Hardcopy to

Lab P/M: Lab Quote #:

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis		Preservative		Lab Notes	
							Archive	1613B - Dioxin/Furan	Total Organic Carbon - COE 9060			
67	LRS-LR-132-5	SUB_S O-SED	C	12/03/2012 14:15	3		X					
68	LRS-LR-132	SOL- SED	C	12/04/2012 12:06	3		X					
69	LRS-LR-133-2	SUB_S O-SED	C	12/03/2012 15:15	3		X	X				
70	LRS-LR-133-3	SUB_S O-SED	C	12/03/2012 15:20	3		X					
71	LRS-LR-133-4	SUB_S O-SED	G	12/03/2012 15:25	3		X					
72	LRS-LR-133-5	SUB_S O-SED	G	12/03/2012 15:30	3		X					
73	LRS-LR-133	SOL- SED	C	12/04/2012 12:49	3		X					
74	LRS-LR-134-2	SUB_S O-SED	C	12/02/2012 10:20	3		X	X				
75	LRS-LR-134-3	SUB_S O-SED	C	12/02/2012 10:28	3		X					
76	LRS-LR-134-4	SUB_S O-SED	C	12/02/2012 10:30	3		X					
77	LRS-LR-134-5	SUB_S O-SED	C	12/02/2012 10:35	3		X					

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: **Task:** TAT Total # of Samples: 97 2012_LR_SED Event Complete?

Lab PIV:	City:	State:	Zip:	PO #:	Send EDD to:	Phone #:
Phone/Fax: /	PIV Name:				CC Hardcopy to	
PIV Email:	Phone/Fax:				CC Hardcopy to	
Lab Quote #:	PIV Email:					

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	Rush
78	LRS-LR-134	SOIL-SED	C	12/04/2012 13:10	3		Archive			
79	LRS-LR-135-2	SUB_S O-SED	C	12/03/2012 15:45	3		1613B - Dioxin/Furan			
80	LRS-LR-135-3	SUB_S O-SED	C	12/03/2012 15:50	3		Total Organic Carbon - COE 9060			
81	LRS-LR-135-4	SUB_S O-SED	C	12/03/2012 15:55	3					
82	LRS-LR-135-5	SUB_S O-SED	G	12/03/2012 16:00	3					
83	LRS-LR-135	SOIL-SED	G	12/04/2012 13:01	3					
84	LRS-LR-136-2	SUB_S O-SED	C	12/02/2012 16:50	3					
85	LRS-LR-136-3	SUB_S O-SED	C	12/02/2012 16:55	3					
86	LRS-LR-136-4	SUB_S O-SED	C	12/02/2012 17:00	3					
87	LRS-LR-136-5	SUB_S O-SED	C	12/02/2012 17:05	3					
88	LRS-LR-136	SOIL-SED	C	12/04/2012 10:39	3					

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

362242

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: _____

Address:	Site Code:	Project #:	City/State:	Phone #:
Site Address:	City:	State:	Zip:	
Lab P.M.:	PM Name:	Send EDD to:	PO #:	
Phone/Fax:	Phone/Fax:	CC Hardcopy to:	CC Hardcopy to:	
PM Email:	PM Email:	CC Hardcopy to:		
Lab Quote #:				

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush	Event Complete?
88	LRS-LR-137-2	SUB_S O-SED	C	12/02/2012 12:10	3		Archive	X				
89	LRS-LR-137-3	SUB_S O-SED	C	12/02/2012 12:15	3		1613B - Dioxin/Furan	X				
90	LRS-LR-137-4	SUB_S O-SED	C	12/02/2012 12:17	3		Total Organic Carbon - COE 9060	X				
91	LRS-LR-137-5	SUB_S O-SED	C	12/02/2012 12:20	3			X				
92	LRS-LR-137	SOIL-SED	G	12/04/2012 09:14	3			X				
93	LRS-LR-RB-20121202	QAQC	G	12/02/2012 17:00	2			X				
94	LRS-LR-RB-20121203	QAQC	C	12/03/2012 17:30	2			X				
95	LRS-LR-RB-20121204	QAQC	C	12/04/2012 17:35	1			X				
96	LRS-LR-PS-SRM	SOIL-SED	C	11/26/2012 10:00	2			X				
97												

Task: Total # of Samples: 97 2012_LR_SED Event Complete?

Notes: F= Field Filtered , H= Hold

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-1

Login Number: 36242

List Source: TestAmerica Seattle

List Number: 1

Creator: Riley, Nicole

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Not requested on COC.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-36242-2

Client Project/Site: Port of Ridgefield
Revision: 1

For:

Maul Foster & Alongi Inc
2001 NW 19th Avenue, Suite 200
Portland, Oregon 97239

Attn: Ms. Madi Novak



Authorized for release by:
2/6/2013 12:50:00 PM

Pam Johnson
Project Manager I
pamr.johnson@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Job ID: 580-36242-2

Laboratory: TestAmerica Seattle

Narrative

Comments

No additional comments.

Receipt

The samples were received on 12/7/2012 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 8 coolers at receipt time were 2.6° C, 2.9° C, 3.4° C, 4.3° C, 4.5° C, 4.6° C, 5.9° C and 6.0° C.

Except:

The container labels for the following samples LRIS-LR-122-2 (580-36242-31), LRIS-LR-122-3 (580-36242-32), LRIS-LR-122-4 (580-36242-33), LRIS-LR-122-5 (580-36242-34), LRIS-LR-126 (580-36242-47) did not match the information listed on the Chain-of-Custody (COC). Sample 31, 32, 33, 34: The container labels list a time of 11:45, 11:50, 11:55, and 12:00 for samples 31, 32, 33, and 34 respectively. The Chain-of-Custody (COC) lists a time of 15:22 for these samples. Sample 47: Container labels list 08:55 while the Chain-of-Custody (COC) lists 08:56 as the sampling time.

In both cases listed above, the samples have been logged in per the information provided on the Chain-of-Custody (COC).

The container label for the following samples LRIS-LR-130-FD (580-36242-54), LRIS-LR-130-FD-1 (580-36242-59), LRIS-LR-134 (580-36242-78) did not match the information listed on the Chain-of-Custody (COC). LRIS-LR-134 has a time of 13:19 on the label. Logged in according to the information provided on the Chain-of-Custody (COC).

LRIS-LR-130-FD is labeled on the container as LRIS-LR-130-2-DUP. LRIS-LR-130-FD-1 is labeled on the container as LRIS-LR-130-DUP. Both samples were lined up per sample time and logged in according to the Chain-of-Custody (COC). CG

Dioxin - Method 1613B

Ion abundance ratios are outside criteria for the following samples and for the MB: (MB 320-7287/1-A), LRIS-LR-103 (580-36242-5), LRIS-LR-109-3 (580-36242-16), LRIS-LR-126-2 (580-36242-43), LRIS-LR-129-2 (580-36242-48). Quantitation is based on the theoretical ion abundance ratio; therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC).

Ion abundance ratios are outside criteria for the following samples: LRIS-LR-129 (580-36242-52), LRIS-LR-130 (580-36242-58), LRIS-LR-130-2 (580-36242-53), LRIS-LR-130-FD (580-36242-54), LRIS-LR-130-FD-1 (580-36242-59), LRIS-LR-131-2 (580-36242-60). Quantitation is based on the theoretical ion abundance ratio; therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC).

Ion abundance ratios are outside criteria for the following samples: LRIS-LR-131 (580-36242-63), LRIS-LR-132-2 (580-36242-64), LRIS-LR-133-2 (580-36242-69), LRIS-LR-PS-SRM (580-36242-97). Quantitation is based on the theoretical ion abundance ratio; therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC).

Ion abundance ratios are outside criteria for the following samples and in the MB: (MB 320-7414/1-A), LRIS-LR-137 (580-36242-93), LRIS-LR-PS-SRM (580-36242-97). Quantitation is based on the theoretical ion abundance ratio; therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC).

The concentration of OCDD associated with the following sample exceeded the instrument calibration range: 580-36242-74. This analyte has been qualified with an E flag; however, the peak did not saturate the instrument detector. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range.

The concentrations of OCDD associated with the following samples exceeded the instrument calibration range: 580-36242-20, 580-36242-27, 580-36242-31, 580-36242-43. This analyte has been qualified; however, the peaks did not saturate the instrument detector. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range.

The concentrations of 580-36242-1, 580-36242-2, 580-36242-3, 580-36242-4, 580-36242-6, 580-36242-7, 580-36242-8 HpCDD associated with the following samples exceeded the instrument calibration range: <&commamerge>. This analyte has been qualified; however, the peaks did not saturate the instrument detector. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range.

Case Narrative

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Job ID: 580-36242-2 (Continued)

Laboratory: TestAmerica Seattle (Continued)

Ion abundance ratios are outside criteria for the following sample: LRIS-LR-RB-20121203 (580-36242-95). Quantitation is based on the theoretical ion abundance ratio; therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC).

The following samples exhibited elevated noise or matrix interferences for 580-36242-1, 580-36242-2, 580-36242-3, 580-36242-4, 580-36242-6, 580-36242-7, 580-36242-8 HpCDD and OCDD requiring the detection limits to be raised appropriately. These analytes were flagged with the "G" qualifier.

Sample LRIS-LR-PS-SRM (580-36242-97) is an SRM that was provided by the client. This sample was prepped twice as two batches were required for job 580-36242. The results for sample LRIS-LR-PS-SRM (580-36242-97) were reported as both primary (prep date 12/12/12) and secondary (prep date 12/14/12) in the final report and billed accordingly.

The following samples LRIS-LR-106 (580-36242-10), LRIS-LR-110-3 (580-36242-20), LRIS-LR-120-2 (580-36242-27), LRIS-LR-122-2 (580-36242-31), LRIS-LR-126-2 (580-36242-43), LRIS-LR-134-2 (580-36242-74) were diluted due to the high OCDD levels. Elevated reporting limits (RLs) for this compound are provided and flagged with a "G" qualifier.

The following samples LRIS-LR-110-3 (580-36242-20), LRIS-LR-122-2 (580-36242-31) were diluted due to the nature of the sample matrix. Elevated reporting limits (RLs) for HpCDD are provided and flagged with a "G" qualifier.

No other analytical or quality issues were noted.

Dioxin Prep

No analytical or quality issues were noted.

Definitions/Glossary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The isomer is qualified as positively identified, but at an estimated quantity because the quantitation is based on the theoretical ratio for these samples.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-103

Lab Sample ID: 580-36242-5

Date Collected: 12/04/12 11:55

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 51.6

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.21	J	0.77	0.040	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
2,3,7,8-TCDF	0.73	J B	0.77	0.051	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
1,2,3,7,8-PeCDD	0.45	J q	3.9	0.083	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
1,2,3,7,8-PeCDF	1.0	J	3.9	0.071	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
2,3,4,7,8-PeCDF	1.1	J	3.9	0.077	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
1,2,3,4,7,8-HxCDD	0.53	J q	3.9	0.055	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
1,2,3,6,7,8-HxCDD	6.7		3.9	0.056	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
1,2,3,7,8,9-HxCDD	2.1	J	3.9	0.050	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
1,2,3,4,7,8-HxCDF	3.2	J	3.9	0.055	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
1,2,3,6,7,8-HxCDF	1.2	J	3.9	0.051	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
1,2,3,7,8,9-HxCDF	ND		3.9	0.054	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
2,3,4,6,7,8-HxCDF	1.7	J	3.9	0.053	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
1,2,3,4,6,7,8-HpCDD	120	B	3.9	0.30	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
1,2,3,4,6,7,8-HpCDF	16	B	3.9	0.12	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
1,2,3,4,7,8,9-HpCDF	0.64	J	3.9	0.15	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
OCDD	1300	B	7.7	0.68	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
OCDF	32		7.7	0.13	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
Total TCDD	1.7	B q	0.77	0.040	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
Total TCDF	2.9	B q	0.77	0.051	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
Total PeCDD	2.7	J q	3.9	0.083	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
Total PeCDF	8.8	q	3.9	0.074	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
Total HxCDD	28	q	3.9	0.054	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
Total HxCDF	40		3.9	0.053	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
Total HpCDD	240	B	3.9	0.30	pg/g	*	12/12/12 13:29	12/13/12 20:11	1
Total HpCDF	56	B	3.9	0.14	pg/g	*	12/12/12 13:29	12/13/12 20:11	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	66		25 - 164	12/12/12 13:29	12/13/12 20:11	1
13C-2,3,7,8-TCDF	78		24 - 169	12/12/12 13:29	12/13/12 20:11	1
13C-1,2,3,7,8-PeCDD	62		25 - 181	12/12/12 13:29	12/13/12 20:11	1
13C-1,2,3,7,8-PeCDF	61		24 - 185	12/12/12 13:29	12/13/12 20:11	1
13C-2,3,4,7,8-PeCDF	65		21 - 178	12/12/12 13:29	12/13/12 20:11	1
13C-1,2,3,4,7,8-HxCDD	62		32 - 141	12/12/12 13:29	12/13/12 20:11	1
13C-1,2,3,6,7,8-HxCDD	57		28 - 130	12/12/12 13:29	12/13/12 20:11	1
13C-1,2,3,4,7,8-HxCDF	66		26 - 152	12/12/12 13:29	12/13/12 20:11	1
13C-1,2,3,6,7,8-HxCDF	69		26 - 123	12/12/12 13:29	12/13/12 20:11	1
13C-1,2,3,7,8,9-HxCDF	69		29 - 147	12/12/12 13:29	12/13/12 20:11	1
13C-2,3,4,6,7,8-HxCDF	68		28 - 136	12/12/12 13:29	12/13/12 20:11	1
13C-1,2,3,4,6,7,8-HpCDD	50		23 - 140	12/12/12 13:29	12/13/12 20:11	1
13C-1,2,3,4,6,7,8-HpCDF	57		28 - 143	12/12/12 13:29	12/13/12 20:11	1
13C-1,2,3,4,7,8,9-HpCDF	62		26 - 138	12/12/12 13:29	12/13/12 20:11	1
13C-OCDD	59		17 - 157	12/12/12 13:29	12/13/12 20:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	106		35 - 197	12/12/12 13:29	12/13/12 20:11	1

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-106

Lab Sample ID: 580-36242-10

Date Collected: 12/04/12 11:42

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 47.8

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.35	J	0.84	0.044	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
2,3,7,8-TCDF	0.94	B	0.84	0.055	pg/g	☼	12/12/12 13:29	12/14/12 14:49	1
1,2,3,7,8-PeCDD	0.91	J	4.2	0.11	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
1,2,3,7,8-PeCDF	2.2	J	4.2	0.11	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
2,3,4,7,8-PeCDF	3.1	J	4.2	0.12	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
1,2,3,4,7,8-HxCDD	2.7	J	4.2	0.082	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
1,2,3,6,7,8-HxCDD	23		4.2	0.090	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
1,2,3,7,8,9-HxCDD	6.6		4.2	0.078	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
1,2,3,4,7,8-HxCDF	10		4.2	0.091	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
1,2,3,6,7,8-HxCDF	3.4	J	4.2	0.083	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
1,2,3,7,8,9-HxCDF	ND		4.2	0.084	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
2,3,4,6,7,8-HxCDF	2.5	J	4.2	0.082	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
1,2,3,4,6,7,8-HpCDD	450	B	4.2	0.49	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
1,2,3,4,6,7,8-HpCDF	56	B	4.2	0.29	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
1,2,3,4,7,8,9-HpCDF	2.5	J	4.2	0.35	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
OCDD	4500	B G	290	290	pg/g	☼	12/12/12 13:29	01/11/13 01:01	20
OCDF	88		8.4	0.14	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
Total TCDD	2.3	B q	0.84	0.044	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
Total TCDF	5.7	B q	0.84	0.052	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
Total PeCDD	5.9	q	4.2	0.11	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
Total PeCDF	31	q	4.2	0.12	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
Total HxCDD	90	q	4.2	0.083	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
Total HxCDF	130		4.2	0.085	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
Total HpCDD	890	B	4.2	0.49	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1
Total HpCDF	190	B	4.2	0.32	pg/g	☼	12/12/12 13:29	12/13/12 20:55	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	62		25 - 164	12/12/12 13:29	12/13/12 20:55	1
13C-2,3,7,8-TCDD	56		25 - 164	12/12/12 13:29	12/14/12 14:49	1
13C-2,3,7,8-TCDF	73		24 - 169	12/12/12 13:29	12/13/12 20:55	1
13C-2,3,7,8-TCDF	58		24 - 169	12/12/12 13:29	12/14/12 14:49	1
13C-1,2,3,7,8-PeCDD	59		25 - 181	12/12/12 13:29	12/13/12 20:55	1
13C-1,2,3,7,8-PeCDF	59		24 - 185	12/12/12 13:29	12/13/12 20:55	1
13C-2,3,4,7,8-PeCDF	61		21 - 178	12/12/12 13:29	12/13/12 20:55	1
13C-1,2,3,4,7,8-HxCDD	60		32 - 141	12/12/12 13:29	12/13/12 20:55	1
13C-1,2,3,6,7,8-HxCDD	55		28 - 130	12/12/12 13:29	12/13/12 20:55	1
13C-1,2,3,4,7,8-HxCDF	64		26 - 152	12/12/12 13:29	12/13/12 20:55	1
13C-1,2,3,6,7,8-HxCDF	68		26 - 123	12/12/12 13:29	12/13/12 20:55	1
13C-1,2,3,7,8,9-HxCDF	69		29 - 147	12/12/12 13:29	12/13/12 20:55	1
13C-2,3,4,6,7,8-HxCDF	66		28 - 136	12/12/12 13:29	12/13/12 20:55	1
13C-1,2,3,4,6,7,8-HpCDD	49		23 - 140	12/12/12 13:29	12/13/12 20:55	1
13C-1,2,3,4,6,7,8-HpCDF	54		28 - 143	12/12/12 13:29	12/13/12 20:55	1
13C-1,2,3,4,7,8,9-HpCDF	61		26 - 138	12/12/12 13:29	12/13/12 20:55	1
13C-OCDD	46		17 - 157	12/12/12 13:29	01/11/13 01:01	20
13C-OCDD	57		17 - 157	12/12/12 13:29	12/13/12 20:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	101		35 - 197	12/12/12 13:29	12/13/12 20:55	1
37Cl4-2,3,7,8-TCDD	91		35 - 197	12/12/12 13:29	12/14/12 14:49	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-109-3

Lab Sample ID: 580-36242-16

Date Collected: 12/02/12 15:15

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 60.4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.14	J q	0.66	0.061	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
2,3,7,8-TCDF	1.0	B	0.66	0.037	pg/g	*	12/12/12 13:29	12/14/12 15:26	1
1,2,3,7,8-PeCDD	0.34	J	3.3	0.11	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
1,2,3,7,8-PeCDF	0.73	J	3.3	0.11	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
2,3,4,7,8-PeCDF	1.1	J	3.3	0.12	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
1,2,3,4,7,8-HxCDD	0.97	J	3.3	0.075	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
1,2,3,6,7,8-HxCDD	5.9		3.3	0.077	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
1,2,3,7,8,9-HxCDD	2.2	J q	3.3	0.069	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
1,2,3,4,7,8-HxCDF	2.1	J	3.3	0.056	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
1,2,3,6,7,8-HxCDF	1.2	J	3.3	0.055	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
1,2,3,7,8,9-HxCDF	ND		3.3	0.058	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
2,3,4,6,7,8-HxCDF	0.70	J	3.3	0.052	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
1,2,3,4,6,7,8-HpCDD	100	B	3.3	0.30	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
1,2,3,4,6,7,8-HpCDF	12	B	3.3	0.12	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
1,2,3,4,7,8,9-HpCDF	0.62	J q	3.3	0.16	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
OCDD	920	B	6.6	0.59	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
OCDF	14		6.6	0.097	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
Total TCDD	1.2	B q	0.66	0.061	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
Total TCDF	8.8	B q	0.66	0.056	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
Total PeCDD	2.5	J q	3.3	0.11	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
Total PeCDF	10	q	3.3	0.12	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
Total HxCDD	33	q	3.3	0.074	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
Total HxCDF	32		3.3	0.055	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
Total HpCDD	200	B	3.3	0.30	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
Total HpCDF	37	B q	3.3	0.14	pg/g	*	12/12/12 13:29	12/13/12 21:40	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	80		25 - 164				12/12/12 13:29	12/13/12 21:40	1
13C-2,3,7,8-TCDD	71		25 - 164				12/12/12 13:29	12/14/12 15:26	1
13C-2,3,7,8-TCDF	96		24 - 169				12/12/12 13:29	12/13/12 21:40	1
13C-2,3,7,8-TCDF	72		24 - 169				12/12/12 13:29	12/14/12 15:26	1
13C-1,2,3,7,8-PeCDD	77		25 - 181				12/12/12 13:29	12/13/12 21:40	1
13C-1,2,3,7,8-PeCDF	76		24 - 185				12/12/12 13:29	12/13/12 21:40	1
13C-2,3,4,7,8-PeCDF	80		21 - 178				12/12/12 13:29	12/13/12 21:40	1
13C-1,2,3,4,7,8-HxCDD	76		32 - 141				12/12/12 13:29	12/13/12 21:40	1
13C-1,2,3,6,7,8-HxCDD	78		28 - 130				12/12/12 13:29	12/13/12 21:40	1
13C-1,2,3,4,7,8-HxCDF	85		26 - 152				12/12/12 13:29	12/13/12 21:40	1
13C-1,2,3,6,7,8-HxCDF	92		26 - 123				12/12/12 13:29	12/13/12 21:40	1
13C-1,2,3,7,8,9-HxCDF	90		29 - 147				12/12/12 13:29	12/13/12 21:40	1
13C-2,3,4,6,7,8-HxCDF	92		28 - 136				12/12/12 13:29	12/13/12 21:40	1
13C-1,2,3,4,6,7,8-HpCDD	70		23 - 140				12/12/12 13:29	12/13/12 21:40	1
13C-1,2,3,4,6,7,8-HpCDF	81		28 - 143				12/12/12 13:29	12/13/12 21:40	1
13C-1,2,3,4,7,8,9-HpCDF	86		26 - 138				12/12/12 13:29	12/13/12 21:40	1
13C-OCDD	86		17 - 157				12/12/12 13:29	12/13/12 21:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	107		35 - 197				12/12/12 13:29	12/13/12 21:40	1
37Cl4-2,3,7,8-TCDD	96		35 - 197				12/12/12 13:29	12/14/12 15:26	1

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-110-3

Lab Sample ID: 580-36242-20

Date Collected: 12/03/12 10:35

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 58.3

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	3.2		0.69	0.10	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
2,3,7,8-TCDF	4.0	B	0.69	0.045	pg/g	☼	12/12/12 13:29	12/14/12 16:04	1
1,2,3,7,8-PeCDD	14		3.4	0.18	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
1,2,3,7,8-PeCDF	9.5		3.4	0.25	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
2,3,4,7,8-PeCDF	11		3.4	0.28	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
1,2,3,4,7,8-HxCDD	23		3.4	0.20	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
1,2,3,6,7,8-HxCDD	110		3.4	0.20	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
1,2,3,7,8,9-HxCDD	84		3.4	0.18	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
1,2,3,4,7,8-HxCDF	38		3.4	0.23	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
1,2,3,6,7,8-HxCDF	16		3.4	0.22	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
1,2,3,7,8,9-HxCDF	ND		3.4	0.23	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
2,3,4,6,7,8-HxCDF	9.2		3.4	0.22	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
1,2,3,4,6,7,8-HpCDD	2100	B G	190	190	pg/g	☼	12/12/12 13:29	01/11/13 01:46	20
1,2,3,4,6,7,8-HpCDF	180	B	3.4	0.73	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
1,2,3,4,7,8,9-HpCDF	9.8		3.4	0.93	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
OCDD	20000	B G	450	450	pg/g	☼	12/12/12 13:29	01/11/13 01:46	20
OCDF	250		6.9	0.25	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
Total TCDD	77	B q	0.69	0.10	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
Total TCDF	63	B q	0.69	0.14	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
Total PeCDD	160	q	3.4	0.18	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
Total PeCDF	130	q	3.4	0.26	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
Total HxCDD	810		3.4	0.19	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
Total HxCDF	440		3.4	0.22	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1
Total HpCDD	4300	B G	190	190	pg/g	☼	12/12/12 13:29	01/11/13 01:46	20
Total HpCDF	560	B	3.4	0.83	pg/g	☼	12/12/12 13:29	12/13/12 22:24	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	88		25 - 164	12/12/12 13:29	12/13/12 22:24	1
13C-2,3,7,8-TCDD	81		25 - 164	12/12/12 13:29	12/14/12 16:04	1
13C-2,3,7,8-TCDF	107		24 - 169	12/12/12 13:29	12/13/12 22:24	1
13C-2,3,7,8-TCDF	80		24 - 169	12/12/12 13:29	12/14/12 16:04	1
13C-1,2,3,7,8-PeCDD	87		25 - 181	12/12/12 13:29	12/13/12 22:24	1
13C-1,2,3,7,8-PeCDF	90		24 - 185	12/12/12 13:29	12/13/12 22:24	1
13C-2,3,4,7,8-PeCDF	89		21 - 178	12/12/12 13:29	12/13/12 22:24	1
13C-1,2,3,4,7,8-HxCDD	90		32 - 141	12/12/12 13:29	12/13/12 22:24	1
13C-1,2,3,6,7,8-HxCDD	89		28 - 130	12/12/12 13:29	12/13/12 22:24	1
13C-1,2,3,4,7,8-HxCDF	101		26 - 152	12/12/12 13:29	12/13/12 22:24	1
13C-1,2,3,6,7,8-HxCDF	101		26 - 123	12/12/12 13:29	12/13/12 22:24	1
13C-1,2,3,7,8,9-HxCDF	101		29 - 147	12/12/12 13:29	12/13/12 22:24	1
13C-2,3,4,6,7,8-HxCDF	101		28 - 136	12/12/12 13:29	12/13/12 22:24	1
13C-1,2,3,4,6,7,8-HpCDD	74		23 - 140	12/12/12 13:29	01/11/13 01:46	20
13C-1,2,3,4,6,7,8-HpCDD	82		23 - 140	12/12/12 13:29	12/13/12 22:24	1
13C-1,2,3,4,6,7,8-HpCDF	89		28 - 143	12/12/12 13:29	12/13/12 22:24	1
13C-1,2,3,4,7,8,9-HpCDF	97		26 - 138	12/12/12 13:29	12/13/12 22:24	1
13C-OCDD	73		17 - 157	12/12/12 13:29	01/11/13 01:46	20
13C-OCDD	106		17 - 157	12/12/12 13:29	12/13/12 22:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	111		35 - 197	12/12/12 13:29	12/13/12 22:24	1
37Cl4-2,3,7,8-TCDD	101		35 - 197	12/12/12 13:29	12/14/12 16:04	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-120-2

Lab Sample ID: 580-36242-27

Date Collected: 12/03/12 12:20

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 57.2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.46	J	0.70	0.047	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
2,3,7,8-TCDF	2.1	B	0.70	0.055	pg/g	*	12/12/12 13:29	12/14/12 16:41	1
1,2,3,7,8-PeCDD	1.7	J	3.5	0.16	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
1,2,3,7,8-PeCDF	3.9		3.5	0.14	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
2,3,4,7,8-PeCDF	3.0	J	3.5	0.16	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
1,2,3,4,7,8-HxCDD	7.2		3.5	0.13	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
1,2,3,6,7,8-HxCDD	46		3.5	0.13	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
1,2,3,7,8,9-HxCDD	17		3.5	0.11	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
1,2,3,4,7,8-HxCDF	12		3.5	0.12	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
1,2,3,6,7,8-HxCDF	8.6		3.5	0.12	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
1,2,3,7,8,9-HxCDF	ND		3.5	0.12	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
2,3,4,6,7,8-HxCDF	3.5		3.5	0.11	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
1,2,3,4,6,7,8-HpCDD	930	B	3.5	0.61	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
1,2,3,4,6,7,8-HpCDF	92	B	3.5	0.40	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
1,2,3,4,7,8,9-HpCDF	4.3		3.5	0.51	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
OCDD	9500	B G	410	410	pg/g	*	12/12/12 13:29	01/11/13 02:30	20
OCDF	120		7.0	0.15	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
Total TCDD	9.8	B q	0.70	0.047	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
Total TCDF	18	B q	0.70	0.089	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
Total PeCDD	23	q	3.5	0.16	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
Total PeCDF	45	q	3.5	0.15	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
Total HxCDD	260		3.5	0.12	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
Total HxCDF	210		3.5	0.12	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
Total HpCDD	1800	B	3.5	0.61	pg/g	*	12/12/12 13:29	12/13/12 23:09	1
Total HpCDF	300	B	3.5	0.45	pg/g	*	12/12/12 13:29	12/13/12 23:09	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	71		25 - 164	12/12/12 13:29	12/13/12 23:09	1
13C-2,3,7,8-TCDD	65		25 - 164	12/12/12 13:29	12/14/12 16:41	1
13C-2,3,7,8-TCDF	84		24 - 169	12/12/12 13:29	12/13/12 23:09	1
13C-2,3,7,8-TCDF	66		24 - 169	12/12/12 13:29	12/14/12 16:41	1
13C-1,2,3,7,8-PeCDD	64		25 - 181	12/12/12 13:29	12/13/12 23:09	1
13C-1,2,3,7,8-PeCDF	66		24 - 185	12/12/12 13:29	12/13/12 23:09	1
13C-2,3,4,7,8-PeCDF	69		21 - 178	12/12/12 13:29	12/13/12 23:09	1
13C-1,2,3,4,7,8-HxCDD	63		32 - 141	12/12/12 13:29	12/13/12 23:09	1
13C-1,2,3,6,7,8-HxCDD	62		28 - 130	12/12/12 13:29	12/13/12 23:09	1
13C-1,2,3,4,7,8-HxCDF	72		26 - 152	12/12/12 13:29	12/13/12 23:09	1
13C-1,2,3,6,7,8-HxCDF	70		26 - 123	12/12/12 13:29	12/13/12 23:09	1
13C-1,2,3,7,8,9-HxCDF	76		29 - 147	12/12/12 13:29	12/13/12 23:09	1
13C-2,3,4,6,7,8-HxCDF	73		28 - 136	12/12/12 13:29	12/13/12 23:09	1
13C-1,2,3,4,6,7,8-HpCDD	54		23 - 140	12/12/12 13:29	12/13/12 23:09	1
13C-1,2,3,4,6,7,8-HpCDF	58		28 - 143	12/12/12 13:29	12/13/12 23:09	1
13C-1,2,3,4,7,8,9-HpCDF	67		26 - 138	12/12/12 13:29	12/13/12 23:09	1
13C-OCDD	43		17 - 157	12/12/12 13:29	01/11/13 02:30	20
13C-OCDD	65		17 - 157	12/12/12 13:29	12/13/12 23:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	106		35 - 197	12/12/12 13:29	12/13/12 23:09	1
37Cl4-2,3,7,8-TCDD	95		35 - 197	12/12/12 13:29	12/14/12 16:41	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-122-2

Lab Sample ID: 580-36242-31

Date Collected: 12/03/12 15:22

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 64.6

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.62	0.081	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
2,3,7,8-TCDF	2.1	B	0.62	0.052	pg/g	☼	12/12/12 13:29	12/14/12 17:19	1
1,2,3,7,8-PeCDD	1.4	J	3.1	0.14	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
1,2,3,7,8-PeCDF	6.8		3.1	0.19	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
2,3,4,7,8-PeCDF	6.6		3.1	0.21	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
1,2,3,4,7,8-HxCDD	6.4		3.1	0.12	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
1,2,3,6,7,8-HxCDD	58		3.1	0.13	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
1,2,3,7,8,9-HxCDD	17		3.1	0.11	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
1,2,3,4,7,8-HxCDF	36		3.1	0.22	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
1,2,3,6,7,8-HxCDF	15		3.1	0.22	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
1,2,3,7,8,9-HxCDF	ND		3.1	0.22	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
2,3,4,6,7,8-HxCDF	6.9		3.1	0.20	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
1,2,3,4,6,7,8-HpCDD	1400	B G	150	150	pg/g	☼	12/12/12 13:29	01/11/13 03:15	20
1,2,3,4,6,7,8-HpCDF	190	B	3.1	0.59	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
1,2,3,4,7,8,9-HpCDF	9.9		3.1	0.69	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
OCDD	15000	B G	340	340	pg/g	☼	12/12/12 13:29	01/11/13 03:15	20
OCDF	180		6.2	0.16	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
Total TCDD	21	B	0.62	0.081	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
Total TCDF	36	B q	0.62	0.098	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
Total PeCDD	32	q	3.1	0.14	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
Total PeCDF	97	q	3.1	0.20	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
Total HxCDD	360		3.1	0.12	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
Total HxCDF	450		3.1	0.21	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1
Total HpCDD	2700	B G	150	150	pg/g	☼	12/12/12 13:29	01/11/13 03:15	20
Total HpCDF	580	B	3.1	0.64	pg/g	☼	12/12/12 13:29	12/13/12 23:54	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	90		25 - 164	12/12/12 13:29	12/13/12 23:54	1
13C-2,3,7,8-TCDD	82		25 - 164	12/12/12 13:29	12/14/12 17:19	1
13C-2,3,7,8-TCDF	109		24 - 169	12/12/12 13:29	12/13/12 23:54	1
13C-2,3,7,8-TCDF	83		24 - 169	12/12/12 13:29	12/14/12 17:19	1
13C-1,2,3,7,8-PeCDD	90		25 - 181	12/12/12 13:29	12/13/12 23:54	1
13C-1,2,3,7,8-PeCDF	87		24 - 185	12/12/12 13:29	12/13/12 23:54	1
13C-2,3,4,7,8-PeCDF	93		21 - 178	12/12/12 13:29	12/13/12 23:54	1
13C-1,2,3,4,7,8-HxCDD	88		32 - 141	12/12/12 13:29	12/13/12 23:54	1
13C-1,2,3,6,7,8-HxCDD	89		28 - 130	12/12/12 13:29	12/13/12 23:54	1
13C-1,2,3,4,7,8-HxCDF	101		26 - 152	12/12/12 13:29	12/13/12 23:54	1
13C-1,2,3,6,7,8-HxCDF	101		26 - 123	12/12/12 13:29	12/13/12 23:54	1
13C-1,2,3,7,8,9-HxCDF	102		29 - 147	12/12/12 13:29	12/13/12 23:54	1
13C-2,3,4,6,7,8-HxCDF	102		28 - 136	12/12/12 13:29	12/13/12 23:54	1
13C-1,2,3,4,6,7,8-HpCDD	72		23 - 140	12/12/12 13:29	01/11/13 03:15	20
13C-1,2,3,4,6,7,8-HpCDD	78		23 - 140	12/12/12 13:29	12/13/12 23:54	1
13C-1,2,3,4,6,7,8-HpCDF	88		28 - 143	12/12/12 13:29	12/13/12 23:54	1
13C-1,2,3,4,7,8,9-HpCDF	96		26 - 138	12/12/12 13:29	12/13/12 23:54	1
13C-OCDD	72		17 - 157	12/12/12 13:29	01/11/13 03:15	20
13C-OCDD	101		17 - 157	12/12/12 13:29	12/13/12 23:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	108		35 - 197	12/12/12 13:29	12/13/12 23:54	1
37Cl4-2,3,7,8-TCDD	96		35 - 197	12/12/12 13:29	12/14/12 17:19	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-124-2

Lab Sample ID: 580-36242-36

Date Collected: 12/03/12 09:50

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 65.4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	1.1		0.61	0.087	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
2,3,7,8-TCDF	12	B	0.61	0.070	pg/g	*	12/12/12 13:29	12/14/12 17:56	1
1,2,3,7,8-PeCDD	2.9	J	3.1	0.33	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
1,2,3,7,8-PeCDF	25		3.1	0.39	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
2,3,4,7,8-PeCDF	41		3.1	0.44	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
1,2,3,4,7,8-HxCDD	14		3.1	0.19	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
1,2,3,6,7,8-HxCDD	170		3.1	0.20	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
1,2,3,7,8,9-HxCDD	42		3.1	0.17	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
1,2,3,4,7,8-HxCDF	160		3.1	0.63	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
1,2,3,6,7,8-HxCDF	53		3.1	0.64	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
1,2,3,7,8,9-HxCDF	ND		3.1	0.59	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
2,3,4,6,7,8-HxCDF	23		3.1	0.57	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
1,2,3,4,6,7,8-HpCDD	3300	B G	120	120	pg/g	*	12/12/12 13:29	12/27/12 12:37	20
1,2,3,4,6,7,8-HpCDF	490	B	3.1	1.4	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
1,2,3,4,7,8,9-HpCDF	33		3.1	1.7	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
OCDD	33000	B G	280	280	pg/g	*	12/12/12 13:29	12/27/12 12:37	20
OCDF	320		6.1	0.25	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
Total TCDD	60	q B	0.61	0.087	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
Total TCDF	170	B	0.61	0.17	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
Total PeCDD	120	q	3.1	0.33	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
Total PeCDF	570		3.1	0.41	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
Total HxCDD	1000		3.1	0.19	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
Total HxCDF	1800		3.1	0.61	pg/g	*	12/12/12 13:29	12/14/12 00:38	1
Total HpCDD	6800	B G	120	120	pg/g	*	12/12/12 13:29	12/27/12 12:37	20
Total HpCDF	1500	B	3.1	1.5	pg/g	*	12/12/12 13:29	12/14/12 00:38	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	66		25 - 164	12/12/12 13:29	12/14/12 00:38	1
13C-2,3,7,8-TCDD	60		25 - 164	12/12/12 13:29	12/14/12 17:56	1
13C-2,3,7,8-TCDF	79		24 - 169	12/12/12 13:29	12/14/12 00:38	1
13C-2,3,7,8-TCDF	62		24 - 169	12/12/12 13:29	12/14/12 17:56	1
13C-1,2,3,7,8-PeCDD	63		25 - 181	12/12/12 13:29	12/14/12 00:38	1
13C-1,2,3,7,8-PeCDF	63		24 - 185	12/12/12 13:29	12/14/12 00:38	1
13C-2,3,4,7,8-PeCDF	66		21 - 178	12/12/12 13:29	12/14/12 00:38	1
13C-1,2,3,4,7,8-HxCDD	62		32 - 141	12/12/12 13:29	12/14/12 00:38	1
13C-1,2,3,6,7,8-HxCDD	59		28 - 130	12/12/12 13:29	12/14/12 00:38	1
13C-1,2,3,4,7,8-HxCDF	70		26 - 152	12/12/12 13:29	12/14/12 00:38	1
13C-1,2,3,6,7,8-HxCDF	67		26 - 123	12/12/12 13:29	12/14/12 00:38	1
13C-1,2,3,7,8,9-HxCDF	72		29 - 147	12/12/12 13:29	12/14/12 00:38	1
13C-2,3,4,6,7,8-HxCDF	67		28 - 136	12/12/12 13:29	12/14/12 00:38	1
13C-1,2,3,4,6,7,8-HpCDD	52		23 - 140	12/12/12 13:29	12/14/12 00:38	1
13C-1,2,3,4,6,7,8-HpCDD	72		23 - 140	12/12/12 13:29	12/27/12 12:37	20
13C-1,2,3,4,6,7,8-HpCDF	56		28 - 143	12/12/12 13:29	12/14/12 00:38	1
13C-1,2,3,4,7,8,9-HpCDF	63		26 - 138	12/12/12 13:29	12/14/12 00:38	1
13C-OCDD	66		17 - 157	12/12/12 13:29	12/14/12 00:38	1
13C-OCDD	60		17 - 157	12/12/12 13:29	12/27/12 12:37	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	100		35 - 197	12/12/12 13:29	12/14/12 00:38	1
37Cl4-2,3,7,8-TCDD	90		35 - 197	12/12/12 13:29	12/14/12 17:56	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-126-2

Lab Sample ID: 580-36242-43

Date Collected: 12/02/12 12:40

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 69.0

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.56	J	0.58	0.032	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
2,3,7,8-TCDF	1.1	B	0.58	0.048	pg/g	☼	12/12/12 13:29	12/14/12 18:34	1
1,2,3,7,8-PeCDD	0.63	J	2.9	0.084	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
1,2,3,7,8-PeCDF	1.1	J	2.9	0.080	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
2,3,4,7,8-PeCDF	1.2	J	2.9	0.092	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
1,2,3,4,7,8-HxCDD	4.4		2.9	0.077	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
1,2,3,6,7,8-HxCDD	14		2.9	0.088	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
1,2,3,7,8,9-HxCDD	12		2.9	0.074	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
1,2,3,4,7,8-HxCDF	8.7		2.9	0.060	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
1,2,3,6,7,8-HxCDF	3.3		2.9	0.059	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
1,2,3,7,8,9-HxCDF	ND		2.9	0.057	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
2,3,4,6,7,8-HxCDF	1.3	J q	2.9	0.055	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
1,2,3,4,6,7,8-HpCDD	420	B	2.9	0.33	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
1,2,3,4,6,7,8-HpCDF	31	B	2.9	0.18	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
1,2,3,4,7,8,9-HpCDF	2.4	J	2.9	0.20	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
OCDD	3400	B G	320	320	pg/g	☼	12/12/12 13:29	01/11/13 03:59	20
OCDF	42		5.8	0.080	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
Total TCDD	5.5	q B	0.58	0.032	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
Total TCDF	12	q B	0.58	0.055	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
Total PeCDD	17	q	2.9	0.084	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
Total PeCDF	18	q	2.9	0.086	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
Total HxCDD	130		2.9	0.080	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
Total HxCDF	74	q	2.9	0.058	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
Total HpCDD	940	B	2.9	0.33	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1
Total HpCDF	98	B	2.9	0.19	pg/g	☼	12/12/12 13:29	12/14/12 01:22	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	70		25 - 164	12/12/12 13:29	12/14/12 01:22	1
13C-2,3,7,8-TCDD	63		25 - 164	12/12/12 13:29	12/14/12 18:34	1
13C-2,3,7,8-TCDF	83		24 - 169	12/12/12 13:29	12/14/12 01:22	1
13C-2,3,7,8-TCDF	63		24 - 169	12/12/12 13:29	12/14/12 18:34	1
13C-1,2,3,7,8-PeCDD	67		25 - 181	12/12/12 13:29	12/14/12 01:22	1
13C-1,2,3,7,8-PeCDF	67		24 - 185	12/12/12 13:29	12/14/12 01:22	1
13C-2,3,4,7,8-PeCDF	70		21 - 178	12/12/12 13:29	12/14/12 01:22	1
13C-1,2,3,4,7,8-HxCDD	71		32 - 141	12/12/12 13:29	12/14/12 01:22	1
13C-1,2,3,6,7,8-HxCDD	59		28 - 130	12/12/12 13:29	12/14/12 01:22	1
13C-1,2,3,4,7,8-HxCDF	73		26 - 152	12/12/12 13:29	12/14/12 01:22	1
13C-1,2,3,6,7,8-HxCDF	74		26 - 123	12/12/12 13:29	12/14/12 01:22	1
13C-1,2,3,7,8,9-HxCDF	77		29 - 147	12/12/12 13:29	12/14/12 01:22	1
13C-2,3,4,6,7,8-HxCDF	74		28 - 136	12/12/12 13:29	12/14/12 01:22	1
13C-1,2,3,4,6,7,8-HpCDD	55		23 - 140	12/12/12 13:29	12/14/12 01:22	1
13C-1,2,3,4,6,7,8-HpCDF	60		28 - 143	12/12/12 13:29	12/14/12 01:22	1
13C-1,2,3,4,7,8,9-HpCDF	69		26 - 138	12/12/12 13:29	12/14/12 01:22	1
13C-OCDD	40		17 - 157	12/12/12 13:29	01/11/13 03:59	20
13C-OCDD	64		17 - 157	12/12/12 13:29	12/14/12 01:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	106		35 - 197	12/12/12 13:29	12/14/12 01:22	1
37Cl4-2,3,7,8-TCDD	92		35 - 197	12/12/12 13:29	12/14/12 18:34	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-126

Lab Sample ID: 580-36242-47

Date Collected: 12/04/12 08:56

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 61.6

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	2.0		0.65	0.081	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
2,3,7,8-TCDF	6.3	B	0.65	0.099	pg/g	☼	12/12/12 13:29	12/14/12 19:11	1
1,2,3,7,8-PeCDD	11		3.2	0.16	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
1,2,3,7,8-PeCDF	18		3.2	0.34	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
2,3,4,7,8-PeCDF	19		3.2	0.39	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
1,2,3,4,7,8-HxCDD	37		3.2	0.21	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
1,2,3,6,7,8-HxCDD	260		3.2	0.22	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
1,2,3,7,8,9-HxCDD	120		3.2	0.19	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
1,2,3,4,7,8-HxCDF	110		3.2	1.2	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
1,2,3,6,7,8-HxCDF	33		3.2	1.2	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
1,2,3,7,8,9-HxCDF	ND		3.2	1.2	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
2,3,4,6,7,8-HxCDF	19		3.2	1.2	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
1,2,3,4,6,7,8-HpCDD	4300	G B	180	180	pg/g	☼	12/12/12 13:29	12/27/12 13:20	20
1,2,3,4,6,7,8-HpCDF	620	B	3.2	1.6	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
1,2,3,4,7,8,9-HpCDF	28		3.2	1.7	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
OCDD	37000	G B	380	380	pg/g	☼	12/12/12 13:29	12/27/12 13:20	20
OCDF	580		6.5	0.28	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
Total TCDD	36	q B	0.65	0.081	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
Total TCDF	83	q B	0.65	0.17	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
Total PeCDD	120		3.2	0.16	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
Total PeCDF	260		3.2	0.36	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
Total HxCDD	1600		3.2	0.21	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
Total HxCDF	1600		3.2	1.2	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1
Total HpCDD	8900	G B	180	180	pg/g	☼	12/12/12 13:29	12/27/12 13:20	20
Total HpCDF	2100	B	3.2	1.6	pg/g	☼	12/12/12 13:29	12/14/12 02:07	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	80		25 - 164	12/12/12 13:29	12/14/12 02:07	1
13C-2,3,7,8-TCDD	69		25 - 164	12/12/12 13:29	12/14/12 19:11	1
13C-2,3,7,8-TCDF	96		24 - 169	12/12/12 13:29	12/14/12 02:07	1
13C-2,3,7,8-TCDF	73		24 - 169	12/12/12 13:29	12/14/12 19:11	1
13C-1,2,3,7,8-PeCDD	76		25 - 181	12/12/12 13:29	12/14/12 02:07	1
13C-1,2,3,7,8-PeCDF	76		24 - 185	12/12/12 13:29	12/14/12 02:07	1
13C-2,3,4,7,8-PeCDF	79		21 - 178	12/12/12 13:29	12/14/12 02:07	1
13C-1,2,3,4,7,8-HxCDD	74		32 - 141	12/12/12 13:29	12/14/12 02:07	1
13C-1,2,3,6,7,8-HxCDD	75		28 - 130	12/12/12 13:29	12/14/12 02:07	1
13C-1,2,3,4,7,8-HxCDF	85		26 - 152	12/12/12 13:29	12/14/12 02:07	1
13C-1,2,3,6,7,8-HxCDF	86		26 - 123	12/12/12 13:29	12/14/12 02:07	1
13C-1,2,3,7,8,9-HxCDF	90		29 - 147	12/12/12 13:29	12/14/12 02:07	1
13C-2,3,4,6,7,8-HxCDF	85		28 - 136	12/12/12 13:29	12/14/12 02:07	1
13C-1,2,3,4,6,7,8-HpCDD	68		23 - 140	12/12/12 13:29	12/14/12 02:07	1
13C-1,2,3,4,6,7,8-HpCDD	85		23 - 140	12/12/12 13:29	12/27/12 13:20	20
13C-1,2,3,4,6,7,8-HpCDF	69		28 - 143	12/12/12 13:29	12/14/12 02:07	1
13C-1,2,3,4,7,8,9-HpCDF	82		26 - 138	12/12/12 13:29	12/14/12 02:07	1
13C-OCDD	83		17 - 157	12/12/12 13:29	12/14/12 02:07	1
13C-OCDD	68		17 - 157	12/12/12 13:29	12/27/12 13:20	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	101		35 - 197	12/12/12 13:29	12/14/12 02:07	1
37Cl4-2,3,7,8-TCDD	89		35 - 197	12/12/12 13:29	12/14/12 19:11	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-129-2

Lab Sample ID: 580-36242-48

Date Collected: 12/02/12 13:50

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 64.8

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.62	0.29	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
2,3,7,8-TCDF	0.66	B	0.62	0.059	pg/g	☼	12/12/12 13:29	12/14/12 19:49	1
1,2,3,7,8-PeCDD	0.25	J q	3.1	0.082	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
1,2,3,7,8-PeCDF	0.25	J q	3.1	0.071	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
2,3,4,7,8-PeCDF	0.30	J	3.1	0.076	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
1,2,3,4,7,8-HxCDD	0.61	J q	3.1	0.062	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
1,2,3,6,7,8-HxCDD	2.9	J	3.1	0.062	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
1,2,3,7,8,9-HxCDD	1.2	J q	3.1	0.056	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
1,2,3,4,7,8-HxCDF	1.2	J	3.1	0.062	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
1,2,3,6,7,8-HxCDF	0.99	J	3.1	0.058	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
1,2,3,7,8,9-HxCDF	ND		3.1	0.063	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
2,3,4,6,7,8-HxCDF	1.4	J	3.1	0.055	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
1,2,3,4,6,7,8-HpCDD	57	B	3.1	0.18	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
1,2,3,4,6,7,8-HpCDF	8.2	B	3.1	0.12	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
1,2,3,4,7,8,9-HpCDF	0.47	J q	3.1	0.16	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
OCDD	510	B	6.2	0.39	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
OCDF	22		6.2	0.073	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
Total TCDD	0.57	J q B	0.62	0.29	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
Total TCDF	3.4	q B	0.62	0.047	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
Total PeCDD	1.4	J q	3.1	0.082	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
Total PeCDF	3.8	q	3.1	0.074	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
Total HxCDD	17	q	3.1	0.060	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
Total HxCDF	17		3.1	0.059	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
Total HpCDD	110	B	3.1	0.18	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
Total HpCDF	28	q B	3.1	0.14	pg/g	☼	12/12/12 13:29	12/14/12 02:51	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	72		25 - 164				12/12/12 13:29	12/14/12 02:51	1
13C-2,3,7,8-TCDD	64		25 - 164				12/12/12 13:29	12/14/12 19:49	1
13C-2,3,7,8-TCDF	86		24 - 169				12/12/12 13:29	12/14/12 02:51	1
13C-2,3,7,8-TCDF	64		24 - 169				12/12/12 13:29	12/14/12 19:49	1
13C-1,2,3,7,8-PeCDD	71		25 - 181				12/12/12 13:29	12/14/12 02:51	1
13C-1,2,3,7,8-PeCDF	69		24 - 185				12/12/12 13:29	12/14/12 02:51	1
13C-2,3,4,7,8-PeCDF	73		21 - 178				12/12/12 13:29	12/14/12 02:51	1
13C-1,2,3,4,7,8-HxCDD	73		32 - 141				12/12/12 13:29	12/14/12 02:51	1
13C-1,2,3,6,7,8-HxCDD	67		28 - 130				12/12/12 13:29	12/14/12 02:51	1
13C-1,2,3,4,7,8-HxCDF	77		26 - 152				12/12/12 13:29	12/14/12 02:51	1
13C-1,2,3,6,7,8-HxCDF	82		26 - 123				12/12/12 13:29	12/14/12 02:51	1
13C-1,2,3,7,8,9-HxCDF	81		29 - 147				12/12/12 13:29	12/14/12 02:51	1
13C-2,3,4,6,7,8-HxCDF	81		28 - 136				12/12/12 13:29	12/14/12 02:51	1
13C-1,2,3,4,6,7,8-HpCDD	63		23 - 140				12/12/12 13:29	12/14/12 02:51	1
13C-1,2,3,4,6,7,8-HpCDF	71		28 - 143				12/12/12 13:29	12/14/12 02:51	1
13C-1,2,3,4,7,8,9-HpCDF	76		26 - 138				12/12/12 13:29	12/14/12 02:51	1
13C-OCDD	73		17 - 157				12/12/12 13:29	12/14/12 02:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	102		35 - 197				12/12/12 13:29	12/14/12 02:51	1
37Cl4-2,3,7,8-TCDD	91		35 - 197				12/12/12 13:29	12/14/12 19:49	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-129

Lab Sample ID: 580-36242-52

Date Collected: 12/04/12 10:10

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 52.9

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.31	J q	0.75	0.051	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
2,3,7,8-TCDF	0.65	J B	0.75	0.044	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
1,2,3,7,8-PeCDD	0.27	J	3.8	0.098	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
1,2,3,7,8-PeCDF	0.31	J	3.8	0.097	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
2,3,4,7,8-PeCDF	0.66	J	3.8	0.11	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
1,2,3,4,7,8-HxCDD	0.52	J q	3.8	0.050	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
1,2,3,6,7,8-HxCDD	3.2	J	3.8	0.051	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
1,2,3,7,8,9-HxCDD	1.1	J q	3.8	0.046	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
1,2,3,4,7,8-HxCDF	1.5	J	3.8	0.058	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
1,2,3,6,7,8-HxCDF	0.67	J	3.8	0.056	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
1,2,3,7,8,9-HxCDF	ND		3.8	0.066	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
2,3,4,6,7,8-HxCDF	0.63	J q	3.8	0.056	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
1,2,3,4,6,7,8-HpCDD	60	B	3.8	0.27	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
1,2,3,4,6,7,8-HpCDF	8.8	B	3.8	0.12	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
1,2,3,4,7,8,9-HpCDF	ND		3.8	0.15	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
OCDD	540	B	7.5	0.61	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
OCDF	19		7.5	0.13	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
Total TCDD	0.80	B q	0.75	0.051	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
Total TCDF	3.2	B q	0.75	0.044	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
Total PeCDD	1.1	J q	3.8	0.098	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
Total PeCDF	4.8	q	3.8	0.10	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
Total HxCDD	15	q	3.8	0.049	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
Total HxCDF	20	q	3.8	0.059	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
Total HpCDD	110	B	3.8	0.27	pg/g	*	12/12/12 13:29	12/15/12 13:56	1
Total HpCDF	29	B	3.8	0.14	pg/g	*	12/12/12 13:29	12/15/12 13:56	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	81		25 - 164	12/12/12 13:29	12/15/12 13:56	1
13C-2,3,7,8-TCDF	98		24 - 169	12/12/12 13:29	12/15/12 13:56	1
13C-1,2,3,7,8-PeCDD	75		25 - 181	12/12/12 13:29	12/15/12 13:56	1
13C-1,2,3,7,8-PeCDF	79		24 - 185	12/12/12 13:29	12/15/12 13:56	1
13C-2,3,4,7,8-PeCDF	81		21 - 178	12/12/12 13:29	12/15/12 13:56	1
13C-1,2,3,4,7,8-HxCDD	70		32 - 141	12/12/12 13:29	12/15/12 13:56	1
13C-1,2,3,6,7,8-HxCDD	74		28 - 130	12/12/12 13:29	12/15/12 13:56	1
13C-1,2,3,4,7,8-HxCDF	79		26 - 152	12/12/12 13:29	12/15/12 13:56	1
13C-1,2,3,6,7,8-HxCDF	83		26 - 123	12/12/12 13:29	12/15/12 13:56	1
13C-1,2,3,7,8,9-HxCDF	85		29 - 147	12/12/12 13:29	12/15/12 13:56	1
13C-2,3,4,6,7,8-HxCDF	82		28 - 136	12/12/12 13:29	12/15/12 13:56	1
13C-1,2,3,4,6,7,8-HpCDD	62		23 - 140	12/12/12 13:29	12/15/12 13:56	1
13C-1,2,3,4,6,7,8-HpCDF	71		28 - 143	12/12/12 13:29	12/15/12 13:56	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	12/12/12 13:29	12/15/12 13:56	1
13C-OCDD	72		17 - 157	12/12/12 13:29	12/15/12 13:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	118		35 - 197	12/12/12 13:29	12/15/12 13:56	1

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-130-2

Lab Sample ID: 580-36242-53

Date Collected: 12/02/12 14:40

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 73.9

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.16	J q	0.54	0.037	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
2,3,7,8-TCDF	0.32	J B q	0.54	0.027	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
1,2,3,7,8-PeCDD	ND		2.7	0.056	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
1,2,3,7,8-PeCDF	ND		2.7	0.044	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
2,3,4,7,8-PeCDF	0.098	J	2.7	0.048	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
1,2,3,4,7,8-HxCDD	0.30	J q	2.7	0.030	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
1,2,3,6,7,8-HxCDD	1.4	J	2.7	0.029	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
1,2,3,7,8,9-HxCDD	0.61	J	2.7	0.027	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
1,2,3,4,7,8-HxCDF	0.28	J q	2.7	0.025	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
1,2,3,6,7,8-HxCDF	0.19	J	2.7	0.024	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
1,2,3,7,8,9-HxCDF	ND		2.7	0.026	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
2,3,4,6,7,8-HxCDF	0.30	J	2.7	0.024	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
1,2,3,4,6,7,8-HpCDD	27	B	2.7	0.15	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
1,2,3,4,6,7,8-HpCDF	3.2	B	2.7	0.041	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
1,2,3,4,7,8,9-HpCDF	ND		2.7	0.053	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
OCDD	270	B	5.4	0.31	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
OCDF	6.8		5.4	0.064	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
Total TCDD	0.39	J B q	0.54	0.037	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
Total TCDF	0.66	B q	0.54	0.027	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
Total PeCDD	0.40	J q	2.7	0.056	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
Total PeCDF	1.1	J q	2.7	0.046	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
Total HxCDD	7.4	q	2.7	0.029	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
Total HxCDF	6.1	q	2.7	0.025	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
Total HpCDD	49	B	2.7	0.15	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1
Total HpCDF	9.6	B	2.7	0.047	pg/g	☼	12/12/12 13:29	12/15/12 14:40	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	87		25 - 164	12/12/12 13:29	12/15/12 14:40	1
13C-2,3,7,8-TCDF	102		24 - 169	12/12/12 13:29	12/15/12 14:40	1
13C-1,2,3,7,8-PeCDD	80		25 - 181	12/12/12 13:29	12/15/12 14:40	1
13C-1,2,3,7,8-PeCDF	84		24 - 185	12/12/12 13:29	12/15/12 14:40	1
13C-2,3,4,7,8-PeCDF	87		21 - 178	12/12/12 13:29	12/15/12 14:40	1
13C-1,2,3,4,7,8-HxCDD	73		32 - 141	12/12/12 13:29	12/15/12 14:40	1
13C-1,2,3,6,7,8-HxCDD	80		28 - 130	12/12/12 13:29	12/15/12 14:40	1
13C-1,2,3,4,7,8-HxCDF	87		26 - 152	12/12/12 13:29	12/15/12 14:40	1
13C-1,2,3,6,7,8-HxCDF	91		26 - 123	12/12/12 13:29	12/15/12 14:40	1
13C-1,2,3,7,8,9-HxCDF	92		29 - 147	12/12/12 13:29	12/15/12 14:40	1
13C-2,3,4,6,7,8-HxCDF	89		28 - 136	12/12/12 13:29	12/15/12 14:40	1
13C-1,2,3,4,6,7,8-HpCDD	66		23 - 140	12/12/12 13:29	12/15/12 14:40	1
13C-1,2,3,4,6,7,8-HpCDF	76		28 - 143	12/12/12 13:29	12/15/12 14:40	1
13C-1,2,3,4,7,8,9-HpCDF	87		26 - 138	12/12/12 13:29	12/15/12 14:40	1
13C-OCDD	72		17 - 157	12/12/12 13:29	12/15/12 14:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	108		35 - 197	12/12/12 13:29	12/15/12 14:40	1

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-130-FD

Lab Sample ID: 580-36242-54

Date Collected: 12/02/12 14:40

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 73.2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.55	0.16	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
2,3,7,8-TCDF	ND		0.55	0.12	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
1,2,3,7,8-PeCDD	ND		2.7	0.19	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
1,2,3,7,8-PeCDF	ND		2.7	0.18	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
2,3,4,7,8-PeCDF	ND		2.7	0.20	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
1,2,3,4,7,8-HxCDD	0.54	J	2.7	0.095	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
1,2,3,6,7,8-HxCDD	3.6		2.7	0.094	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
1,2,3,7,8,9-HxCDD	0.96	J	2.7	0.085	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
1,2,3,4,7,8-HxCDF	0.57	J q	2.7	0.083	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
1,2,3,6,7,8-HxCDF	0.35	J	2.7	0.079	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
1,2,3,7,8,9-HxCDF	ND		2.7	0.091	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
2,3,4,6,7,8-HxCDF	0.72	J	2.7	0.078	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
1,2,3,4,6,7,8-HpCDD	72	B	2.7	0.36	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
1,2,3,4,6,7,8-HpCDF	7.1	B	2.7	0.15	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
1,2,3,4,7,8,9-HpCDF	ND		2.7	0.19	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
OCDD	660	B	5.5	0.85	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
OCDF	14		5.5	0.21	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
Total TCDD	ND		0.55	0.16	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
Total TCDF	ND		0.55	0.12	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
Total PeCDD	ND		2.7	0.19	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
Total PeCDF	1.1	J	2.7	0.19	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
Total HxCDD	15		2.7	0.091	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
Total HxCDF	15	q	2.7	0.083	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
Total HpCDD	140	B	2.7	0.36	pg/g	*	12/12/12 13:29	12/15/12 15:25	1
Total HpCDF	24	B	2.7	0.17	pg/g	*	12/12/12 13:29	12/15/12 15:25	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	94		25 - 164	12/12/12 13:29	12/15/12 15:25	1
13C-2,3,7,8-TCDF	109		24 - 169	12/12/12 13:29	12/15/12 15:25	1
13C-1,2,3,7,8-PeCDD	88		25 - 181	12/12/12 13:29	12/15/12 15:25	1
13C-1,2,3,7,8-PeCDF	93		24 - 185	12/12/12 13:29	12/15/12 15:25	1
13C-2,3,4,7,8-PeCDF	90		21 - 178	12/12/12 13:29	12/15/12 15:25	1
13C-1,2,3,4,7,8-HxCDD	84		32 - 141	12/12/12 13:29	12/15/12 15:25	1
13C-1,2,3,6,7,8-HxCDD	93		28 - 130	12/12/12 13:29	12/15/12 15:25	1
13C-1,2,3,4,7,8-HxCDF	102		26 - 152	12/12/12 13:29	12/15/12 15:25	1
13C-1,2,3,6,7,8-HxCDF	105		26 - 123	12/12/12 13:29	12/15/12 15:25	1
13C-1,2,3,7,8,9-HxCDF	104		29 - 147	12/12/12 13:29	12/15/12 15:25	1
13C-2,3,4,6,7,8-HxCDF	105		28 - 136	12/12/12 13:29	12/15/12 15:25	1
13C-1,2,3,4,6,7,8-HpCDD	77		23 - 140	12/12/12 13:29	12/15/12 15:25	1
13C-1,2,3,4,6,7,8-HpCDF	92		28 - 143	12/12/12 13:29	12/15/12 15:25	1
13C-1,2,3,4,7,8,9-HpCDF	105		26 - 138	12/12/12 13:29	12/15/12 15:25	1
13C-OCDD	95		17 - 157	12/12/12 13:29	12/15/12 15:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	113		35 - 197	12/12/12 13:29	12/15/12 15:25	1

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-130

Lab Sample ID: 580-36242-58

Date Collected: 12/04/12 10:24

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 61.9

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.65	0.044	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
2,3,7,8-TCDF	0.24	J B q	0.65	0.045	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
1,2,3,7,8-PeCDD	ND		3.2	0.074	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
1,2,3,7,8-PeCDF	ND		3.2	0.11	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
2,3,4,7,8-PeCDF	ND		3.2	0.073	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
1,2,3,4,7,8-HxCDD	0.19	J	3.2	0.039	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
1,2,3,6,7,8-HxCDD	1.2	J q	3.2	0.042	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
1,2,3,7,8,9-HxCDD	0.54	J	3.2	0.037	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
1,2,3,4,7,8-HxCDF	0.68	J	3.2	0.036	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
1,2,3,6,7,8-HxCDF	0.27	J	3.2	0.034	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
1,2,3,7,8,9-HxCDF	ND		3.2	0.035	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
2,3,4,6,7,8-HxCDF	0.24	J	3.2	0.032	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
1,2,3,4,6,7,8-HpCDD	25	B	3.2	0.19	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
1,2,3,4,6,7,8-HpCDF	2.9	J B q	3.2	0.073	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
1,2,3,4,7,8,9-HpCDF	ND		3.2	0.083	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
OCDD	250	B	6.5	0.42	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
OCDF	13		6.5	0.12	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
Total TCDD	0.38	J B q	0.65	0.044	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
Total TCDF	0.83	B q	0.65	0.045	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
Total PeCDD	ND		3.2	0.074	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
Total PeCDF	0.76	J	3.2	0.091	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
Total HxCDD	6.5	q	3.2	0.039	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
Total HxCDF	6.3		3.2	0.034	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
Total HpCDD	47	B	3.2	0.19	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
Total HpCDF	12	B q	3.2	0.078	pg/g	*	12/12/12 13:29	12/15/12 16:09	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	92		25 - 164				12/12/12 13:29	12/15/12 16:09	1
13C-2,3,7,8-TCDF	109		24 - 169				12/12/12 13:29	12/15/12 16:09	1
13C-1,2,3,7,8-PeCDD	80		25 - 181				12/12/12 13:29	12/15/12 16:09	1
13C-1,2,3,7,8-PeCDF	89		24 - 185				12/12/12 13:29	12/15/12 16:09	1
13C-2,3,4,7,8-PeCDF	93		21 - 178				12/12/12 13:29	12/15/12 16:09	1
13C-1,2,3,4,7,8-HxCDD	79		32 - 141				12/12/12 13:29	12/15/12 16:09	1
13C-1,2,3,6,7,8-HxCDD	76		28 - 130				12/12/12 13:29	12/15/12 16:09	1
13C-1,2,3,4,7,8-HxCDF	89		26 - 152				12/12/12 13:29	12/15/12 16:09	1
13C-1,2,3,6,7,8-HxCDF	90		26 - 123				12/12/12 13:29	12/15/12 16:09	1
13C-1,2,3,7,8,9-HxCDF	97		29 - 147				12/12/12 13:29	12/15/12 16:09	1
13C-2,3,4,6,7,8-HxCDF	90		28 - 136				12/12/12 13:29	12/15/12 16:09	1
13C-1,2,3,4,6,7,8-HpCDD	64		23 - 140				12/12/12 13:29	12/15/12 16:09	1
13C-1,2,3,4,6,7,8-HpCDF	72		28 - 143				12/12/12 13:29	12/15/12 16:09	1
13C-1,2,3,4,7,8,9-HpCDF	90		26 - 138				12/12/12 13:29	12/15/12 16:09	1
13C-OCDD	68		17 - 157				12/12/12 13:29	12/15/12 16:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	109		35 - 197				12/12/12 13:29	12/15/12 16:09	1

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-130-FD-1

Lab Sample ID: 580-36242-59

Date Collected: 12/04/12 10:24

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 60.0

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.67	0.029	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
2,3,7,8-TCDF	0.30	J B	0.67	0.017	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
1,2,3,7,8-PeCDD	ND		3.3	0.051	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
1,2,3,7,8-PeCDF	0.15	J	3.3	0.038	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
2,3,4,7,8-PeCDF	0.15	J	3.3	0.044	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
1,2,3,4,7,8-HxCDD	0.23	J q	3.3	0.019	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
1,2,3,6,7,8-HxCDD	1.0	J	3.3	0.021	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
1,2,3,7,8,9-HxCDD	0.42	J q	3.3	0.018	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
1,2,3,4,7,8-HxCDF	0.47	J	3.3	0.023	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
1,2,3,6,7,8-HxCDF	0.22	J	3.3	0.021	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
1,2,3,7,8,9-HxCDF	ND		3.3	0.025	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
2,3,4,6,7,8-HxCDF	0.25	J	3.3	0.022	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
1,2,3,4,6,7,8-HpCDD	19	B	3.3	0.098	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
1,2,3,4,6,7,8-HpCDF	2.9	J B	3.3	0.045	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
1,2,3,4,7,8,9-HpCDF	ND		3.3	0.056	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
OCDD	170	B	6.7	0.24	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
OCDF	7.2		6.7	0.063	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
Total TCDD	0.12	J q B	0.67	0.029	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
Total TCDF	0.99	q B	0.67	0.017	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
Total PeCDD	0.17	J	3.3	0.051	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
Total PeCDF	1.0	J q	3.3	0.041	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
Total HxCDD	6.0	q	3.3	0.020	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
Total HxCDF	5.1		3.3	0.023	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
Total HpCDD	41	B	3.3	0.098	pg/g	*	12/12/12 13:29	12/15/12 16:54	1
Total HpCDF	9.1	B	3.3	0.051	pg/g	*	12/12/12 13:29	12/15/12 16:54	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	88		25 - 164	12/12/12 13:29	12/15/12 16:54	1
13C-2,3,7,8-TCDF	105		24 - 169	12/12/12 13:29	12/15/12 16:54	1
13C-1,2,3,7,8-PeCDD	84		25 - 181	12/12/12 13:29	12/15/12 16:54	1
13C-1,2,3,7,8-PeCDF	90		24 - 185	12/12/12 13:29	12/15/12 16:54	1
13C-2,3,4,7,8-PeCDF	92		21 - 178	12/12/12 13:29	12/15/12 16:54	1
13C-1,2,3,4,7,8-HxCDD	80		32 - 141	12/12/12 13:29	12/15/12 16:54	1
13C-1,2,3,6,7,8-HxCDD	85		28 - 130	12/12/12 13:29	12/15/12 16:54	1
13C-1,2,3,4,7,8-HxCDF	92		26 - 152	12/12/12 13:29	12/15/12 16:54	1
13C-1,2,3,6,7,8-HxCDF	96		26 - 123	12/12/12 13:29	12/15/12 16:54	1
13C-1,2,3,7,8,9-HxCDF	97		29 - 147	12/12/12 13:29	12/15/12 16:54	1
13C-2,3,4,6,7,8-HxCDF	97		28 - 136	12/12/12 13:29	12/15/12 16:54	1
13C-1,2,3,4,6,7,8-HpCDD	69		23 - 140	12/12/12 13:29	12/15/12 16:54	1
13C-1,2,3,4,6,7,8-HpCDF	82		28 - 143	12/12/12 13:29	12/15/12 16:54	1
13C-1,2,3,4,7,8,9-HpCDF	91		26 - 138	12/12/12 13:29	12/15/12 16:54	1
13C-OCDD	75		17 - 157	12/12/12 13:29	12/15/12 16:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	115		35 - 197	12/12/12 13:29	12/15/12 16:54	1

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-131-2

Lab Sample ID: 580-36242-60

Date Collected: 12/02/12 16:30

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 58.4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.26	J	0.68	0.068	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
2,3,7,8-TCDF	0.61	J B	0.68	0.031	pg/g	☼	12/12/12 13:29	12/15/12 02:04	1
1,2,3,7,8-PeCDD	0.22	J q	3.4	0.076	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
1,2,3,7,8-PeCDF	ND		3.4	0.089	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
2,3,4,7,8-PeCDF	0.27	J q	3.4	0.10	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
1,2,3,4,7,8-HxCDD	0.50	J	3.4	0.039	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
1,2,3,6,7,8-HxCDD	2.4	J	3.4	0.039	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
1,2,3,7,8,9-HxCDD	1.1	J q	3.4	0.035	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
1,2,3,4,7,8-HxCDF	1.1	J	3.4	0.041	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
1,2,3,6,7,8-HxCDF	0.63	J q	3.4	0.035	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
1,2,3,7,8,9-HxCDF	ND		3.4	0.038	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
2,3,4,6,7,8-HxCDF	0.58	J q	3.4	0.037	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
1,2,3,4,6,7,8-HpCDD	52	B	3.4	0.23	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
1,2,3,4,6,7,8-HpCDF	5.2	B	3.4	0.072	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
1,2,3,4,7,8,9-HpCDF	ND		3.4	0.086	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
OCDD	440	B	6.8	0.50	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
OCDF	9.8		6.8	0.092	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
Total TCDD	0.73	B q	0.68	0.068	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
Total TCDF	5.0	B q	0.68	0.074	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
Total PeCDD	1.3	J q	3.4	0.076	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
Total PeCDF	4.0	q	3.4	0.097	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
Total HxCDD	15	q	3.4	0.038	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
Total HxCDF	12	q	3.4	0.038	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
Total HpCDD	100	B	3.4	0.23	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1
Total HpCDF	16	B	3.4	0.079	pg/g	☼	12/12/12 13:29	12/15/12 17:38	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	75		25 - 164	12/12/12 13:29	12/15/12 02:04	1
13C-2,3,7,8-TCDD	84		25 - 164	12/12/12 13:29	12/15/12 17:38	1
13C-2,3,7,8-TCDF	77		24 - 169	12/12/12 13:29	12/15/12 02:04	1
13C-2,3,7,8-TCDF	99		24 - 169	12/12/12 13:29	12/15/12 17:38	1
13C-1,2,3,7,8-PeCDD	81		25 - 181	12/12/12 13:29	12/15/12 17:38	1
13C-1,2,3,7,8-PeCDF	84		24 - 185	12/12/12 13:29	12/15/12 17:38	1
13C-2,3,4,7,8-PeCDF	84		21 - 178	12/12/12 13:29	12/15/12 17:38	1
13C-1,2,3,4,7,8-HxCDD	81		32 - 141	12/12/12 13:29	12/15/12 17:38	1
13C-1,2,3,6,7,8-HxCDD	83		28 - 130	12/12/12 13:29	12/15/12 17:38	1
13C-1,2,3,4,7,8-HxCDF	93		26 - 152	12/12/12 13:29	12/15/12 17:38	1
13C-1,2,3,6,7,8-HxCDF	98		26 - 123	12/12/12 13:29	12/15/12 17:38	1
13C-1,2,3,7,8,9-HxCDF	102		29 - 147	12/12/12 13:29	12/15/12 17:38	1
13C-2,3,4,6,7,8-HxCDF	97		28 - 136	12/12/12 13:29	12/15/12 17:38	1
13C-1,2,3,4,6,7,8-HpCDD	75		23 - 140	12/12/12 13:29	12/15/12 17:38	1
13C-1,2,3,4,6,7,8-HpCDF	89		28 - 143	12/12/12 13:29	12/15/12 17:38	1
13C-1,2,3,4,7,8,9-HpCDF	97		26 - 138	12/12/12 13:29	12/15/12 17:38	1
13C-OCDD	87		17 - 157	12/12/12 13:29	12/15/12 17:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	98		35 - 197	12/12/12 13:29	12/15/12 02:04	1
37Cl4-2,3,7,8-TCDD	107		35 - 197	12/12/12 13:29	12/15/12 17:38	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-131

Lab Sample ID: 580-36242-63

Date Collected: 12/04/12 11:15

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 61.6

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.65	0.062	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
2,3,7,8-TCDF	ND		0.65	0.059	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
1,2,3,7,8-PeCDD	ND		3.2	0.099	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
1,2,3,7,8-PeCDF	ND		3.2	0.089	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
2,3,4,7,8-PeCDF	ND		3.2	0.11	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
1,2,3,4,7,8-HxCDD	0.18	J	3.2	0.050	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
1,2,3,6,7,8-HxCDD	1.0	J q	3.2	0.050	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
1,2,3,7,8,9-HxCDD	0.55	J	3.2	0.045	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
1,2,3,4,7,8-HxCDF	0.50	J	3.2	0.044	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
1,2,3,6,7,8-HxCDF	0.21	J	3.2	0.041	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
1,2,3,7,8,9-HxCDF	ND		3.2	0.050	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
2,3,4,6,7,8-HxCDF	ND		3.2	0.043	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
1,2,3,4,6,7,8-HpCDD	22	B	3.2	0.29	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
1,2,3,4,6,7,8-HpCDF	3.4	B	3.2	0.092	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
1,2,3,4,7,8,9-HpCDF	ND		3.2	0.12	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
OCDD	200	B	6.5	0.41	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
OCDF	7.4		6.5	0.16	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
Total TCDD	0.50	J B	0.65	0.062	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
Total TCDF	ND		0.65	0.059	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
Total PeCDD	ND		3.2	0.099	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
Total PeCDF	0.93	J	3.2	0.10	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
Total HxCDD	5.5	q	3.2	0.049	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
Total HxCDF	5.8	q	3.2	0.045	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
Total HpCDD	43	B	3.2	0.29	pg/g	*	12/12/12 13:29	12/17/12 23:06	1
Total HpCDF	11	B	3.2	0.11	pg/g	*	12/12/12 13:29	12/17/12 23:06	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	81		25 - 164	12/12/12 13:29	12/17/12 23:06	1
13C-2,3,7,8-TCDF	99		24 - 169	12/12/12 13:29	12/17/12 23:06	1
13C-1,2,3,7,8-PeCDD	71		25 - 181	12/12/12 13:29	12/17/12 23:06	1
13C-1,2,3,7,8-PeCDF	78		24 - 185	12/12/12 13:29	12/17/12 23:06	1
13C-2,3,4,7,8-PeCDF	76		21 - 178	12/12/12 13:29	12/17/12 23:06	1
13C-1,2,3,4,7,8-HxCDD	69		32 - 141	12/12/12 13:29	12/17/12 23:06	1
13C-1,2,3,6,7,8-HxCDD	66		28 - 130	12/12/12 13:29	12/17/12 23:06	1
13C-1,2,3,4,7,8-HxCDF	70		26 - 152	12/12/12 13:29	12/17/12 23:06	1
13C-1,2,3,6,7,8-HxCDF	79		26 - 123	12/12/12 13:29	12/17/12 23:06	1
13C-1,2,3,7,8,9-HxCDF	73		29 - 147	12/12/12 13:29	12/17/12 23:06	1
13C-2,3,4,6,7,8-HxCDF	72		28 - 136	12/12/12 13:29	12/17/12 23:06	1
13C-1,2,3,4,6,7,8-HpCDD	52		23 - 140	12/12/12 13:29	12/17/12 23:06	1
13C-1,2,3,4,6,7,8-HpCDF	61		28 - 143	12/12/12 13:29	12/17/12 23:06	1
13C-1,2,3,4,7,8,9-HpCDF	66		26 - 138	12/12/12 13:29	12/17/12 23:06	1
13C-OCDD	51		17 - 157	12/12/12 13:29	12/17/12 23:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	114		35 - 197	12/12/12 13:29	12/17/12 23:06	1

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-132-2

Lab Sample ID: 580-36242-64

Date Collected: 12/03/12 14:00

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 70.2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	1.2		0.57	0.17	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
2,3,7,8-TCDF	0.48	J B	0.57	0.029	pg/g	☼	12/12/12 13:29	12/15/12 03:19	1
1,2,3,7,8-PeCDD	ND		2.8	0.27	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
1,2,3,7,8-PeCDF	ND		2.8	0.20	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
2,3,4,7,8-PeCDF	ND		2.8	0.25	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
1,2,3,4,7,8-HxCDD	0.64	J	2.8	0.12	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
1,2,3,6,7,8-HxCDD	1.4	J	2.8	0.12	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
1,2,3,7,8,9-HxCDD	2.1	J q	2.8	0.11	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
1,2,3,4,7,8-HxCDF	0.30	J q	2.8	0.10	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
1,2,3,6,7,8-HxCDF	0.33	J q	2.8	0.089	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
1,2,3,7,8,9-HxCDF	ND		2.8	0.11	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
2,3,4,6,7,8-HxCDF	ND		2.8	0.093	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
1,2,3,4,6,7,8-HpCDD	31	B q	2.8	0.35	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
1,2,3,4,6,7,8-HpCDF	6.8	B	2.8	0.16	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
1,2,3,4,7,8,9-HpCDF	ND		2.8	0.22	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
OCDD	240	B	5.7	0.67	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
OCDF	11		5.7	0.26	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
Total TCDD	1.2	B	0.57	0.17	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
Total TCDF	1.7	B q	0.57	0.19	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
Total PeCDD	ND		2.8	0.27	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
Total PeCDF	ND		2.8	0.25	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
Total HxCDD	18	q	2.8	0.12	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
Total HxCDF	4.7	q	2.8	0.099	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
Total HpCDD	74	B q	2.8	0.35	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1
Total HpCDF	17	B	2.8	0.19	pg/g	☼	12/12/12 13:29	12/17/12 23:51	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	89		25 - 164	12/12/12 13:29	12/17/12 23:51	1
13C-2,3,7,8-TCDF	106		24 - 169	12/12/12 13:29	12/17/12 23:51	1
13C-1,2,3,7,8-PeCDD	83		25 - 181	12/12/12 13:29	12/17/12 23:51	1
13C-1,2,3,7,8-PeCDF	89		24 - 185	12/12/12 13:29	12/17/12 23:51	1
13C-2,3,4,7,8-PeCDF	82		21 - 178	12/12/12 13:29	12/17/12 23:51	1
13C-1,2,3,4,7,8-HxCDD	83		32 - 141	12/12/12 13:29	12/17/12 23:51	1
13C-1,2,3,6,7,8-HxCDD	95		28 - 130	12/12/12 13:29	12/17/12 23:51	1
13C-1,2,3,4,7,8-HxCDF	91		26 - 152	12/12/12 13:29	12/17/12 23:51	1
13C-1,2,3,6,7,8-HxCDF	106		26 - 123	12/12/12 13:29	12/17/12 23:51	1
13C-1,2,3,7,8,9-HxCDF	95		29 - 147	12/12/12 13:29	12/17/12 23:51	1
13C-2,3,4,6,7,8-HxCDF	100		28 - 136	12/12/12 13:29	12/17/12 23:51	1
13C-1,2,3,4,6,7,8-HpCDD	77		23 - 140	12/12/12 13:29	12/17/12 23:51	1
13C-1,2,3,4,6,7,8-HpCDF	91		28 - 143	12/12/12 13:29	12/17/12 23:51	1
13C-1,2,3,4,7,8,9-HpCDF	95		26 - 138	12/12/12 13:29	12/17/12 23:51	1
13C-OCDD	79		17 - 157	12/12/12 13:29	12/17/12 23:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	97		35 - 197	12/12/12 13:29	12/17/12 23:51	1

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-133-2

Lab Sample ID: 580-36242-69

Date Collected: 12/03/12 15:15

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 63.7

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.63	0.064	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
2,3,7,8-TCDF	0.56	J B	0.63	0.034	pg/g	☼	12/12/12 13:29	12/15/12 03:57	1
1,2,3,7,8-PeCDD	ND		3.1	0.11	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
1,2,3,7,8-PeCDF	0.19	J q	3.1	0.095	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
2,3,4,7,8-PeCDF	0.21	J q	3.1	0.11	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
1,2,3,4,7,8-HxCDD	0.31	J	3.1	0.055	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
1,2,3,6,7,8-HxCDD	1.6	J	3.1	0.060	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
1,2,3,7,8,9-HxCDD	0.85	J q	3.1	0.052	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
1,2,3,4,7,8-HxCDF	0.74	J	3.1	0.062	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
1,2,3,6,7,8-HxCDF	0.52	J	3.1	0.054	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
1,2,3,7,8,9-HxCDF	ND		3.1	0.062	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
2,3,4,6,7,8-HxCDF	0.47	J q	3.1	0.055	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
1,2,3,4,6,7,8-HpCDD	31	B	3.1	0.27	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
1,2,3,4,6,7,8-HpCDF	6.3	B	3.1	0.10	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
1,2,3,4,7,8,9-HpCDF	ND		3.1	0.15	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
OCDD	330	B	6.3	0.47	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
OCDF	17		6.3	0.19	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
Total TCDD	1.1	B q	0.63	0.064	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
Total TCDF	4.1	B q	0.63	0.067	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
Total PeCDD	ND		3.1	0.11	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
Total PeCDF	3.4	q	3.1	0.10	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
Total HxCDD	11	q	3.1	0.056	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
Total HxCDF	9.4	q	3.1	0.058	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
Total HpCDD	66	B	3.1	0.27	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1
Total HpCDF	23	B	3.1	0.12	pg/g	☼	12/12/12 13:29	12/18/12 00:35	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	70		25 - 164	12/12/12 13:29	12/15/12 03:57	1
13C-2,3,7,8-TCDD	78		25 - 164	12/12/12 13:29	12/18/12 00:35	1
13C-2,3,7,8-TCDF	72		24 - 169	12/12/12 13:29	12/15/12 03:57	1
13C-2,3,7,8-TCDF	93		24 - 169	12/12/12 13:29	12/18/12 00:35	1
13C-1,2,3,7,8-PeCDD	75		25 - 181	12/12/12 13:29	12/18/12 00:35	1
13C-1,2,3,7,8-PeCDF	75		24 - 185	12/12/12 13:29	12/18/12 00:35	1
13C-2,3,4,7,8-PeCDF	79		21 - 178	12/12/12 13:29	12/18/12 00:35	1
13C-1,2,3,4,7,8-HxCDD	79		32 - 141	12/12/12 13:29	12/18/12 00:35	1
13C-1,2,3,6,7,8-HxCDD	71		28 - 130	12/12/12 13:29	12/18/12 00:35	1
13C-1,2,3,4,7,8-HxCDF	75		26 - 152	12/12/12 13:29	12/18/12 00:35	1
13C-1,2,3,6,7,8-HxCDF	84		26 - 123	12/12/12 13:29	12/18/12 00:35	1
13C-1,2,3,7,8,9-HxCDF	79		29 - 147	12/12/12 13:29	12/18/12 00:35	1
13C-2,3,4,6,7,8-HxCDF	83		28 - 136	12/12/12 13:29	12/18/12 00:35	1
13C-1,2,3,4,6,7,8-HpCDD	58		23 - 140	12/12/12 13:29	12/18/12 00:35	1
13C-1,2,3,4,6,7,8-HpCDF	71		28 - 143	12/12/12 13:29	12/18/12 00:35	1
13C-1,2,3,4,7,8,9-HpCDF	72		26 - 138	12/12/12 13:29	12/18/12 00:35	1
13C-OCDD	58		17 - 157	12/12/12 13:29	12/18/12 00:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	90		35 - 197	12/12/12 13:29	12/15/12 03:57	1
37Cl4-2,3,7,8-TCDD	102		35 - 197	12/12/12 13:29	12/18/12 00:35	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-134-2

Lab Sample ID: 580-36242-74

Date Collected: 12/02/12 10:20

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 62.0

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.51	J	0.65	0.038	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
2,3,7,8-TCDF	1.8		0.65	0.068	pg/g	*	12/14/12 13:58	12/17/12 14:56	1
1,2,3,7,8-PeCDD	1.6	J	3.2	0.089	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
1,2,3,7,8-PeCDF	2.5	J	3.2	0.10	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
2,3,4,7,8-PeCDF	2.3	J	3.2	0.11	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
1,2,3,4,7,8-HxCDD	3.5		3.2	0.065	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
1,2,3,6,7,8-HxCDD	32		3.2	0.067	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
1,2,3,7,8,9-HxCDD	9.4		3.2	0.060	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
1,2,3,4,7,8-HxCDF	8.0		3.2	0.11	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
1,2,3,6,7,8-HxCDF	5.1		3.2	0.10	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
1,2,3,7,8,9-HxCDF	ND		3.2	0.097	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
2,3,4,6,7,8-HxCDF	3.0	J	3.2	0.093	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
1,2,3,4,6,7,8-HpCDD	550	B	3.2	0.43	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
1,2,3,4,6,7,8-HpCDF	79		3.2	0.26	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
1,2,3,4,7,8,9-HpCDF	3.7		3.2	0.35	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
OCDD	5700	B G	290	290	pg/g	*	12/14/12 13:58	01/11/13 04:44	20
OCDF	290		6.5	0.16	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
Total TCDD	8.7	q B	0.65	0.038	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
Total TCDF	9.5	q	0.65	0.076	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
Total PeCDD	13	q	3.2	0.089	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
Total PeCDF	34	q	3.2	0.11	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
Total HxCDD	130	q	3.2	0.064	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
Total HxCDF	160		3.2	0.10	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
Total HpCDD	1000	B	3.2	0.43	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
Total HpCDF	310		3.2	0.31	pg/g	*	12/14/12 13:58	12/17/12 22:49	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	71		25 - 164				12/14/12 13:58	12/17/12 22:49	1
13C-2,3,7,8-TCDF	70		24 - 169				12/14/12 13:58	12/17/12 14:56	1
13C-2,3,7,8-TCDF	89		24 - 169				12/14/12 13:58	12/17/12 22:49	1
13C-1,2,3,7,8-PeCDD	63		25 - 181				12/14/12 13:58	12/17/12 22:49	1
13C-1,2,3,7,8-PeCDF	71		24 - 185				12/14/12 13:58	12/17/12 22:49	1
13C-2,3,4,7,8-PeCDF	75		21 - 178				12/14/12 13:58	12/17/12 22:49	1
13C-1,2,3,4,7,8-HxCDD	71		32 - 141				12/14/12 13:58	12/17/12 22:49	1
13C-1,2,3,6,7,8-HxCDD	73		28 - 130				12/14/12 13:58	12/17/12 22:49	1
13C-1,2,3,4,7,8-HxCDF	83		26 - 152				12/14/12 13:58	12/17/12 22:49	1
13C-1,2,3,6,7,8-HxCDF	87		26 - 123				12/14/12 13:58	12/17/12 22:49	1
13C-1,2,3,7,8,9-HxCDF	83		29 - 147				12/14/12 13:58	12/17/12 22:49	1
13C-2,3,4,6,7,8-HxCDF	87		28 - 136				12/14/12 13:58	12/17/12 22:49	1
13C-1,2,3,4,6,7,8-HpCDD	74		23 - 140				12/14/12 13:58	12/17/12 22:49	1
13C-1,2,3,4,6,7,8-HpCDF	85		28 - 143				12/14/12 13:58	12/17/12 22:49	1
13C-1,2,3,4,7,8,9-HpCDF	89		26 - 138				12/14/12 13:58	12/17/12 22:49	1
13C-OCDD	41		17 - 157				12/14/12 13:58	01/11/13 04:44	20
13C-OCDD	84		17 - 157				12/14/12 13:58	12/17/12 22:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	102		35 - 197				12/14/12 13:58	12/17/12 14:56	1
37Cl4-2,3,7,8-TCDD	89		35 - 197				12/14/12 13:58	12/17/12 22:49	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-137

Lab Sample ID: 580-36242-93

Date Collected: 12/04/12 09:14

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 57.7

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.69	0.057	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
2,3,7,8-TCDF	0.47	J	0.69	0.10	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
1,2,3,7,8-PeCDD	ND		3.5	0.10	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
1,2,3,7,8-PeCDF	ND		3.5	0.14	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
2,3,4,7,8-PeCDF	0.33	J	3.5	0.15	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
1,2,3,4,7,8-HxCDD	0.36	J	3.5	0.085	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
1,2,3,6,7,8-HxCDD	2.0	J	3.5	0.086	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
1,2,3,7,8,9-HxCDD	0.88	J	3.5	0.077	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
1,2,3,4,7,8-HxCDF	0.83	J	3.5	0.064	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
1,2,3,6,7,8-HxCDF	0.35	J q	3.5	0.063	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
1,2,3,7,8,9-HxCDF	ND		3.5	0.057	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
2,3,4,6,7,8-HxCDF	0.48	J q	3.5	0.058	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
1,2,3,4,6,7,8-HpCDD	36	B	3.5	0.15	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
1,2,3,4,6,7,8-HpCDF	6.0		3.5	0.078	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
1,2,3,4,7,8,9-HpCDF	0.24	J q	3.5	0.091	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
OCDD	350	B	6.9	0.35	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
OCDF	15		6.9	0.14	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
Total TCDD	0.55	J B	0.69	0.057	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
Total TCDF	0.69	q	0.69	0.10	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
Total PeCDD	0.65	J q	3.5	0.10	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
Total PeCDF	2.1	J q	3.5	0.14	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
Total HxCDD	11	q	3.5	0.083	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
Total HxCDF	11	q	3.5	0.061	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
Total HpCDD	69	B	3.5	0.15	pg/g	*	12/14/12 13:58	12/17/12 23:32	1
Total HpCDF	18	q	3.5	0.084	pg/g	*	12/14/12 13:58	12/17/12 23:32	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	63		25 - 164	12/14/12 13:58	12/17/12 23:32	1
13C-2,3,7,8-TCDF	80		24 - 169	12/14/12 13:58	12/17/12 23:32	1
13C-1,2,3,7,8-PeCDD	55		25 - 181	12/14/12 13:58	12/17/12 23:32	1
13C-1,2,3,7,8-PeCDF	61		24 - 185	12/14/12 13:58	12/17/12 23:32	1
13C-2,3,4,7,8-PeCDF	65		21 - 178	12/14/12 13:58	12/17/12 23:32	1
13C-1,2,3,4,7,8-HxCDD	56		32 - 141	12/14/12 13:58	12/17/12 23:32	1
13C-1,2,3,6,7,8-HxCDD	56		28 - 130	12/14/12 13:58	12/17/12 23:32	1
13C-1,2,3,4,7,8-HxCDF	68		26 - 152	12/14/12 13:58	12/17/12 23:32	1
13C-1,2,3,6,7,8-HxCDF	68		26 - 123	12/14/12 13:58	12/17/12 23:32	1
13C-1,2,3,7,8,9-HxCDF	70		29 - 147	12/14/12 13:58	12/17/12 23:32	1
13C-2,3,4,6,7,8-HxCDF	66		28 - 136	12/14/12 13:58	12/17/12 23:32	1
13C-1,2,3,4,6,7,8-HpCDD	56		23 - 140	12/14/12 13:58	12/17/12 23:32	1
13C-1,2,3,4,6,7,8-HpCDF	60		28 - 143	12/14/12 13:58	12/17/12 23:32	1
13C-1,2,3,4,7,8,9-HpCDF	72		26 - 138	12/14/12 13:58	12/17/12 23:32	1
13C-OCDD	49		17 - 157	12/14/12 13:58	12/17/12 23:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	91		35 - 197	12/14/12 13:58	12/17/12 23:32	1

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-RB-20121202

Lab Sample ID: 580-36242-94

Date Collected: 12/02/12 17:00

Matrix: Water

Date Received: 12/07/12 08:50

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.9	0.41	pg/L		12/17/12 09:33	12/19/12 05:02	1
2,3,7,8-TCDF	ND		9.9	0.24	pg/L		12/17/12 09:33	12/19/12 05:02	1
1,2,3,7,8-PeCDD	ND		49	0.64	pg/L		12/17/12 09:33	12/19/12 05:02	1
1,2,3,7,8-PeCDF	ND		49	0.45	pg/L		12/17/12 09:33	12/19/12 05:02	1
2,3,4,7,8-PeCDF	ND		49	0.51	pg/L		12/17/12 09:33	12/19/12 05:02	1
1,2,3,4,7,8-HxCDD	ND		49	0.30	pg/L		12/17/12 09:33	12/19/12 05:02	1
1,2,3,6,7,8-HxCDD	ND		49	0.28	pg/L		12/17/12 09:33	12/19/12 05:02	1
1,2,3,7,8,9-HxCDD	ND		49	0.26	pg/L		12/17/12 09:33	12/19/12 05:02	1
1,2,3,4,7,8-HxCDF	ND		49	0.58	pg/L		12/17/12 09:33	12/19/12 05:02	1
1,2,3,6,7,8-HxCDF	ND		49	0.17	pg/L		12/17/12 09:33	12/19/12 05:02	1
1,2,3,7,8,9-HxCDF	ND		49	0.54	pg/L		12/17/12 09:33	12/19/12 05:02	1
2,3,4,6,7,8-HxCDF	ND		49	0.17	pg/L		12/17/12 09:33	12/19/12 05:02	1
1,2,3,4,6,7,8-HpCDD	ND		49	0.42	pg/L		12/17/12 09:33	12/19/12 05:02	1
1,2,3,4,6,7,8-HpCDF	ND		49	0.40	pg/L		12/17/12 09:33	12/19/12 05:02	1
1,2,3,4,7,8,9-HpCDF	ND		49	0.46	pg/L		12/17/12 09:33	12/19/12 05:02	1
OCDD	3.8	J B	99	0.53	pg/L		12/17/12 09:33	12/19/12 05:02	1
OCDF	ND		99	0.65	pg/L		12/17/12 09:33	12/19/12 05:02	1
Total TCDD	ND		9.9	0.41	pg/L		12/17/12 09:33	12/19/12 05:02	1
Total TCDF	ND		9.9	0.24	pg/L		12/17/12 09:33	12/19/12 05:02	1
Total PeCDD	ND		49	0.64	pg/L		12/17/12 09:33	12/19/12 05:02	1
Total PeCDF	ND		49	0.51	pg/L		12/17/12 09:33	12/19/12 05:02	1
Total HxCDD	ND		49	0.30	pg/L		12/17/12 09:33	12/19/12 05:02	1
Total HxCDF	ND		49	0.58	pg/L		12/17/12 09:33	12/19/12 05:02	1
Total HpCDD	ND		49	0.42	pg/L		12/17/12 09:33	12/19/12 05:02	1
Total HpCDF	ND		49	0.46	pg/L		12/17/12 09:33	12/19/12 05:02	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	75		25 - 164				12/17/12 09:33	12/19/12 05:02	1
13C-2,3,7,8-TCDF	86		24 - 169				12/17/12 09:33	12/19/12 05:02	1
13C-1,2,3,7,8-PeCDD	76		25 - 181				12/17/12 09:33	12/19/12 05:02	1
13C-1,2,3,7,8-PeCDF	78		24 - 185				12/17/12 09:33	12/19/12 05:02	1
13C-2,3,4,7,8-PeCDF	82		21 - 178				12/17/12 09:33	12/19/12 05:02	1
13C-1,2,3,4,7,8-HxCDD	79		32 - 141				12/17/12 09:33	12/19/12 05:02	1
13C-1,2,3,6,7,8-HxCDD	83		28 - 130				12/17/12 09:33	12/19/12 05:02	1
13C-1,2,3,4,7,8-HxCDF	80		26 - 152				12/17/12 09:33	12/19/12 05:02	1
13C-1,2,3,6,7,8-HxCDF	87		26 - 123				12/17/12 09:33	12/19/12 05:02	1
13C-1,2,3,7,8,9-HxCDF	80		29 - 147				12/17/12 09:33	12/19/12 05:02	1
13C-2,3,4,6,7,8-HxCDF	86		28 - 136				12/17/12 09:33	12/19/12 05:02	1
13C-1,2,3,4,6,7,8-HpCDD	65		23 - 140				12/17/12 09:33	12/19/12 05:02	1
13C-1,2,3,4,6,7,8-HpCDF	75		28 - 143				12/17/12 09:33	12/19/12 05:02	1
13C-1,2,3,4,7,8,9-HpCDF	76		26 - 138				12/17/12 09:33	12/19/12 05:02	1
13C-OCDD	68		17 - 157				12/17/12 09:33	12/19/12 05:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	101		35 - 197				12/17/12 09:33	12/19/12 05:02	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-RB-20121203

Lab Sample ID: 580-36242-95

Date Collected: 12/03/12 17:30

Matrix: Water

Date Received: 12/07/12 08:50

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.8	0.40	pg/L		12/17/12 09:33	12/19/12 05:47	1
2,3,7,8-TCDF	ND		9.8	0.27	pg/L		12/17/12 09:33	12/19/12 05:47	1
1,2,3,7,8-PeCDD	ND		49	0.66	pg/L		12/17/12 09:33	12/19/12 05:47	1
1,2,3,7,8-PeCDF	ND		49	0.40	pg/L		12/17/12 09:33	12/19/12 05:47	1
2,3,4,7,8-PeCDF	ND		49	0.48	pg/L		12/17/12 09:33	12/19/12 05:47	1
1,2,3,4,7,8-HxCDD	ND		49	0.33	pg/L		12/17/12 09:33	12/19/12 05:47	1
1,2,3,6,7,8-HxCDD	ND		49	0.33	pg/L		12/17/12 09:33	12/19/12 05:47	1
1,2,3,7,8,9-HxCDD	ND		49	0.30	pg/L		12/17/12 09:33	12/19/12 05:47	1
1,2,3,4,7,8-HxCDF	ND		49	0.19	pg/L		12/17/12 09:33	12/19/12 05:47	1
1,2,3,6,7,8-HxCDF	ND		49	0.54	pg/L		12/17/12 09:33	12/19/12 05:47	1
1,2,3,7,8,9-HxCDF	ND		49	0.21	pg/L		12/17/12 09:33	12/19/12 05:47	1
2,3,4,6,7,8-HxCDF	ND		49	0.17	pg/L		12/17/12 09:33	12/19/12 05:47	1
1,2,3,4,6,7,8-HpCDD	ND		49	0.44	pg/L		12/17/12 09:33	12/19/12 05:47	1
1,2,3,4,6,7,8-HpCDF	ND		49	0.90	pg/L		12/17/12 09:33	12/19/12 05:47	1
1,2,3,4,7,8,9-HpCDF	ND		49	0.41	pg/L		12/17/12 09:33	12/19/12 05:47	1
OCDD	4.0	J B	98	0.51	pg/L		12/17/12 09:33	12/19/12 05:47	1
OCDF	6.9	J q	98	1.1	pg/L		12/17/12 09:33	12/19/12 05:47	1
Total TCDD	ND		9.8	0.40	pg/L		12/17/12 09:33	12/19/12 05:47	1
Total TCDF	ND		9.8	0.27	pg/L		12/17/12 09:33	12/19/12 05:47	1
Total PeCDD	ND		49	0.66	pg/L		12/17/12 09:33	12/19/12 05:47	1
Total PeCDF	ND		49	0.48	pg/L		12/17/12 09:33	12/19/12 05:47	1
Total HxCDD	ND		49	0.33	pg/L		12/17/12 09:33	12/19/12 05:47	1
Total HxCDF	ND		49	0.54	pg/L		12/17/12 09:33	12/19/12 05:47	1
Total HpCDD	ND		49	0.44	pg/L		12/17/12 09:33	12/19/12 05:47	1
Total HpCDF	ND		49	0.90	pg/L		12/17/12 09:33	12/19/12 05:47	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	80		25 - 164				12/17/12 09:33	12/19/12 05:47	1
13C-2,3,7,8-TCDF	91		24 - 169				12/17/12 09:33	12/19/12 05:47	1
13C-1,2,3,7,8-PeCDD	77		25 - 181				12/17/12 09:33	12/19/12 05:47	1
13C-1,2,3,7,8-PeCDF	82		24 - 185				12/17/12 09:33	12/19/12 05:47	1
13C-2,3,4,7,8-PeCDF	82		21 - 178				12/17/12 09:33	12/19/12 05:47	1
13C-1,2,3,4,7,8-HxCDD	92		32 - 141				12/17/12 09:33	12/19/12 05:47	1
13C-1,2,3,6,7,8-HxCDD	80		28 - 130				12/17/12 09:33	12/19/12 05:47	1
13C-1,2,3,4,7,8-HxCDF	87		26 - 152				12/17/12 09:33	12/19/12 05:47	1
13C-1,2,3,6,7,8-HxCDF	94		26 - 123				12/17/12 09:33	12/19/12 05:47	1
13C-1,2,3,7,8,9-HxCDF	86		29 - 147				12/17/12 09:33	12/19/12 05:47	1
13C-2,3,4,6,7,8-HxCDF	93		28 - 136				12/17/12 09:33	12/19/12 05:47	1
13C-1,2,3,4,6,7,8-HpCDD	67		23 - 140				12/17/12 09:33	12/19/12 05:47	1
13C-1,2,3,4,6,7,8-HpCDF	82		28 - 143				12/17/12 09:33	12/19/12 05:47	1
13C-1,2,3,4,7,8,9-HpCDF	76		26 - 138				12/17/12 09:33	12/19/12 05:47	1
13C-OCDD	68		17 - 157				12/17/12 09:33	12/19/12 05:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	103		35 - 197				12/17/12 09:33	12/19/12 05:47	1

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-RB-20121204

Lab Sample ID: 580-36242-96

Date Collected: 12/04/12 17:35

Matrix: Water

Date Received: 12/07/12 08:50

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.8	0.48	pg/L		12/17/12 09:33	12/19/12 06:31	1
2,3,7,8-TCDF	ND		9.8	0.34	pg/L		12/17/12 09:33	12/19/12 06:31	1
1,2,3,7,8-PeCDD	ND		49	0.77	pg/L		12/17/12 09:33	12/19/12 06:31	1
1,2,3,7,8-PeCDF	ND		49	0.53	pg/L		12/17/12 09:33	12/19/12 06:31	1
2,3,4,7,8-PeCDF	ND		49	0.55	pg/L		12/17/12 09:33	12/19/12 06:31	1
1,2,3,4,7,8-HxCDD	ND		49	0.37	pg/L		12/17/12 09:33	12/19/12 06:31	1
1,2,3,6,7,8-HxCDD	ND		49	0.35	pg/L		12/17/12 09:33	12/19/12 06:31	1
1,2,3,7,8,9-HxCDD	ND		49	0.32	pg/L		12/17/12 09:33	12/19/12 06:31	1
1,2,3,4,7,8-HxCDF	ND		49	0.20	pg/L		12/17/12 09:33	12/19/12 06:31	1
1,2,3,6,7,8-HxCDF	ND		49	0.20	pg/L		12/17/12 09:33	12/19/12 06:31	1
1,2,3,7,8,9-HxCDF	ND		49	0.24	pg/L		12/17/12 09:33	12/19/12 06:31	1
2,3,4,6,7,8-HxCDF	ND		49	0.19	pg/L		12/17/12 09:33	12/19/12 06:31	1
1,2,3,4,6,7,8-HpCDD	ND		49	1.2	pg/L		12/17/12 09:33	12/19/12 06:31	1
1,2,3,4,6,7,8-HpCDF	ND		49	0.78	pg/L		12/17/12 09:33	12/19/12 06:31	1
1,2,3,4,7,8,9-HpCDF	ND		49	0.43	pg/L		12/17/12 09:33	12/19/12 06:31	1
OCDD	ND		98	3.8	pg/L		12/17/12 09:33	12/19/12 06:31	1
OCDF	ND		98	2.2	pg/L		12/17/12 09:33	12/19/12 06:31	1
Total TCDD	ND		9.8	0.48	pg/L		12/17/12 09:33	12/19/12 06:31	1
Total TCDF	ND		9.8	0.34	pg/L		12/17/12 09:33	12/19/12 06:31	1
Total PeCDD	ND		49	0.77	pg/L		12/17/12 09:33	12/19/12 06:31	1
Total PeCDF	ND		49	0.55	pg/L		12/17/12 09:33	12/19/12 06:31	1
Total HxCDD	ND		49	0.37	pg/L		12/17/12 09:33	12/19/12 06:31	1
Total HxCDF	ND		49	0.24	pg/L		12/17/12 09:33	12/19/12 06:31	1
Total HpCDD	ND		49	1.2	pg/L		12/17/12 09:33	12/19/12 06:31	1
Total HpCDF	ND		49	0.78	pg/L		12/17/12 09:33	12/19/12 06:31	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	65		25 - 164	12/17/12 09:33	12/19/12 06:31	1
13C-2,3,7,8-TCDF	74		24 - 169	12/17/12 09:33	12/19/12 06:31	1
13C-1,2,3,7,8-PeCDD	66		25 - 181	12/17/12 09:33	12/19/12 06:31	1
13C-1,2,3,7,8-PeCDF	63		24 - 185	12/17/12 09:33	12/19/12 06:31	1
13C-2,3,4,7,8-PeCDF	70		21 - 178	12/17/12 09:33	12/19/12 06:31	1
13C-1,2,3,4,7,8-HxCDD	71		32 - 141	12/17/12 09:33	12/19/12 06:31	1
13C-1,2,3,6,7,8-HxCDD	74		28 - 130	12/17/12 09:33	12/19/12 06:31	1
13C-1,2,3,4,7,8-HxCDF	75		26 - 152	12/17/12 09:33	12/19/12 06:31	1
13C-1,2,3,6,7,8-HxCDF	76		26 - 123	12/17/12 09:33	12/19/12 06:31	1
13C-1,2,3,7,8,9-HxCDF	74		29 - 147	12/17/12 09:33	12/19/12 06:31	1
13C-2,3,4,6,7,8-HxCDF	76		28 - 136	12/17/12 09:33	12/19/12 06:31	1
13C-1,2,3,4,6,7,8-HpCDD	57		23 - 140	12/17/12 09:33	12/19/12 06:31	1
13C-1,2,3,4,6,7,8-HpCDF	66		28 - 143	12/17/12 09:33	12/19/12 06:31	1
13C-1,2,3,4,7,8,9-HpCDF	64		26 - 138	12/17/12 09:33	12/19/12 06:31	1
13C-OCDD	59		17 - 157	12/17/12 09:33	12/19/12 06:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	88		35 - 197	12/17/12 09:33	12/19/12 06:31	1

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-PS-SRM

Lab Sample ID: 580-36242-97

Date Collected: 11/26/12 10:00

Matrix: Solid

Date Received: 12/07/12 08:50

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	1.3	J q	5.1	0.29	pg/g		12/14/12 13:58	12/18/12 00:14	1
2,3,7,8-TCDD	1.7	J q	4.9	0.45	pg/g		12/12/12 13:29	12/18/12 01:20	1
2,3,7,8-TCDF	ND		5.1	2.2	pg/g		12/14/12 13:58	12/18/12 00:14	1
2,3,7,8-TCDF	1.8	J q B	4.9	0.37	pg/g		12/12/12 13:29	12/18/12 01:20	1
1,2,3,7,8-PeCDD	0.64	J	25	0.50	pg/g		12/14/12 13:58	12/18/12 00:14	1
1,2,3,7,8-PeCDD	ND		25	0.78	pg/g		12/12/12 13:29	12/18/12 01:20	1
1,2,3,7,8-PeCDF	ND		25	0.59	pg/g		12/14/12 13:58	12/18/12 00:14	1
1,2,3,7,8-PeCDF	ND		25	0.51	pg/g		12/12/12 13:29	12/18/12 01:20	1
2,3,4,7,8-PeCDF	2.6	J q	25	0.70	pg/g		12/14/12 13:58	12/18/12 00:14	1
2,3,4,7,8-PeCDF	1.2	J q	25	0.62	pg/g		12/12/12 13:29	12/18/12 01:20	1
1,2,3,4,7,8-HxCDD	1.5	J	25	0.31	pg/g		12/14/12 13:58	12/18/12 00:14	1
1,2,3,4,7,8-HxCDD	1.8	J	25	0.31	pg/g		12/12/12 13:29	12/18/12 01:20	1
1,2,3,6,7,8-HxCDD	3.0	J	25	0.31	pg/g		12/14/12 13:58	12/18/12 00:14	1
1,2,3,6,7,8-HxCDD	5.1	J q	25	0.31	pg/g		12/12/12 13:29	12/18/12 01:20	1
1,2,3,7,8,9-HxCDD	2.2	J	25	0.28	pg/g		12/14/12 13:58	12/18/12 00:14	1
1,2,3,7,8,9-HxCDD	2.9	J q	25	0.28	pg/g		12/12/12 13:29	12/18/12 01:20	1
1,2,3,4,7,8-HxCDF	3.2	J	25	0.27	pg/g		12/14/12 13:58	12/18/12 00:14	1
1,2,3,4,7,8-HxCDF	3.7	J	25	0.33	pg/g		12/12/12 13:29	12/18/12 01:20	1
1,2,3,6,7,8-HxCDF	1.1	J q	25	0.27	pg/g		12/14/12 13:58	12/18/12 00:14	1
1,2,3,6,7,8-HxCDF	1.4	J	25	0.31	pg/g		12/12/12 13:29	12/18/12 01:20	1
1,2,3,7,8,9-HxCDF	ND		25	0.27	pg/g		12/14/12 13:58	12/18/12 00:14	1
1,2,3,7,8,9-HxCDF	ND		25	0.36	pg/g		12/12/12 13:29	12/18/12 01:20	1
2,3,4,6,7,8-HxCDF	0.85	J q	25	0.25	pg/g		12/14/12 13:58	12/18/12 00:14	1
2,3,4,6,7,8-HxCDF	1.5	J	25	0.31	pg/g		12/12/12 13:29	12/18/12 01:20	1
1,2,3,4,6,7,8-HpCDD	67	B	25	0.52	pg/g		12/14/12 13:58	12/18/12 00:14	1
1,2,3,4,6,7,8-HpCDD	140	B	25	1.2	pg/g		12/12/12 13:29	12/18/12 01:20	1
1,2,3,4,6,7,8-HpCDF	15	J q	25	0.30	pg/g		12/14/12 13:58	12/18/12 00:14	1
1,2,3,4,6,7,8-HpCDF	26	B	25	0.51	pg/g		12/12/12 13:29	12/18/12 01:20	1
1,2,3,4,7,8,9-HpCDF	ND		25	0.41	pg/g		12/14/12 13:58	12/18/12 00:14	1
1,2,3,4,7,8,9-HpCDF	ND		25	0.73	pg/g		12/12/12 13:29	12/18/12 01:20	1
OCDD	640	B	51	0.87	pg/g		12/14/12 13:58	12/18/12 00:14	1
OCDD	1200	B	49	2.6	pg/g		12/12/12 13:29	12/18/12 01:20	1
OCDF	64		51	0.48	pg/g		12/14/12 13:58	12/18/12 00:14	1
OCDF	82		49	0.97	pg/g		12/12/12 13:29	12/18/12 01:20	1
Total TCDD	5.6	q B	5.1	0.29	pg/g		12/14/12 13:58	12/18/12 00:14	1
Total TCDD	1.7	J q B	4.9	0.45	pg/g		12/12/12 13:29	12/18/12 01:20	1
Total TCDF	ND		5.1	2.2	pg/g		12/14/12 13:58	12/18/12 00:14	1
Total PCDF	3.4	J q B	4.9	0.37	pg/g		12/12/12 13:29	12/18/12 01:20	1
Total PeCDD	5.4	J q	25	0.50	pg/g		12/14/12 13:58	12/18/12 00:14	1
Total PeCDD	ND		25	0.78	pg/g		12/12/12 13:29	12/18/12 01:20	1
Total PeCDF	9.2	J q	25	0.65	pg/g		12/14/12 13:58	12/18/12 00:14	1
Total PeCDF	7.2	J q	25	0.56	pg/g		12/12/12 13:29	12/18/12 01:20	1
Total HxCDD	27		25	0.30	pg/g		12/14/12 13:58	12/18/12 00:14	1
Total HxCDD	30	q	25	0.30	pg/g		12/12/12 13:29	12/18/12 01:20	1
Total HxCDF	23	J q	25	0.26	pg/g		12/14/12 13:58	12/18/12 00:14	1
Total HxCDF	31		25	0.33	pg/g		12/12/12 13:29	12/18/12 01:20	1
Total HpCDD	170	B	25	0.52	pg/g		12/14/12 13:58	12/18/12 00:14	1
Total HpCDD	280	B	25	1.2	pg/g		12/12/12 13:29	12/18/12 01:20	1
Total HpCDF	56	q	25	0.35	pg/g		12/14/12 13:58	12/18/12 00:14	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-PS-SRM

Lab Sample ID: 580-36242-97

Date Collected: 11/26/12 10:00

Matrix: Solid

Date Received: 12/07/12 08:50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDF	86	B	25	0.62	pg/g		12/12/12 13:29	12/18/12 01:20	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	67		25 - 164				12/14/12 13:58	12/18/12 00:14	1
13C-2,3,7,8-TCDD	88		25 - 164				12/12/12 13:29	12/18/12 01:20	1
13C-2,3,7,8-TCDF	86		24 - 169				12/14/12 13:58	12/18/12 00:14	1
13C-2,3,7,8-TCDF	104		24 - 169				12/12/12 13:29	12/18/12 01:20	1
13C-1,2,3,7,8-PeCDD	62		25 - 181				12/14/12 13:58	12/18/12 00:14	1
13C-1,2,3,7,8-PeCDD	84		25 - 181				12/12/12 13:29	12/18/12 01:20	1
13C-1,2,3,7,8-PeCDF	70		24 - 185				12/14/12 13:58	12/18/12 00:14	1
13C-1,2,3,7,8-PeCDF	89		24 - 185				12/12/12 13:29	12/18/12 01:20	1
13C-2,3,4,7,8-PeCDF	73		21 - 178				12/14/12 13:58	12/18/12 00:14	1
13C-2,3,4,7,8-PeCDF	89		21 - 178				12/12/12 13:29	12/18/12 01:20	1
13C-1,2,3,4,7,8-HxCDD	75		32 - 141				12/14/12 13:58	12/18/12 00:14	1
13C-1,2,3,4,7,8-HxCDD	88		32 - 141				12/12/12 13:29	12/18/12 01:20	1
13C-1,2,3,6,7,8-HxCDD	77		28 - 130				12/14/12 13:58	12/18/12 00:14	1
13C-1,2,3,6,7,8-HxCDD	90		28 - 130				12/12/12 13:29	12/18/12 01:20	1
13C-1,2,3,4,7,8-HxCDF	94		26 - 152				12/14/12 13:58	12/18/12 00:14	1
13C-1,2,3,4,7,8-HxCDF	95		26 - 152				12/12/12 13:29	12/18/12 01:20	1
13C-1,2,3,6,7,8-HxCDF	95		26 - 123				12/14/12 13:58	12/18/12 00:14	1
13C-1,2,3,6,7,8-HxCDF	100		26 - 123				12/12/12 13:29	12/18/12 01:20	1
13C-1,2,3,7,8,9-HxCDF	82		29 - 147				12/14/12 13:58	12/18/12 00:14	1
13C-1,2,3,7,8,9-HxCDF	93		29 - 147				12/12/12 13:29	12/18/12 01:20	1
13C-2,3,4,6,7,8-HxCDF	93		28 - 136				12/14/12 13:58	12/18/12 00:14	1
13C-2,3,4,6,7,8-HxCDF	98		28 - 136				12/12/12 13:29	12/18/12 01:20	1
13C-1,2,3,4,6,7,8-HpCDD	83		23 - 140				12/14/12 13:58	12/18/12 00:14	1
13C-1,2,3,4,6,7,8-HpCDD	75		23 - 140				12/12/12 13:29	12/18/12 01:20	1
13C-1,2,3,4,6,7,8-HpCDF	98		28 - 143				12/14/12 13:58	12/18/12 00:14	1
13C-1,2,3,4,6,7,8-HpCDF	91		28 - 143				12/12/12 13:29	12/18/12 01:20	1
13C-1,2,3,4,7,8,9-HpCDF	98		26 - 138				12/14/12 13:58	12/18/12 00:14	1
13C-1,2,3,4,7,8,9-HpCDF	88		26 - 138				12/12/12 13:29	12/18/12 01:20	1
13C-OCDD	82		17 - 157				12/14/12 13:58	12/18/12 00:14	1
13C-OCDD	77		17 - 157				12/12/12 13:29	12/18/12 01:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	81		35 - 197				12/14/12 13:58	12/18/12 00:14	1
37Cl4-2,3,7,8-TCDD	108		35 - 197				12/12/12 13:29	12/18/12 01:20	1

QC Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-7287/1-A

Matrix: Solid

Analysis Batch: 7371

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 7287

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.50	0.018	pg/g		12/12/12 13:29	12/13/12 18:42	1
2,3,7,8-TCDF	0.0649	J	0.50	0.015	pg/g		12/12/12 13:29	12/13/12 18:42	1
1,2,3,7,8-PeCDD	ND		2.5	0.031	pg/g		12/12/12 13:29	12/13/12 18:42	1
1,2,3,7,8-PeCDF	ND		2.5	0.021	pg/g		12/12/12 13:29	12/13/12 18:42	1
2,3,4,7,8-PeCDF	ND		2.5	0.036	pg/g		12/12/12 13:29	12/13/12 18:42	1
1,2,3,4,7,8-HxCDD	ND		2.5	0.015	pg/g		12/12/12 13:29	12/13/12 18:42	1
1,2,3,6,7,8-HxCDD	ND		2.5	0.015	pg/g		12/12/12 13:29	12/13/12 18:42	1
1,2,3,7,8,9-HxCDD	ND		2.5	0.013	pg/g		12/12/12 13:29	12/13/12 18:42	1
1,2,3,4,7,8-HxCDF	ND		2.5	0.010	pg/g		12/12/12 13:29	12/13/12 18:42	1
1,2,3,6,7,8-HxCDF	ND		2.5	0.0094	pg/g		12/12/12 13:29	12/13/12 18:42	1
1,2,3,7,8,9-HxCDF	ND		2.5	0.011	pg/g		12/12/12 13:29	12/13/12 18:42	1
2,3,4,6,7,8-HxCDF	ND		2.5	0.0093	pg/g		12/12/12 13:29	12/13/12 18:42	1
1,2,3,4,6,7,8-HpCDD	0.0581	J	2.5	0.018	pg/g		12/12/12 13:29	12/13/12 18:42	1
1,2,3,4,6,7,8-HpCDF	0.0379	J	2.5	0.011	pg/g		12/12/12 13:29	12/13/12 18:42	1
1,2,3,4,7,8,9-HpCDF	ND		2.5	0.015	pg/g		12/12/12 13:29	12/13/12 18:42	1
OCDD	0.103	J q	5.0	0.015	pg/g		12/12/12 13:29	12/13/12 18:42	1
OCDF	ND		5.0	0.046	pg/g		12/12/12 13:29	12/13/12 18:42	1
Total TCDD	0.132	J q	0.50	0.018	pg/g		12/12/12 13:29	12/13/12 18:42	1
Total TCDF	0.0649	J	0.50	0.015	pg/g		12/12/12 13:29	12/13/12 18:42	1
Total PeCDD	ND		2.5	0.031	pg/g		12/12/12 13:29	12/13/12 18:42	1
Total PeCDF	ND		2.5	0.036	pg/g		12/12/12 13:29	12/13/12 18:42	1
Total HxCDD	ND		2.5	0.19	pg/g		12/12/12 13:29	12/13/12 18:42	1
Total HxCDF	ND		2.5	0.011	pg/g		12/12/12 13:29	12/13/12 18:42	1
Total HpCDD	0.124	J q	2.5	0.018	pg/g		12/12/12 13:29	12/13/12 18:42	1
Total HpCDF	0.0379	J	2.5	0.013	pg/g		12/12/12 13:29	12/13/12 18:42	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	79		25 - 164	12/12/12 13:29	12/13/12 18:42	1
13C-2,3,7,8-TCDF	93		24 - 169	12/12/12 13:29	12/13/12 18:42	1
13C-1,2,3,7,8-PeCDD	79		25 - 181	12/12/12 13:29	12/13/12 18:42	1
13C-1,2,3,7,8-PeCDF	77		24 - 185	12/12/12 13:29	12/13/12 18:42	1
13C-2,3,4,7,8-PeCDF	78		21 - 178	12/12/12 13:29	12/13/12 18:42	1
13C-1,2,3,4,7,8-HxCDD	79		32 - 141	12/12/12 13:29	12/13/12 18:42	1
13C-1,2,3,6,7,8-HxCDD	76		28 - 130	12/12/12 13:29	12/13/12 18:42	1
13C-1,2,3,4,7,8-HxCDF	86		26 - 152	12/12/12 13:29	12/13/12 18:42	1
13C-1,2,3,6,7,8-HxCDF	95		26 - 123	12/12/12 13:29	12/13/12 18:42	1
13C-1,2,3,7,8,9-HxCDF	88		29 - 147	12/12/12 13:29	12/13/12 18:42	1
13C-2,3,4,6,7,8-HxCDF	94		28 - 136	12/12/12 13:29	12/13/12 18:42	1
13C-1,2,3,4,6,7,8-HpCDD	69		23 - 140	12/12/12 13:29	12/13/12 18:42	1
13C-1,2,3,4,6,7,8-HpCDF	82		28 - 143	12/12/12 13:29	12/13/12 18:42	1
13C-1,2,3,4,7,8,9-HpCDF	82		26 - 138	12/12/12 13:29	12/13/12 18:42	1
13C-OCDD	82		17 - 157	12/12/12 13:29	12/13/12 18:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	104		35 - 197	12/12/12 13:29	12/13/12 18:42	1

TestAmerica Seattle

QC Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-7287/2-A

Matrix: Solid

Analysis Batch: 7371

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 7287

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	20.0	21.6		pg/g		108	67 - 158
2,3,7,8-TCDF	20.0	21.3		pg/g		107	75 - 158
1,2,3,7,8-PeCDD	100	101		pg/g		101	70 - 142
1,2,3,7,8-PeCDF	100	119		pg/g		119	80 - 134
2,3,4,7,8-PeCDF	100	113		pg/g		113	68 - 160
1,2,3,4,7,8-HxCDD	100	111		pg/g		111	70 - 164
1,2,3,6,7,8-HxCDD	100	110		pg/g		110	76 - 134
1,2,3,7,8,9-HxCDD	100	113		pg/g		113	64 - 162
1,2,3,4,7,8-HxCDF	100	104		pg/g		104	72 - 134
1,2,3,6,7,8-HxCDF	100	105		pg/g		105	84 - 130
1,2,3,7,8,9-HxCDF	100	104		pg/g		104	78 - 130
2,3,4,6,7,8-HxCDF	100	104		pg/g		104	70 - 156
1,2,3,4,6,7,8-HpCDD	100	106		pg/g		106	70 - 140
1,2,3,4,6,7,8-HpCDF	100	105		pg/g		105	82 - 122
1,2,3,4,7,8,9-HpCDF	100	104		pg/g		104	78 - 138
OCDD	200	213		pg/g		107	78 - 144
OCDF	200	223		pg/g		111	63 - 170

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C-2,3,7,8-TCDD	78		20 - 175
13C-2,3,7,8-TCDF	91		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	76		21 - 192
13C-2,3,4,7,8-PeCDF	79		13 - 328
13C-1,2,3,4,7,8-HxCDD	83		21 - 193
13C-1,2,3,6,7,8-HxCDD	76		25 - 163
13C-1,2,3,4,7,8-HxCDF	88		19 - 202
13C-1,2,3,6,7,8-HxCDF	94		21 - 159
13C-1,2,3,7,8,9-HxCDF	91		17 - 205
13C-2,3,4,6,7,8-HxCDF	93		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	72		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	85		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	84		20 - 186
13C-OCDD	85		13 - 199

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
37Cl4-2,3,7,8-TCDD	96		35 - 197

Lab Sample ID: MB 320-7414/1-A

Matrix: Solid

Analysis Batch: 7556

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 7414

Analyte	MB MB		RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2,3,7,8-TCDD	ND		0.50	0.036	pg/g		12/14/12 13:58	12/17/12 21:24	1
2,3,7,8-TCDF	ND		0.50	0.068	pg/g		12/14/12 13:58	12/17/12 21:24	1
1,2,3,7,8-PeCDD	ND		2.5	0.062	pg/g		12/14/12 13:58	12/17/12 21:24	1
1,2,3,7,8-PeCDF	ND		2.5	0.080	pg/g		12/14/12 13:58	12/17/12 21:24	1
2,3,4,7,8-PeCDF	ND		2.5	0.089	pg/g		12/14/12 13:58	12/17/12 21:24	1

TestAmerica Seattle

QC Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-7414/1-A
Matrix: Solid
Analysis Batch: 7556

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 7414

Analyte	MB	MB	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,3,4,7,8-HxCDD	ND		2.5	0.039	pg/g		12/14/12 13:58	12/17/12 21:24	1
1,2,3,6,7,8-HxCDD	ND		2.5	0.040	pg/g		12/14/12 13:58	12/17/12 21:24	1
1,2,3,7,8,9-HxCDD	ND		2.5	0.035	pg/g		12/14/12 13:58	12/17/12 21:24	1
1,2,3,4,7,8-HxCDF	ND		2.5	0.026	pg/g		12/14/12 13:58	12/17/12 21:24	1
1,2,3,6,7,8-HxCDF	ND		2.5	0.025	pg/g		12/14/12 13:58	12/17/12 21:24	1
1,2,3,7,8,9-HxCDF	ND		2.5	0.037	pg/g		12/14/12 13:58	12/17/12 21:24	1
2,3,4,6,7,8-HxCDF	ND		2.5	0.024	pg/g		12/14/12 13:58	12/17/12 21:24	1
1,2,3,4,6,7,8-HpCDD	0.0602	J q	2.5	0.029	pg/g		12/14/12 13:58	12/17/12 21:24	1
1,2,3,4,6,7,8-HpCDF	ND		2.5	0.023	pg/g		12/14/12 13:58	12/17/12 21:24	1
1,2,3,4,7,8,9-HpCDF	ND		2.5	0.035	pg/g		12/14/12 13:58	12/17/12 21:24	1
OCDD	0.283	J	5.0	0.062	pg/g		12/14/12 13:58	12/17/12 21:24	1
OCDF	ND		5.0	0.053	pg/g		12/14/12 13:58	12/17/12 21:24	1
Total TCDD	0.101	J q	0.50	0.036	pg/g		12/14/12 13:58	12/17/12 21:24	1
Total TCDF	ND		0.50	0.068	pg/g		12/14/12 13:58	12/17/12 21:24	1
Total PeCDD	ND		2.5	0.35	pg/g		12/14/12 13:58	12/17/12 21:24	1
Total PeCDF	ND		2.5	0.089	pg/g		12/14/12 13:58	12/17/12 21:24	1
Total HxCDD	ND		2.5	0.14	pg/g		12/14/12 13:58	12/17/12 21:24	1
Total HxCDF	ND		2.5	0.037	pg/g		12/14/12 13:58	12/17/12 21:24	1
Total HpCDD	0.159	J q	2.5	0.029	pg/g		12/14/12 13:58	12/17/12 21:24	1
Total HpCDF	ND		2.5	0.035	pg/g		12/14/12 13:58	12/17/12 21:24	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C-2,3,7,8-TCDD	76		25 - 164	12/14/12 13:58	12/17/12 21:24	1
13C-2,3,7,8-TCDF	95		24 - 169	12/14/12 13:58	12/17/12 21:24	1
13C-1,2,3,7,8-PeCDD	71		25 - 181	12/14/12 13:58	12/17/12 21:24	1
13C-1,2,3,7,8-PeCDF	78		24 - 185	12/14/12 13:58	12/17/12 21:24	1
13C-2,3,4,7,8-PeCDF	82		21 - 178	12/14/12 13:58	12/17/12 21:24	1
13C-1,2,3,4,7,8-HxCDD	73		32 - 141	12/14/12 13:58	12/17/12 21:24	1
13C-1,2,3,6,7,8-HxCDD	79		28 - 130	12/14/12 13:58	12/17/12 21:24	1
13C-1,2,3,4,7,8-HxCDF	92		26 - 152	12/14/12 13:58	12/17/12 21:24	1
13C-1,2,3,6,7,8-HxCDF	97		26 - 123	12/14/12 13:58	12/17/12 21:24	1
13C-1,2,3,7,8,9-HxCDF	87		29 - 147	12/14/12 13:58	12/17/12 21:24	1
13C-2,3,4,6,7,8-HxCDF	91		28 - 136	12/14/12 13:58	12/17/12 21:24	1
13C-1,2,3,4,6,7,8-HpCDD	85		23 - 140	12/14/12 13:58	12/17/12 21:24	1
13C-1,2,3,4,6,7,8-HpCDF	99		28 - 143	12/14/12 13:58	12/17/12 21:24	1
13C-1,2,3,4,7,8,9-HpCDF	98		26 - 138	12/14/12 13:58	12/17/12 21:24	1
13C-OCDD	86		17 - 157	12/14/12 13:58	12/17/12 21:24	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
37Cl4-2,3,7,8-TCDD	87		35 - 197	12/14/12 13:58	12/17/12 21:24	1

Lab Sample ID: LCS 320-7414/2-A
Matrix: Solid
Analysis Batch: 7556

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 7414

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
2,3,7,8-TCDD	20.0	20.0		pg/g		100	67 - 158
2,3,7,8-TCDF	20.0	22.1		pg/g		111	75 - 158

TestAmerica Seattle

QC Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-7414/2-A

Matrix: Solid

Analysis Batch: 7556

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 7414

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3,7,8-PeCDD	100	86.6		pg/g		87	70 - 142
1,2,3,7,8-PeCDF	100	103		pg/g		103	80 - 134
2,3,4,7,8-PeCDF	100	97.8		pg/g		98	68 - 160
1,2,3,4,7,8-HxCDD	100	94.9		pg/g		95	70 - 164
1,2,3,6,7,8-HxCDD	100	99.6		pg/g		100	76 - 134
1,2,3,7,8,9-HxCDD	100	98.5		pg/g		99	64 - 162
1,2,3,4,7,8-HxCDF	100	94.8		pg/g		95	72 - 134
1,2,3,6,7,8-HxCDF	100	103		pg/g		103	84 - 130
1,2,3,7,8,9-HxCDF	100	99.4		pg/g		99	78 - 130
2,3,4,6,7,8-HxCDF	100	99.5		pg/g		99	70 - 156
1,2,3,4,6,7,8-HpCDD	100	92.6		pg/g		93	70 - 140
1,2,3,4,6,7,8-HpCDF	100	100		pg/g		100	82 - 122
1,2,3,4,7,8,9-HpCDF	100	95.2		pg/g		95	78 - 138
OCDD	200	202		pg/g		101	78 - 144
OCDF	200	232		pg/g		116	63 - 170

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C-2,3,7,8-TCDD	66		20 - 175
13C-2,3,7,8-TCDF	83		22 - 152
13C-1,2,3,7,8-PeCDD	59		21 - 227
13C-1,2,3,7,8-PeCDF	66		21 - 192
13C-2,3,4,7,8-PeCDF	70		13 - 328
13C-1,2,3,4,7,8-HxCDD	70		21 - 193
13C-1,2,3,6,7,8-HxCDD	70		25 - 163
13C-1,2,3,4,7,8-HxCDF	80		19 - 202
13C-1,2,3,6,7,8-HxCDF	83		21 - 159
13C-1,2,3,7,8,9-HxCDF	82		17 - 205
13C-2,3,4,6,7,8-HxCDF	83		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	75		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	88		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	89		20 - 186
13C-OCDD	79		13 - 199

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
37Cl4-2,3,7,8-TCDD	83		35 - 197

Lab Sample ID: MB 320-7437/1-A

Matrix: Water

Analysis Batch: 7570

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 7437

Analyte	MB MB		RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2,3,7,8-TCDD	ND		10	0.36	pg/L		12/17/12 09:33	12/18/12 23:51	1
2,3,7,8-TCDF	ND		10	0.45	pg/L		12/17/12 09:33	12/18/12 23:51	1
1,2,3,7,8-PeCDD	ND		50	0.56	pg/L		12/17/12 09:33	12/18/12 23:51	1
1,2,3,7,8-PeCDF	ND		50	0.38	pg/L		12/17/12 09:33	12/18/12 23:51	1
2,3,4,7,8-PeCDF	ND		50	2.2	pg/L		12/17/12 09:33	12/18/12 23:51	1
1,2,3,4,7,8-HxCDD	ND		50	0.26	pg/L		12/17/12 09:33	12/18/12 23:51	1
1,2,3,6,7,8-HxCDD	ND		50	0.26	pg/L		12/17/12 09:33	12/18/12 23:51	1

TestAmerica Seattle

QC Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-7437/1-A
Matrix: Water
Analysis Batch: 7570

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 7437

Analyte	MB	MB	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,3,7,8,9-HxCDD	ND		50	0.23	pg/L		12/17/12 09:33	12/18/12 23:51	1
1,2,3,4,7,8-HxCDF	ND		50	0.18	pg/L		12/17/12 09:33	12/18/12 23:51	1
1,2,3,6,7,8-HxCDF	ND		50	0.17	pg/L		12/17/12 09:33	12/18/12 23:51	1
1,2,3,7,8,9-HxCDF	ND		50	0.99	pg/L		12/17/12 09:33	12/18/12 23:51	1
2,3,4,6,7,8-HxCDF	ND		50	0.16	pg/L		12/17/12 09:33	12/18/12 23:51	1
1,2,3,4,6,7,8-HpCDD	ND		50	0.39	pg/L		12/17/12 09:33	12/18/12 23:51	1
1,2,3,4,6,7,8-HpCDF	ND		50	0.20	pg/L		12/17/12 09:33	12/18/12 23:51	1
1,2,3,4,7,8,9-HpCDF	ND		50	0.33	pg/L		12/17/12 09:33	12/18/12 23:51	1
OCDD	2.58	J	100	0.41	pg/L		12/17/12 09:33	12/18/12 23:51	1
OCDF	ND		100	0.63	pg/L		12/17/12 09:33	12/18/12 23:51	1
Total TCDD	ND		10	0.36	pg/L		12/17/12 09:33	12/18/12 23:51	1
Total TCDF	ND		10	0.45	pg/L		12/17/12 09:33	12/18/12 23:51	1
Total PeCDD	ND		50	0.56	pg/L		12/17/12 09:33	12/18/12 23:51	1
Total PeCDF	ND		50	2.2	pg/L		12/17/12 09:33	12/18/12 23:51	1
Total HxCDD	ND		50	0.26	pg/L		12/17/12 09:33	12/18/12 23:51	1
Total HxCDF	ND		50	0.99	pg/L		12/17/12 09:33	12/18/12 23:51	1
Total HpCDD	ND		50	0.39	pg/L		12/17/12 09:33	12/18/12 23:51	1
Total HpCDF	ND		50	0.33	pg/L		12/17/12 09:33	12/18/12 23:51	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C-2,3,7,8-TCDD	87		25 - 164	12/17/12 09:33	12/18/12 23:51	1
13C-2,3,7,8-TCDF	98		24 - 169	12/17/12 09:33	12/18/12 23:51	1
13C-1,2,3,7,8-PeCDD	83		25 - 181	12/17/12 09:33	12/18/12 23:51	1
13C-1,2,3,7,8-PeCDF	90		24 - 185	12/17/12 09:33	12/18/12 23:51	1
13C-2,3,4,7,8-PeCDF	94		21 - 178	12/17/12 09:33	12/18/12 23:51	1
13C-1,2,3,4,7,8-HxCDD	90		32 - 141	12/17/12 09:33	12/18/12 23:51	1
13C-1,2,3,6,7,8-HxCDD	91		28 - 130	12/17/12 09:33	12/18/12 23:51	1
13C-1,2,3,4,7,8-HxCDF	88		26 - 152	12/17/12 09:33	12/18/12 23:51	1
13C-1,2,3,6,7,8-HxCDF	97		26 - 123	12/17/12 09:33	12/18/12 23:51	1
13C-1,2,3,7,8,9-HxCDF	88		29 - 147	12/17/12 09:33	12/18/12 23:51	1
13C-2,3,4,6,7,8-HxCDF	97		28 - 136	12/17/12 09:33	12/18/12 23:51	1
13C-1,2,3,4,6,7,8-HpCDD	71		23 - 140	12/17/12 09:33	12/18/12 23:51	1
13C-1,2,3,4,6,7,8-HpCDF	86		28 - 143	12/17/12 09:33	12/18/12 23:51	1
13C-1,2,3,4,7,8,9-HpCDF	80		26 - 138	12/17/12 09:33	12/18/12 23:51	1
13C-OCDD	72		17 - 157	12/17/12 09:33	12/18/12 23:51	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
37Cl4-2,3,7,8-TCDD	110		35 - 197	12/17/12 09:33	12/18/12 23:51	1

Lab Sample ID: LCS 320-7437/2-A
Matrix: Water
Analysis Batch: 7570

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 7437

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
2,3,7,8-TCDD	200	216		pg/L		108	67 - 158
2,3,7,8-TCDF	200	191		pg/L		96	75 - 158
1,2,3,7,8-PeCDD	1000	944		pg/L		94	70 - 142
1,2,3,7,8-PeCDF	1000	1030		pg/L		103	80 - 134

TestAmerica Seattle

QC Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-7437/2-A

Matrix: Water

Analysis Batch: 7570

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 7437

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,4,7,8-PeCDF	1000	1020		pg/L		102	68 - 160
1,2,3,4,7,8-HxCDD	1000	964		pg/L		96	70 - 164
1,2,3,6,7,8-HxCDD	1000	963		pg/L		96	76 - 134
1,2,3,7,8,9-HxCDD	1000	943		pg/L		94	64 - 162
1,2,3,4,7,8-HxCDF	1000	954		pg/L		95	72 - 134
1,2,3,6,7,8-HxCDF	1000	996		pg/L		100	84 - 130
1,2,3,7,8,9-HxCDF	1000	956		pg/L		96	78 - 130
2,3,4,6,7,8-HxCDF	1000	992		pg/L		99	70 - 156
1,2,3,4,6,7,8-HpCDD	1000	993		pg/L		99	70 - 140
1,2,3,4,6,7,8-HpCDF	1000	1000		pg/L		100	82 - 122
1,2,3,4,7,8,9-HpCDF	1000	946		pg/L		95	78 - 138
OCDD	2000	2000		pg/L		100	78 - 144
OCDF	2000	1990		pg/L		100	63 - 170

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C-2,3,7,8-TCDD	78		20 - 175
13C-2,3,7,8-TCDF	88		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	74		21 - 192
13C-2,3,4,7,8-PeCDF	84		13 - 328
13C-1,2,3,4,7,8-HxCDD	91		21 - 193
13C-1,2,3,6,7,8-HxCDD	86		25 - 163
13C-1,2,3,4,7,8-HxCDF	85		19 - 202
13C-1,2,3,6,7,8-HxCDF	95		21 - 159
13C-1,2,3,7,8,9-HxCDF	86		17 - 205
13C-2,3,4,6,7,8-HxCDF	90		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	67		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	80		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	78		20 - 186
13C-OCDD	70		13 - 199

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
37Cl4-2,3,7,8-TCDD	104		35 - 197

Lab Chronicle

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-103

Lab Sample ID: 580-36242-5

Date Collected: 12/04/12 11:55

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 51.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7371	12/13/12 20:11	MG	TAL WSC

Client Sample ID: LRIS-LR-106

Lab Sample ID: 580-36242-10

Date Collected: 12/04/12 11:42

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 47.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7371	12/13/12 20:55	MG	TAL WSC
Total/NA	Analysis	1613B		1	7427	12/14/12 14:49	MG	TAL WSC
Total/NA	Analysis	1613B		20	8576	01/11/13 01:01	MG	TAL WSC

Client Sample ID: LRIS-LR-109-3

Lab Sample ID: 580-36242-16

Date Collected: 12/02/12 15:15

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 60.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7371	12/13/12 21:40	MG	TAL WSC
Total/NA	Analysis	1613B		1	7427	12/14/12 15:26	MG	TAL WSC

Client Sample ID: LRIS-LR-110-3

Lab Sample ID: 580-36242-20

Date Collected: 12/03/12 10:35

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 58.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7371	12/13/12 22:24	MG	TAL WSC
Total/NA	Analysis	1613B		1	7427	12/14/12 16:04	MG	TAL WSC
Total/NA	Analysis	1613B		20	8576	01/11/13 01:46	MG	TAL WSC

Client Sample ID: LRIS-LR-120-2

Lab Sample ID: 580-36242-27

Date Collected: 12/03/12 12:20

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 57.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7371	12/13/12 23:09	MG	TAL WSC
Total/NA	Analysis	1613B		1	7427	12/14/12 16:41	MG	TAL WSC
Total/NA	Analysis	1613B		20	8576	01/11/13 02:30	MG	TAL WSC

TestAmerica Seattle

Lab Chronicle

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-122-2

Lab Sample ID: 580-36242-31

Date Collected: 12/03/12 15:22

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 64.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7371	12/13/12 23:54	MG	TAL WSC
Total/NA	Analysis	1613B		1	7427	12/14/12 17:19	MG	TAL WSC
Total/NA	Analysis	1613B		20	8576	01/11/13 03:15	MG	TAL WSC

Client Sample ID: LRIS-LR-124-2

Lab Sample ID: 580-36242-36

Date Collected: 12/03/12 09:50

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 65.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7371	12/14/12 00:38	MG	TAL WSC
Total/NA	Analysis	1613B		1	7427	12/14/12 17:56	MG	TAL WSC
Total/NA	Analysis	1613B		20	7945	12/27/12 12:37	MG	TAL WSC

Client Sample ID: LRIS-LR-126-2

Lab Sample ID: 580-36242-43

Date Collected: 12/02/12 12:40

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 69.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7371	12/14/12 01:22	MG	TAL WSC
Total/NA	Analysis	1613B		1	7427	12/14/12 18:34	MG	TAL WSC
Total/NA	Analysis	1613B		20	8576	01/11/13 03:59	MG	TAL WSC

Client Sample ID: LRIS-LR-126

Lab Sample ID: 580-36242-47

Date Collected: 12/04/12 08:56

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 61.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7371	12/14/12 02:07	MG	TAL WSC
Total/NA	Analysis	1613B		1	7427	12/14/12 19:11	MG	TAL WSC
Total/NA	Analysis	1613B		20	7945	12/27/12 13:20	MG	TAL WSC

Client Sample ID: LRIS-LR-129-2

Lab Sample ID: 580-36242-48

Date Collected: 12/02/12 13:50

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 64.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7371	12/14/12 02:51	MG	TAL WSC

TestAmerica Seattle

Lab Chronicle

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-129-2

Lab Sample ID: 580-36242-48

Date Collected: 12/02/12 13:50

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 64.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1613B		1	7427	12/14/12 19:49	MG	TAL WSC

Client Sample ID: LRIS-LR-129

Lab Sample ID: 580-36242-52

Date Collected: 12/04/12 10:10

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 52.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7426	12/15/12 13:56	AM	TAL WSC

Client Sample ID: LRIS-LR-130-2

Lab Sample ID: 580-36242-53

Date Collected: 12/02/12 14:40

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 73.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7426	12/15/12 14:40	AM	TAL WSC

Client Sample ID: LRIS-LR-130-FD

Lab Sample ID: 580-36242-54

Date Collected: 12/02/12 14:40

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 73.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7426	12/15/12 15:25	AM	TAL WSC

Client Sample ID: LRIS-LR-130

Lab Sample ID: 580-36242-58

Date Collected: 12/04/12 10:24

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 61.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7426	12/15/12 16:09	AM	TAL WSC

Client Sample ID: LRIS-LR-130-FD-1

Lab Sample ID: 580-36242-59

Date Collected: 12/04/12 10:24

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 60.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7426	12/15/12 16:54	AM	TAL WSC

TestAmerica Seattle

Lab Chronicle

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-131-2

Lab Sample ID: 580-36242-60

Date Collected: 12/02/12 16:30

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 58.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7426	12/15/12 17:38	AM	TAL WSC
Total/NA	Analysis	1613B		1	7427	12/15/12 02:04	MG	TAL WSC

Client Sample ID: LRIS-LR-131

Lab Sample ID: 580-36242-63

Date Collected: 12/04/12 11:15

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 61.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7500	12/17/12 23:06	MG	TAL WSC

Client Sample ID: LRIS-LR-132-2

Lab Sample ID: 580-36242-64

Date Collected: 12/03/12 14:00

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 70.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7427	12/15/12 03:19	MG	TAL WSC
Total/NA	Analysis	1613B		1	7500	12/17/12 23:51	MG	TAL WSC

Client Sample ID: LRIS-LR-133-2

Lab Sample ID: 580-36242-69

Date Collected: 12/03/12 15:15

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 63.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7427	12/15/12 03:57	MG	TAL WSC
Total/NA	Analysis	1613B		1	7500	12/18/12 00:35	MG	TAL WSC

Client Sample ID: LRIS-LR-134-2

Lab Sample ID: 580-36242-74

Date Collected: 12/02/12 10:20

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 62.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7414	12/14/12 13:58	AM	TAL WSC
Total/NA	Analysis	1613B		1	7497	12/17/12 14:56	KS	TAL WSC
Total/NA	Analysis	1613B		1	7556	12/17/12 22:49	SA	TAL WSC
Total/NA	Analysis	1613B		20	8576	01/11/13 04:44	MG	TAL WSC

TestAmerica Seattle

Lab Chronicle

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Client Sample ID: LRIS-LR-137

Lab Sample ID: 580-36242-93

Date Collected: 12/04/12 09:14

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 57.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7414	12/14/12 13:58	AM	TAL WSC
Total/NA	Analysis	1613B		1	7556	12/17/12 23:32	SA	TAL WSC

Client Sample ID: LRIS-LR-RB-20121202

Lab Sample ID: 580-36242-94

Date Collected: 12/02/12 17:00

Matrix: Water

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			7437	12/17/12 09:33	CS	TAL WSC
Total/NA	Analysis	1613B		1	7570	12/19/12 05:02	MG	TAL WSC

Client Sample ID: LRIS-LR-RB-20121203

Lab Sample ID: 580-36242-95

Date Collected: 12/03/12 17:30

Matrix: Water

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			7437	12/17/12 09:33	CS	TAL WSC
Total/NA	Analysis	1613B		1	7570	12/19/12 05:47	MG	TAL WSC

Client Sample ID: LRIS-LR-RB-20121204

Lab Sample ID: 580-36242-96

Date Collected: 12/04/12 17:35

Matrix: Water

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			7437	12/17/12 09:33	CS	TAL WSC
Total/NA	Analysis	1613B		1	7570	12/19/12 06:31	MG	TAL WSC

Client Sample ID: LRIS-LR-PS-SRM

Lab Sample ID: 580-36242-97

Date Collected: 11/26/12 10:00

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			7287	12/12/12 13:29	WS	TAL WSC
Total/NA	Analysis	1613B		1	7500	12/18/12 01:20	MG	TAL WSC
Total/NA	Prep	HRMS-Sox			7414	12/14/12 13:58	AM	TAL WSC
Total/NA	Analysis	1613B		1	7556	12/18/12 00:14	SA	TAL WSC

Laboratory References:

TAL WSC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Certification Summary

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-04-13
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-13
USDA	Federal		P330-11-00222	05-20-14
Washington	State Program	10	C553	02-17-13

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-14
Alaska (UST)	State Program	10	UST-055	12-18-13
Arizona	State Program	9	AZ0708	08-11-13
Arkansas DEQ	State Program	6	88-0691	06-17-13
California	NELAP	9	1119CA	01-31-14
Colorado	State Program	8	N/A	08-31-13
Connecticut	State Program	1	PH-0691	06-30-13
Florida	NELAP	4	E87570	06-30-13
Guam	State Program	9	N/A	08-31-13
Hawaii	State Program	9	N/A	01-31-14
Illinois	NELAP	5	200060	03-17-14
Kansas	NELAP	7	E-10375	10-31-13
Louisiana	NELAP	6	30612	06-30-13
Michigan	State Program	5	9947	01-31-13
Nevada	State Program	9	CA44	07-31-13
New Jersey	NELAP	2	CA005	06-30-13
New York	NELAP	2	11666	04-01-13
Northern Mariana Islands	State Program	9	MP0007	01-31-13
Oregon	NELAP	10	CA200005	03-28-13
Pennsylvania	NELAP	3	68-01272	03-31-13
South Carolina	State Program	4	87014	06-30-13
Texas	NELAP	6	T104704399-08-TX	05-31-13
US Fish & Wildlife	Federal		LE148388-0	12-31-13
USDA	Federal		P330-11-00436	12-30-14
USEPA UCMR	Federal	1	CA00044	11-06-14
Utah	NELAP	8	QUAN1	01-31-13
Washington	State Program	10	C581	05-05-13
West Virginia	State Program	3	9930C	12-31-13
West Virginia DEP	State Program	3	334	07-31-13
Wyoming	State Program	8	8TMS-Q	01-31-14

Sample Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-36242-5	LRIS-LR-103	Solid	12/04/12 11:55	12/07/12 08:50
580-36242-10	LRIS-LR-106	Solid	12/04/12 11:42	12/07/12 08:50
580-36242-16	LRIS-LR-109-3	Solid	12/02/12 15:15	12/07/12 08:50
580-36242-20	LRIS-LR-110-3	Solid	12/03/12 10:35	12/07/12 08:50
580-36242-27	LRIS-LR-120-2	Solid	12/03/12 12:20	12/07/12 08:50
580-36242-31	LRIS-LR-122-2	Solid	12/03/12 15:22	12/07/12 08:50
580-36242-36	LRIS-LR-124-2	Solid	12/03/12 09:50	12/07/12 08:50
580-36242-43	LRIS-LR-126-2	Solid	12/02/12 12:40	12/07/12 08:50
580-36242-47	LRIS-LR-126	Solid	12/04/12 08:56	12/07/12 08:50
580-36242-48	LRIS-LR-129-2	Solid	12/02/12 13:50	12/07/12 08:50
580-36242-52	LRIS-LR-129	Solid	12/04/12 10:10	12/07/12 08:50
580-36242-53	LRIS-LR-130-2	Solid	12/02/12 14:40	12/07/12 08:50
580-36242-54	LRIS-LR-130-FD	Solid	12/02/12 14:40	12/07/12 08:50
580-36242-58	LRIS-LR-130	Solid	12/04/12 10:24	12/07/12 08:50
580-36242-59	LRIS-LR-130-FD-1	Solid	12/04/12 10:24	12/07/12 08:50
580-36242-60	LRIS-LR-131-2	Solid	12/02/12 16:30	12/07/12 08:50
580-36242-63	LRIS-LR-131	Solid	12/04/12 11:15	12/07/12 08:50
580-36242-64	LRIS-LR-132-2	Solid	12/03/12 14:00	12/07/12 08:50
580-36242-69	LRIS-LR-133-2	Solid	12/03/12 15:15	12/07/12 08:50
580-36242-74	LRIS-LR-134-2	Solid	12/02/12 10:20	12/07/12 08:50
580-36242-93	LRIS-LR-137	Solid	12/04/12 09:14	12/07/12 08:50
580-36242-94	LRIS-LR-RB-20121202	Water	12/02/12 17:00	12/07/12 08:50
580-36242-95	LRIS-LR-RB-20121203	Water	12/03/12 17:30	12/07/12 08:50
580-36242-96	LRIS-LR-RB-20121204	Water	12/04/12 17:35	12/07/12 08:50
580-36242-97	LRIS-LR-PS-SRM	Solid	11/26/12 10:00	12/07/12 08:50

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Lab: Test America
Address: 5735 8th Street E, Tacoma, WA 98424
City: Tacoma
State: WA
Zip: 98424

Project Information: Site Code: Lake River Industrial Site
Project # 9003.01.40
Site Address: 111 W. Division St
City/State: Tacoma, WA
PO #

Other Information: Send Invoice to: Laurie Olin, Madi Novak
Send EDD to: Erik Navar
CC Hardcopy to: Erik Navar, Madi Novak
CC Hardcopy to:

Lab P.M.: Pam Johnson
Phone/Fax: /
PM email: /
Lab Quote #:

City: / State: / Zip: /
Send EDD to: Erik Navar
CC Hardcopy to: Erik Navar, Madi Novak
CC Hardcopy to:

ITEM #	Field Sample No. / Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis		Preservative		Lab Notes
							ARCHIVE	1613B - Dioxin/Furan	Total Organic Carbon - COE 9060		
1	LRS-LR-103-2	SUB_S O-SED	C	12/03/2012 13:30	3		X				
2	LRS-LR-103-3	SUB_S O-SED	C	12/03/2012 13:35	3		X				
3	LRS-LR-103-4	SUB_S O-SED	C	12/03/2012 13:40	3		X				
4	LRS-LR-103-5	SUB_S O-SED	C	12/03/2012 13:45	3		X				
5	LRS-LR-103	SOIL-SED	G	12/04/2012 11:55	3		X	X			
6	LRS-LR-106-2	SUB_S O-SED	G	12/02/2012 17:25	3		X				
7	LRS-LR-106-3	SUB_S O-SED	C	12/02/2012 17:30	3		X				
8	LRS-LR-106-4	SUB_S O-SED	C	12/02/2012 17:35	3		X				
9	LRS-LR-106-5	SUB_S O-SED	C	12/02/2012 17:40	3		X				
10	LRS-LR-106	SOIL-SED	C	12/04/2012 11:42	3		X	X			
11	LRS-LR-108-2	SUB_S O-SED	C	12/03/2012 11:20	3		X				

Additional Comments/Special Instructions:

REINQUISHED BY / AFFILIATION: Erik Navar / MFA
DATE: 12/3/12
TIME: 08:50

ACCEPTED BY / AFFILIATION: Erik Navar / MFA
DATE: 12/3/12
TIME: 08:50

Company: / Tracking #: / DATE/TIME: / Temp in OC: / Samples on Ice?: / Sample intact?: / Trip Blank?:

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information:			Project Information:			Other Information:		
Lab:	Unknown Laboratory	Site Code:	Lake River Industrial Site	Address:		Send Invoice to:		
Address:		Project #:		City/State:		City/State:		Phone #:
Lab P.M.:		City:	State, Zip:	PO #:		Send EDD to:		
Phone/Fax:	/	P.M. Name:		CC Hardcopy to:		CC Hardcopy to:		
P.M. email:		Phone/Fax:		CC Hardcopy to:				
Lab Quote #:		P.M. Email:						

ITEM #	Field Sample No. / Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush
12	LRS-LR-108-3	SUB_S O-SED	C	12/03/2012 11:25	3		X		Archive		
13	LRS-LR-108-4	SUB_S O-SED	C	12/03/2012 11:30	3		X		1613B - Dioxin/Furan		
14	LRS-LR-108-5	SUB_S O-SED	C	12/03/2012 11:35	3		X		Total Organic Carbon - COE 9060		
15	LRS-LR-109-2	SUB_S O-SED	C	12/02/2012 15:10	3		X				
16	LRS-LR-109-3	SUB_S O-SED	G	12/02/2012 15:15	3		X				
17	LRS-LR-109-4	SUB_S O-SED	G	12/02/2012 15:20	3		X				
18	LRS-LR-109-5	SUB_S O-SED	C	12/02/2012 15:25	3		X				
19	LRS-LR-110-2	SUB_S O-SED	C	12/03/2012 10:30	3		X				
20	LRS-LR-110-3	SUB_S O-SED	C	12/03/2012 10:35	3		X				
21	LRS-LR-110-4	SUB_S O-SED	C	12/03/2012 10:40	3		X				
22	LRS-LR-110-5	SUB_S O-SED	C	12/03/2012 10:45	3		X				

Task: Total # of Samples: 97
2012_LR_SED
Event Complete?

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: **Task:** TAT Total # of Samples: 97 2012_LR_SED Event Complete?

Address:	Site Code:	Lake River Industrial Site	Send Invoice to:	
Project #	Site Address	City/State:	City/State:	Phone #:
Lab PIV:	City:	State, Zip	PO #	
Phone/Fax: /	PIV Name	Send EDD to	CC Hardcopy to	
PIV email	Phone/Fax:	CC Hardcopy to	CC Hardcopy to	
Lab Quote #:	PIV Email:			

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush
23	LRS-LR-119-2	SUB_S O-SED	C	12/03/2012 14:30	3		Archive			X	
24	LRS-LR-119-3	SUB_S O-SED	C	12/03/2012 14:35	3		1613B - Dioxin/Furan			X	
25	LRS-LR-119-4	SUB_S O-SED	C	12/03/2012 14:40	3		Total Organic Carbon - COE 9060			X	
26	LRS-LR-119-5	SUB_S O-SED	C	12/03/2012 14:45	3					X	
27	LRS-LR-120-2	SUB_S O-SED	G	12/03/2012 12:20	3					X	
28	LRS-LR-120-3	SUB_S O-SED	G	12/03/2012 12:25	3					X	
29	LRS-LR-120-4	SUB_S O-SED	C	12/03/2012 12:30	3					X	
30	LRS-LR-120-5	SUB_S O-SED	C	12/03/2012 12:35	3					X	
31	LRS-LR-122-2	SUB_S O-SED	C	12/03/2012 15:22	3					X	
32	LRS-LR-122-3	SUB_S O-SED	C	12/03/2012 15:22	3					X	
33	LRS-LR-122-4	SUB_S O-SED	C	12/03/2012 15:22	3					X	

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Project Information: Other Information:

Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Address:	City/State:	Phone #:
Address:	Project #	Site Address	City/State:	Phone #:
Lab PIV:	City:	State, Zip	PO #	
Phone/Fax:	PIV Name	Send EDD to	CC Hardcopy to	
PIV email	Phone/Fax:	CC Hardcopy to	CC Hardcopy to	
Lab Quote #:	PIV Email:			

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Notes: F= Field Filtered , H= Hold	Rush	Event Complete?
34	LRS-LR-122-5	SUB_S O-SED	C	12/03/2012 15:22	3		X		Archive				
35	LRS-LR-122	SUB_S O-SED	C	12/04/2012 11:27	3		X		1613B - Dioxin/Furan				
36	LRS-LR-124-2	SUB_S O-SED	C	12/03/2012 09:50	3		X		Total Organic Carbon - COE 9060				
37	LRS-LR-124-3	SUB_S O-SED	C	12/03/2012 10:00	3		X						
38	LRS-LR-124-4	SUB_S O-SED	G	12/03/2012 10:05	3		X						
39	LRS-LR-124-5	SUB_S O-SED	G	12/03/2012 10:10	3		X						
40	LRS-LR-125-2	SUB_S O-SED	C	12/02/2012 13:10	3		X						
41	LRS-LR-125-3	SUB_S O-SED	C	12/02/2012 13:15	3		X						
42	LRS-LR-125-4	SUB_S O-SED	C	12/02/2012 13:20	3		X						
43	LRS-LR-126-2	SUB_S O-SED	C	12/02/2012 12:40	3		X						
44	LRS-LR-126-3	SUB_S O-SED	C	12/02/2012 12:45	3		X						

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

36242

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to:

Lab:	Unknown Laboratory	Site Code:	Lake River Industrial Site	Send Invoice to:	
Address:		Project #:		City/State:	
		Site Address:		PO #:	
Lab PM:		City:		State, Zip:	
Phone/Fax: /		PM Name:		Send EDD to:	
PM email:		Phone/Fax:		CC Hardcopy to:	
Lab Quote #:		PM Email:		CC Hardcopy to:	

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Notes: F= Field Filtered, H= Hold	Rush
46	LRS-LR-126-4	SUB_S O-SED	C	12/02/2012 12:47	3		Archive			X		
46	LRS-LR-126-5	SUB_S O-SED	C	12/02/2012 12:50	3		1613B - Dioxin/Furan			X		
46	LRS-LR-126	SOIL- SED	C	12/04/2012 08:56	3		Total Organic Carbon - COE 9060			X		
47	LRS-LR-129-2	SUB_S O-SED	C	12/02/2012 13:50	3					X		
48	LRS-LR-129-3	SUB_S O-SED	G	12/02/2012 13:55	3					X		
48	LRS-LR-129-4	SUB_S O-SED	G	12/02/2012 14:00	3					X		
49	LRS-LR-129-5	SUB_S O-SED	C	12/02/2012 14:05	3					X		
51	LRS-LR-129	SOIL- SED	C	12/04/2012 10:10	3					X		
52	LRS-LR-130-2	SUB_S O-SED	C	12/02/2012 14:40	3					X		
53	LRS-LR-130-FD	QAQC		12/02/2012 14:40	3					X		
54	LRS-LR-130-3	SUB_S O-SED		12/02/2012 14:45	3					X		

Task:	2012_LR_SED
Total # of Samples:	97
Event Complete?	

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: **Task:** TAT Total # of Samples: 97 2012_LR_SED Event Complete?

Address: Site Code: Lake River Industrial Site Address: Send Invoice to: City/State: Phone #:

Site Address: City: State: Zip: PO #:

Lab P.M.: P.M. Name: Send EDD to: Preservative: Lab Notes:

Phone/Fax: / Phone/Fax: CC Hardcopy to: TAT Notes: F=Field Filtered, H=Hold Rush

PM email: PM Email: CC Hardcopy to:

Lab Quote #:

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Archive	1613B - Dioxin/Furan	Total Organic Carbon - COE 9060						
56	LRS-LR-130-4	SUB_S O-SED	C	12/02/2012 14:50	3		X	X								
57	LRS-LR-130-5	SUB_S O-SED	C	12/02/2012 14:55	3		X	X								
58	LRS-LR-130	SOIL-SED	C	12/04/2012 10:24	3		X	X								
59	LRS-LR-130-FD-1	QAQC	C	12/04/2012 10:24	3		X	X								
60	LRS-LR-131-2	SUB_S O-SED	G	12/02/2012 16:30	3		X	X								
61	LRS-LR-131-3	SUB_S O-SED	G	12/02/2012 16:35	3		X	X								
62	LRS-LR-131-4	SUB_S O-SED	C	12/02/2012 16:40	3		X	X								
63	LRS-LR-131	SOIL-SED	C	12/04/2012 11:15	3		X	X								
64	LRS-LR-132-2	SUB_S O-SED	C	12/03/2012 14:00	3		X	X								
65	LRS-LR-132-3	SUB_S O-SED	C	12/03/2012 14:05	3		X	X								
66	LRS-LR-132-4	SUB_S O-SED	C	12/03/2012 14:10	3		X	X								

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information:		Project Information:			Other Information:								
Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Address:	Send Invoice to:	City/State:	Phone #:								
Address:	Project #:	Site Address:	City/State:	City/State:	Phone #:								
Lab PVI:	City:	State:	Zip:	PO #:									
Phone/Fax:	PVI Name:	Send EDD to:											
PVI Email:	Phone/Fax:	CC Hardcopy to:											
Lab Quote #:	PVI Email:	CC Hardcopy to:											
ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	Task:	Total # of Samples: 97	2012_LR_SED	Event Complete?
67	LRS-LR-132-5	SUB_S O-SED	C	12/03/2012 14:15	3		Archive	X					
68	LRS-LR-132	SUB_S O-SED	C	12/04/2012 12:06	3		Archive	X					
69	LRS-LR-133-2	SUB_S O-SED	C	12/03/2012 15:15	3		Archive	X					
70	LRS-LR-133-3	SUB_S O-SED	C	12/03/2012 15:20	3		Archive	X					
71	LRS-LR-133-4	SUB_S O-SED	G	12/03/2012 15:25	3		Archive	X					
72	LRS-LR-133-5	SUB_S O-SED	G	12/03/2012 15:30	3		Archive	X					
73	LRS-LR-133	SUB_S O-SED	C	12/04/2012 12:49	3		Archive	X					
74	LRS-LR-134-2	SUB_S O-SED	C	12/02/2012 10:20	3		Archive	X					
75	LRS-LR-134-3	SUB_S O-SED	C	12/02/2012 10:28	3		Archive	X					
76	LRS-LR-134-4	SUB_S O-SED	C	12/02/2012 10:30	3		Archive	X					
77	LRS-LR-134-5	SUB_S O-SED	C	12/02/2012 10:35	3		Archive	X					

Notes: F= Field Filtered , H= Hold	Rush	
Task:	2012_LR_SED	Event Complete?

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: **Project Information:** **Other Information:**

Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Send Invoice to:	Address:	City/State:	Phone #:
Address:	Project #	Site Address:	City/State:	PO #:	Send EDD to
Lab PIV:	City:	State, Zip:	City/State:	PO #:	Send EDD to
Phone/Fax: /	PIV Name:		City/State:	CC Hardcopy to	CC Hardcopy to
PIV email:	PIV Email:		City/State:	CC Hardcopy to	CC Hardcopy to
Lab Quote #:					

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush	Event Complete?
78	LRS-LR-134	SOIL-SED	C	12/04/2012 13:10	3		Archive					
79	LRS-LR-135-2	SUB_S O-SED	C	12/03/2012 15:45	3		1613B - Dioxin/Furan					
80	LRS-LR-135-3	SUB_S O-SED	C	12/03/2012 15:50	3		Total Organic Carbon - COE 9060					
81	LRS-LR-135-4	SUB_S O-SED	C	12/03/2012 15:55	3							
82	LRS-LR-135-5	SUB_S O-SED	G	12/03/2012 16:00	3							
83	LRS-LR-135	SOIL-SED	G	12/04/2012 13:01	3							
84	LRS-LR-136-2	SUB_S O-SED	C	12/02/2012 16:50	3							
85	LRS-LR-136-3	SUB_S O-SED	C	12/02/2012 16:55	3							
86	LRS-LR-136-4	SUB_S O-SED	C	12/02/2012 17:00	3							
87	LRS-LR-136-5	SUB_S O-SED	C	12/02/2012 17:05	3							
88	LRS-LR-136	SOIL-SED	C	12/04/2012 10:39	3							

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

362242

Lab Information: **Project Information:** **Other Information:**

Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Send Invoice to:	Address:	City/State:	Phone #:
Address:	Project #:	City/State:	City/State:	City/State:	Phone #:
Site Address:	City:	State, Zip:	PO #:	Send EDD to:	
Lab P.M.:	City:	State, Zip:	Send EDD to:	CC Hardcopy to:	
Phone/Fax: /	PM Name:		CC Hardcopy to:	CC Hardcopy to:	
PM Email:	Phone/Fax:		CC Hardcopy to:	CC Hardcopy to:	
Lab Quote #:	PM Email:		CC Hardcopy to:	CC Hardcopy to:	

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush	Event Complete?
88	LRS-LR-137-2	SUB_S O-SED	C	12/02/2012 12:10	3		Archive	X				
89	LRS-LR-137-3	SUB_S O-SED	C	12/02/2012 12:15	3		1613B - Dioxin/Furan	X				
90	LRS-LR-137-4	SUB_S O-SED	C	12/02/2012 12:17	3		Total Organic Carbon - COE 9060	X				
91	LRS-LR-137-5	SUB_S O-SED	C	12/02/2012 12:20	3			X				
92	LRS-LR-137	SOIL-SED	G	12/04/2012 09:14	3			X				
93	LRS-LR-RB-20121202	QAQC	G	12/02/2012 17:00	2			X				
94	LRS-LR-RB-20121203	QAQC	C	12/03/2012 17:30	2			X				
95	LRS-LR-RB-20121204	QAQC	C	12/04/2012 17:35	1			X				
96	LRS-LR-PS-SRM	SOIL-SED	C	11/26/2012 10:00	2			X				
97												

Task: Total # of Samples: 97 2012_LR_SED Event Complete?

Notes: F= Field Filtered , H= Hold

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-2

Login Number: 36242

List Number: 1

Creator: Riley, Nicole

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Not requested on COC.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-2

Login Number: 36242

List Number: 1

Creator: Mantri, Anil

List Source: TestAmerica Sacramento

List Creation: 12/11/12 01:42 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	-0.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	False	Received extra samples not listed on COC.# 94 & 95
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-2

Login Number: 36242

List Number: 2

Creator: Cortes, Cesar C

List Source: TestAmerica Sacramento

List Creation: 01/10/13 02:54 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-2

Login Number: 36242

List Number: 3

Creator: Tecson, Jeffrey

List Source: TestAmerica Sacramento

List Creation: 01/16/13 11:09 AM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	622805, 622806
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	545176167352
Cooler Temperature is acceptable.	True	0.8
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-2

Login Number: 36242

List Number: 4

Creator: Tecson, Jeffrey

List Source: TestAmerica Sacramento

List Creation: 01/17/13 01:52 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	622807
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	0.4
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Isotope Dilution Summary

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF1 (24-185)	PeCDF2 (21-178)	HxCDD1 (32-141)	HxCDD2 (28-130)	HxCDF1 (26-152)
580-36242-5	LRIS-LR-103	66	78	62	61	65	62	57	66
580-36242-10	LRIS-LR-106	62	73	59	59	61	60	55	64
580-36242-10	LRIS-LR-106	56	58						
580-36242-10	LRIS-LR-106								
580-36242-16	LRIS-LR-109-3	80	96	77	76	80	76	78	85
580-36242-16	LRIS-LR-109-3	71	72						
580-36242-20	LRIS-LR-110-3	88	107	87	90	89	90	89	101
580-36242-20	LRIS-LR-110-3	81	80						
580-36242-20	LRIS-LR-110-3								
580-36242-27	LRIS-LR-120-2	71	84	64	66	69	63	62	72
580-36242-27	LRIS-LR-120-2	65	66						
580-36242-27	LRIS-LR-120-2								
580-36242-31	LRIS-LR-122-2	90	109	90	87	93	88	89	101
580-36242-31	LRIS-LR-122-2	82	83						
580-36242-31	LRIS-LR-122-2								
580-36242-36	LRIS-LR-124-2	66	79	63	63	66	62	59	70
580-36242-36	LRIS-LR-124-2	60	62						
580-36242-36	LRIS-LR-124-2								
580-36242-43	LRIS-LR-126-2	70	83	67	67	70	71	59	73
580-36242-43	LRIS-LR-126-2	63	63						
580-36242-43	LRIS-LR-126-2								
580-36242-47	LRIS-LR-126	80	96	76	76	79	74	75	85
580-36242-47	LRIS-LR-126	69	73						
580-36242-47	LRIS-LR-126								
580-36242-48	LRIS-LR-129-2	72	86	71	69	73	73	67	77
580-36242-48	LRIS-LR-129-2	64	64						
580-36242-52	LRIS-LR-129	81	98	75	79	81	70	74	79
580-36242-53	LRIS-LR-130-2	87	102	80	84	87	73	80	87
580-36242-54	LRIS-LR-130-FD	94	109	88	93	90	84	93	102
580-36242-58	LRIS-LR-130	92	109	80	89	93	79	76	89
580-36242-59	LRIS-LR-130-FD-1	88	105	84	90	92	80	85	92
580-36242-60	LRIS-LR-131-2	84	99	81	84	84	81	83	93
580-36242-60	LRIS-LR-131-2	75	77						
580-36242-63	LRIS-LR-131	81	99	71	78	76	69	66	70
580-36242-64	LRIS-LR-132-2	89	106	83	89	82	83	95	91
580-36242-69	LRIS-LR-133-2	70	72						
580-36242-69	LRIS-LR-133-2	78	93	75	75	79	79	71	75
580-36242-74	LRIS-LR-134-2		70						
580-36242-74	LRIS-LR-134-2	71	89	63	71	75	71	73	83
580-36242-74	LRIS-LR-134-2								
580-36242-93	LRIS-LR-137	63	80	55	61	65	56	56	68
580-36242-97	LRIS-LR-PS-SRM	88	104	84	89	89	88	90	95
580-36242-97	LRIS-LR-PS-SRM	67	86	62	70	73	75	77	94
MB 320-7287/1-A	Method Blank	79	93	79	77	78	79	76	86
MB 320-7414/1-A	Method Blank	76	95	71	78	82	73	79	92

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxCDF2 (26-123)	HxCDF4 (29-147)	HxCDF3 (28-136)	HpCDD (23-140)	HpCDF1 (28-143)	HpCDF2 (26-138)	OCDD (17-157)	HxCDF1 (26-152)
580-36242-5	LRIS-LR-103	69	69	68	50	57	62	59	66

TestAmerica Seattle

Isotope Dilution Summary

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxCDF2 (26-123)	HxCDF4 (29-147)	HxCDF3 (28-136)	HpCDD (23-140)	HpCDF1 (28-143)	HpCDF2 (26-138)	OCDD (17-157)	HxCDF1 (26-152)
580-36242-10	LRIS-LR-106	68	69	66	49	54	61	57	64
580-36242-10	LRIS-LR-106							46	
580-36242-10	LRIS-LR-106							46	
580-36242-16	LRIS-LR-109-3	92	90	92	70	81	86	86	85
580-36242-16	LRIS-LR-109-3								
580-36242-20	LRIS-LR-110-3	101	101	101	82	89	97	106	101
580-36242-20	LRIS-LR-110-3								
580-36242-20	LRIS-LR-110-3				74			73	
580-36242-27	LRIS-LR-120-2	70	76	73	54	58	67	65	72
580-36242-27	LRIS-LR-120-2								
580-36242-27	LRIS-LR-120-2							43	
580-36242-31	LRIS-LR-122-2	101	102	102	78	88	96	101	101
580-36242-31	LRIS-LR-122-2								
580-36242-31	LRIS-LR-122-2				72			72	
580-36242-36	LRIS-LR-124-2	67	72	67	52	56	63	66	70
580-36242-36	LRIS-LR-124-2								
580-36242-36	LRIS-LR-124-2				72			60	
580-36242-43	LRIS-LR-126-2	74	77	74	55	60	69	64	73
580-36242-43	LRIS-LR-126-2								
580-36242-43	LRIS-LR-126-2							40	
580-36242-47	LRIS-LR-126	86	90	85	68	69	82	83	85
580-36242-47	LRIS-LR-126								
580-36242-47	LRIS-LR-126				85			68	
580-36242-48	LRIS-LR-129-2	82	81	81	63	71	76	73	77
580-36242-48	LRIS-LR-129-2								
580-36242-52	LRIS-LR-129	83	85	82	62	71	81	72	79
580-36242-53	LRIS-LR-130-2	91	92	89	66	76	87	72	87
580-36242-54	LRIS-LR-130-FD	105	104	105	77	92	105	95	102
580-36242-58	LRIS-LR-130	90	97	90	64	72	90	68	89
580-36242-59	LRIS-LR-130-FD-1	96	97	97	69	82	91	75	92
580-36242-60	LRIS-LR-131-2	98	102	97	75	89	97	87	93
580-36242-60	LRIS-LR-131-2								
580-36242-63	LRIS-LR-131	79	73	72	52	61	66	51	70
580-36242-64	LRIS-LR-132-2	106	95	100	77	91	95	79	91
580-36242-69	LRIS-LR-133-2								
580-36242-69	LRIS-LR-133-2	84	79	83	58	71	72	58	75
580-36242-74	LRIS-LR-134-2								
580-36242-74	LRIS-LR-134-2	87	83	87	74	85	89	84	83
580-36242-74	LRIS-LR-134-2							41	
580-36242-93	LRIS-LR-137	68	70	66	56	60	72	49	68
580-36242-97	LRIS-LR-PS-SRM	100	93	98	75	91	88	77	95
580-36242-97	LRIS-LR-PS-SRM	95	82	93	83	98	98	82	94
MB 320-7287/1-A	Method Blank	95	88	94	69	82	82	82	86
MB 320-7414/1-A	Method Blank	97	87	91	85	99	98	86	92

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxCDF2 (21-159)	HxCDF2 (26-123)	HxCDF4 (17-205)	HxCDF4 (29-147)	HxCDF3 (22-176)	HxCDF3 (28-136)	HpCDD (23-140)	HpCDD (26-166)
580-36242-5	LRIS-LR-103		69		69		68	50	
580-36242-10	LRIS-LR-106		68		69		66	49	

TestAmerica Seattle

Isotope Dilution Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)						HpCDD (23-140)	HpCDD (26-166)
		HxCDF2 (21-159)	HxCDF2 (26-123)	HxCDF4 (17-205)	HxCDF4 (29-147)	HxCDF3 (22-176)	HxCDF3 (28-136)		
580-36242-10	LRIS-LR-106								
580-36242-10	LRIS-LR-106								
580-36242-16	LRIS-LR-109-3		92		90		92	70	
580-36242-16	LRIS-LR-109-3								
580-36242-20	LRIS-LR-110-3		101		101		101	82	
580-36242-20	LRIS-LR-110-3							74	
580-36242-20	LRIS-LR-110-3								
580-36242-27	LRIS-LR-120-2		70		76		73	54	
580-36242-27	LRIS-LR-120-2								
580-36242-27	LRIS-LR-120-2								
580-36242-31	LRIS-LR-122-2		101		102		102	78	
580-36242-31	LRIS-LR-122-2							72	
580-36242-31	LRIS-LR-122-2								
580-36242-36	LRIS-LR-124-2		67		72		67	52	
580-36242-36	LRIS-LR-124-2							72	
580-36242-36	LRIS-LR-124-2								
580-36242-43	LRIS-LR-126-2		74		77		74	55	
580-36242-43	LRIS-LR-126-2								
580-36242-43	LRIS-LR-126-2								
580-36242-47	LRIS-LR-126		86		90		85	68	
580-36242-47	LRIS-LR-126							85	
580-36242-47	LRIS-LR-126								
580-36242-48	LRIS-LR-129-2		82		81		81	63	
580-36242-48	LRIS-LR-129-2								
580-36242-52	LRIS-LR-129		83		85		82	62	
580-36242-53	LRIS-LR-130-2		91		92		89	66	
580-36242-54	LRIS-LR-130-FD		105		104		105	77	
580-36242-58	LRIS-LR-130		90		97		90	64	
580-36242-59	LRIS-LR-130-FD-1		96		97		97	69	
580-36242-60	LRIS-LR-131-2		98		102		97	75	
580-36242-60	LRIS-LR-131-2								
580-36242-63	LRIS-LR-131		79		73		72	52	
580-36242-64	LRIS-LR-132-2		106		95		100	77	
580-36242-69	LRIS-LR-133-2								
580-36242-69	LRIS-LR-133-2		84		79		83	58	
580-36242-74	LRIS-LR-134-2								
580-36242-74	LRIS-LR-134-2		87		83		87	74	
580-36242-74	LRIS-LR-134-2								
580-36242-93	LRIS-LR-137		68		70		66	56	
580-36242-97	LRIS-LR-PS-SRM		100		93		98	75	
580-36242-97	LRIS-LR-PS-SRM		95		82		93	83	
MB 320-7287/1-A	Method Blank		95		88		94	69	
MB 320-7414/1-A	Method Blank		97		87		91	85	

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)				OCDD (13-199)	OCDD (17-157)
		HpCDF1 (21-158)	HpCDF1 (28-143)	HpCDF2 (20-186)	HpCDF2 (26-138)		
580-36242-5	LRIS-LR-103		57		62		59
580-36242-10	LRIS-LR-106		54		61		57
580-36242-10	LRIS-LR-106						

TestAmerica Seattle

Isotope Dilution Summary

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		HpCDF1 (21-158)	HpCDF1 (28-143)	HpCDF2 (20-186)	HpCDF2 (26-138)	OCDD (13-199)	OCDD (17-157)
580-36242-10	LRIS-LR-106						46
580-36242-16	LRIS-LR-109-3		81		86		86
580-36242-16	LRIS-LR-109-3						
580-36242-20	LRIS-LR-110-3		89		97		106
580-36242-20	LRIS-LR-110-3						
580-36242-20	LRIS-LR-110-3						73
580-36242-27	LRIS-LR-120-2		58		67		65
580-36242-27	LRIS-LR-120-2						
580-36242-27	LRIS-LR-120-2						43
580-36242-31	LRIS-LR-122-2		88		96		101
580-36242-31	LRIS-LR-122-2						
580-36242-31	LRIS-LR-122-2						72
580-36242-36	LRIS-LR-124-2		56		63		66
580-36242-36	LRIS-LR-124-2						
580-36242-36	LRIS-LR-124-2						60
580-36242-43	LRIS-LR-126-2		60		69		64
580-36242-43	LRIS-LR-126-2						
580-36242-43	LRIS-LR-126-2						40
580-36242-47	LRIS-LR-126		69		82		83
580-36242-47	LRIS-LR-126						
580-36242-47	LRIS-LR-126						68
580-36242-48	LRIS-LR-129-2		71		76		73
580-36242-48	LRIS-LR-129-2						
580-36242-52	LRIS-LR-129		71		81		72
580-36242-53	LRIS-LR-130-2		76		87		72
580-36242-54	LRIS-LR-130-FD		92		105		95
580-36242-58	LRIS-LR-130		72		90		68
580-36242-59	LRIS-LR-130-FD-1		82		91		75
580-36242-60	LRIS-LR-131-2		89		97		87
580-36242-60	LRIS-LR-131-2						
580-36242-63	LRIS-LR-131		61		66		51
580-36242-64	LRIS-LR-132-2		91		95		79
580-36242-69	LRIS-LR-133-2						
580-36242-69	LRIS-LR-133-2		71		72		58
580-36242-74	LRIS-LR-134-2						
580-36242-74	LRIS-LR-134-2		85		89		84
580-36242-74	LRIS-LR-134-2						41
580-36242-93	LRIS-LR-137		60		72		49
580-36242-97	LRIS-LR-PS-SRM		91		88		77
580-36242-97	LRIS-LR-PS-SRM		98		98		82
MB 320-7287/1-A	Method Blank		82		82		82
MB 320-7414/1-A	Method Blank		99		98		86

Surrogate Legend

- TCDD = 13C-2,3,7,8-TCDD
- TCDF = 13C-2,3,7,8-TCDF
- PeCDD = 13C-1,2,3,7,8-PeCDD
- PeCDF1 = 13C-1,2,3,7,8-PeCDF
- PeCDF2 = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

HxCDD1 = 13C-1,2,3,4,7,8-HxCDD
 HxCDD2 = 13C-1,2,3,6,7,8-HxCDD
 HxCDF1 = 13C-1,2,3,4,7,8-HxCDF
 HxCDF2 = 13C-1,2,3,6,7,8-HxCDF
 HxCDF4 = 13C-1,2,3,7,8,9-HxCDF
 HxCDF3 = 13C-2,3,4,6,7,8-HxCDF
 HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
 HpCDF1 = 13C-1,2,3,4,6,7,8-HpCDF
 HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
 OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF1 (21-192)	PeCDF2 (13-328)	HxCDD1 (21-193)	HxCDD2 (25-163)	HxCDF1 (19-202)
LCS 320-7287/2-A	Lab Control Sample	78	91	78	76	79	83	76	88
LCS 320-7414/2-A	Lab Control Sample	66	83	59	66	70	70	70	80

		Percent Isotope Dilution Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	HxCDF2 (21-159)	HxCDF4 (17-205)	HxCDF3 (22-176)	HpCDD (26-166)	HpCDF1 (21-158)	HpCDF2 (20-186)	OCDD (13-199)
LCS 320-7287/2-A	Lab Control Sample	94	91	93	72	85	84	85
LCS 320-7414/2-A	Lab Control Sample	83	82	83	75	88	89	79

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
 TCDF = 13C-2,3,7,8-TCDF
 PeCDD = 13C-1,2,3,7,8-PeCDD
 PeCDF1 = 13C-1,2,3,7,8-PeCDF
 PeCDF2 = 13C-2,3,4,7,8-PeCDF
 HxCDD1 = 13C-1,2,3,4,7,8-HxCDD
 HxCDD2 = 13C-1,2,3,6,7,8-HxCDD
 HxCDF1 = 13C-1,2,3,4,7,8-HxCDF
 HxCDF2 = 13C-1,2,3,6,7,8-HxCDF
 HxCDF4 = 13C-1,2,3,7,8,9-HxCDF
 HxCDF3 = 13C-2,3,4,6,7,8-HxCDF
 HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
 HpCDF1 = 13C-1,2,3,4,6,7,8-HpCDF
 HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
 OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF1 (24-185)	PeCDF2 (21-178)	HxCDD1 (32-141)	HxCDD2 (28-130)	HxCDF1 (26-152)
580-36242-94	LRIS-LR-RB-20121202	75	86	76	78	82	79	83	80
580-36242-95	LRIS-LR-RB-20121203	80	91	77	82	82	92	80	87
580-36242-96	LRIS-LR-RB-20121204	65	74	66	63	70	71	74	75
MB 320-7437/1-A	Method Blank	87	98	83	90	94	90	91	88

TestAmerica Seattle

Isotope Dilution Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)						
		HxCDF2 (26-123)	HxCDF4 (29-147)	HxCDF3 (28-136)	HpCDD (23-140)	HpCDF1 (28-143)	HpCDF2 (26-138)	OCDD (17-157)
580-36242-94	LRIS-LR-RB-20121202	87	80	86	65	75	76	68
580-36242-95	LRIS-LR-RB-20121203	94	86	93	67	82	76	68
580-36242-96	LRIS-LR-RB-20121204	76	74	76	57	66	64	59
MB 320-7437/1-A	Method Blank	97	88	97	71	86	80	72

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
 TCDF = 13C-2,3,7,8-TCDF
 PeCDD = 13C-1,2,3,7,8-PeCDD
 PeCDF1 = 13C-1,2,3,7,8-PeCDF
 PeCDF2 = 13C-2,3,4,7,8-PeCDF
 HxCDD1 = 13C-1,2,3,4,7,8-HxCDD
 HxCDD2 = 13C-1,2,3,6,7,8-HxCDD
 HxCDF1 = 13C-1,2,3,4,7,8-HxCDF
 HxCDF2 = 13C-1,2,3,6,7,8-HxCDF
 HxCDF4 = 13C-1,2,3,7,8,9-HxCDF
 HxCDF3 = 13C-2,3,4,6,7,8-HxCDF
 HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
 HpCDF1 = 13C-1,2,3,4,6,7,8-HpCDF
 HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
 OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF1 (21-192)	PeCDF2 (13-328)	HxCDD1 (21-193)	HxCDD2 (25-163)	HxCDF1 (19-202)
LCS 320-7437/2-A	Lab Control Sample	78	88	78	74	84	91	86	85

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)						
		HxCDF2 (21-159)	HxCDF4 (17-205)	HxCDF3 (22-176)	HpCDD (26-166)	HpCDF1 (21-158)	HpCDF2 (20-186)	OCDD (13-199)
LCS 320-7437/2-A	Lab Control Sample	95	86	90	67	80	78	70

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
 TCDF = 13C-2,3,7,8-TCDF
 PeCDD = 13C-1,2,3,7,8-PeCDD
 PeCDF1 = 13C-1,2,3,7,8-PeCDF
 PeCDF2 = 13C-2,3,4,7,8-PeCDF
 HxCDD1 = 13C-1,2,3,4,7,8-HxCDD
 HxCDD2 = 13C-1,2,3,6,7,8-HxCDD
 HxCDF1 = 13C-1,2,3,4,7,8-HxCDF
 HxCDF2 = 13C-1,2,3,6,7,8-HxCDF
 HxCDF4 = 13C-1,2,3,7,8,9-HxCDF
 HxCDF3 = 13C-2,3,4,6,7,8-HxCDF
 HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
 HpCDF1 = 13C-1,2,3,4,6,7,8-HpCDF
 HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
 OCDD = 13C-OCDD

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THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-36242-3

Client Project/Site: Port of Ridgefield
Revision: 1

For:

Maul Foster & Alongi Inc
2001 NW 19th Avenue, Suite 200
Portland, Oregon 97239

Attn: Ms. Madi Novak

Pamela R. Johnson

Authorized for release by:
4/25/2013 12:07:27 PM

Pam Johnson
Project Manager I
pamr.johnson@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Job ID: 580-36242-3

Laboratory: TestAmerica Seattle

Narrative

Comments

No additional comments.

Receipt

The samples were received on 12/7/2012 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 8 coolers at receipt time were 2.6° C, 2.9° C, 3.4° C, 4.3° C, 4.5° C, 4.6° C, 5.9° C and 6.0° C.

Except:

Sample was received broken. The sample was transferred into a new container: LRIS-LR-132 (580-36242-68).

The container label for the following sample LRIS-LR-134 (580-36242-78) did not match the information listed on the Chain-of-Custody (COC). LRIS-LR-134 has a time of 13:19 on the label. The sample was logged in according to the Chain-of-Custody (COC).

Dioxin - Method 1613B

The following samples LRIS-LR-108-3 (580-36242-12), LRIS-LR-119-2 (580-36242-23), LRIS-LR-122 (580-36242-35), LRIS-LR-125-2 (580-36242-40), LRIS-LR-134 (580-36242-78) were diluted due to the nature of the sample matrix. Elevated reporting limits (RLs) are provided for OCDD.

The following samples LRIS-LR-122 (580-36242-35), LRIS-LR-125-2 (580-36242-40) were diluted due to the nature of the sample matrix. Elevated reporting limits (RLs) are provided for HpCDD.

Ion abundance ratios are outside criteria for the following samples LRIS-LR-103-2 (580-36242-1), LRIS-LR-106-2 (580-36242-6), LRIS-LR-108-3 (580-36242-12), LRIS-LR-119-2 (580-36242-23), LRIS-LR-122 (580-36242-35), LRIS-LR-125-2 (580-36242-40), LRIS-LR-132 (580-36242-68), LRIS-LR-133 (580-36242-73), LRIS-LR-134 (580-36242-78), LRIS-LR-PS-SRM (580-36242-97) and the method blank (MB 320-8566/1-A). Quantitation is based on the theoretical ion abundance ratio; therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC).

These samples LRIS-LR-108-3 (580-36242-12), LRIS-LR-122 (580-36242-35), LRIS-LR-134 (580-36242-78) exhibited elevated noise or matrix interferences for one or more analytes requiring the detection limits to be raised appropriately. These analytes are flagged with a "G" qualifier

No other analytical or quality issues were noted.

General Chemistry

No analytical or quality issues were noted.

Dioxin Prep

No analytical or quality issues were noted.

Definitions/Glossary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The isomer is qualified as positively identified, but at an estimated quantity because the quantitation is based on the theoretical ratio for these samples.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
I	Ion Ratio outside of limits, value is EMPC.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-103-2

Lab Sample ID: 580-36242-1

Date Collected: 12/03/12 13:30

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 59.6

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.37	J	0.67	0.050	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
2,3,7,8-TCDF	1.8		0.67	0.066	pg/g	*	01/11/13 10:18	01/17/13 15:25	1
1,2,3,7,8-PeCDD	0.62	J q	3.4	0.15	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
1,2,3,7,8-PeCDF	1.7	J	3.4	0.11	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
2,3,4,7,8-PeCDF	1.2	J q	3.4	0.10	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
1,2,3,4,7,8-HxCDD	1.2	J q B	3.4	0.12	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
1,2,3,6,7,8-HxCDD	12		3.4	0.13	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
1,2,3,7,8,9-HxCDD	5.5	B	3.4	0.11	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
1,2,3,4,7,8-HxCDF	3.3	J B	3.4	0.11	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
1,2,3,6,7,8-HxCDF	1.8	J q B	3.4	0.11	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
1,2,3,7,8,9-HxCDF	ND		3.4	0.14	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
2,3,4,6,7,8-HxCDF	1.3	J B	3.4	0.10	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
1,2,3,4,6,7,8-HpCDD	190	B	3.4	0.75	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
1,2,3,4,6,7,8-HpCDF	22	B	3.4	0.28	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
1,2,3,4,7,8,9-HpCDF	0.63	J q	3.4	0.34	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
OCDD	1600	B	6.7	1.0	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
OCDF	41	B	6.7	0.22	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
Total TCDD	3.9	q B	0.67	0.050	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
Total TCDF	5.4	q	0.67	0.079	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
Total PeCDD	7.1	q	3.4	0.15	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
Total PeCDF	15	q	3.4	0.10	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
Total HxCDD	75	q B	3.4	0.12	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
Total HxCDF	60	q B	3.4	0.11	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
Total HpCDD	410	B	3.4	0.75	pg/g	*	01/11/13 10:18	01/16/13 10:28	1
Total HpCDF	77	q B	3.4	0.31	pg/g	*	01/11/13 10:18	01/16/13 10:28	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	47		25 - 164	01/11/13 10:18	01/16/13 10:28	1
13C-2,3,7,8-TCDF	55		24 - 169	01/11/13 10:18	01/16/13 10:28	1
13C-2,3,7,8-TCDF	50		24 - 169	01/11/13 10:18	01/17/13 15:25	1
13C-1,2,3,7,8-PeCDD	38		25 - 181	01/11/13 10:18	01/16/13 10:28	1
13C-1,2,3,7,8-PeCDF	41		24 - 185	01/11/13 10:18	01/16/13 10:28	1
13C-2,3,4,7,8-PeCDF	47		21 - 178	01/11/13 10:18	01/16/13 10:28	1
13C-1,2,3,4,7,8-HxCDD	50		32 - 141	01/11/13 10:18	01/16/13 10:28	1
13C-1,2,3,6,7,8-HxCDD	53		28 - 130	01/11/13 10:18	01/16/13 10:28	1
13C-1,2,3,4,7,8-HxCDF	57		26 - 152	01/11/13 10:18	01/16/13 10:28	1
13C-1,2,3,6,7,8-HxCDF	59		26 - 123	01/11/13 10:18	01/16/13 10:28	1
13C-1,2,3,7,8,9-HxCDF	52		29 - 147	01/11/13 10:18	01/16/13 10:28	1
13C-2,3,4,6,7,8-HxCDF	57		28 - 136	01/11/13 10:18	01/16/13 10:28	1
13C-1,2,3,4,6,7,8-HpCDD	45		23 - 140	01/11/13 10:18	01/16/13 10:28	1
13C-1,2,3,4,6,7,8-HpCDF	46		28 - 143	01/11/13 10:18	01/16/13 10:28	1
13C-1,2,3,4,7,8,9-HpCDF	53		26 - 138	01/11/13 10:18	01/16/13 10:28	1
13C-OCDD	54		17 - 157	01/11/13 10:18	01/16/13 10:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	84		35 - 197	01/11/13 10:18	01/16/13 10:28	1
37Cl4-2,3,7,8-TCDD	87		35 - 197	01/11/13 10:18	01/17/13 15:25	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-103-2

Lab Sample ID: 580-36242-1

Date Collected: 12/03/12 13:30

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	60		0.10	0.10	%			01/16/13 15:11	1
Percent Moisture	40		0.10	0.10	%			01/16/13 15:11	1

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-106-2

Lab Sample ID: 580-36242-6

Date Collected: 12/02/12 17:25

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 67.0

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.59	0.023	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
2,3,7,8-TCDF	ND		0.59	0.033	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
1,2,3,7,8-PeCDD	ND		2.9	0.044	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
1,2,3,7,8-PeCDF	ND		2.9	0.034	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
2,3,4,7,8-PeCDF	ND		2.9	0.032	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
1,2,3,4,7,8-HxCDD	ND		2.9	0.026	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
1,2,3,6,7,8-HxCDD	0.084	J	2.9	0.026	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
1,2,3,7,8,9-HxCDD	0.076	J q B	2.9	0.022	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
1,2,3,4,7,8-HxCDF	ND		2.9	0.019	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
1,2,3,6,7,8-HxCDF	ND		2.9	0.018	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
1,2,3,7,8,9-HxCDF	ND		2.9	0.024	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
2,3,4,6,7,8-HxCDF	ND		2.9	0.018	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
1,2,3,4,6,7,8-HpCDD	0.38	J B	2.9	0.054	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
1,2,3,4,6,7,8-HpCDF	0.077	J B	2.9	0.023	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
1,2,3,4,7,8,9-HpCDF	ND		2.9	0.030	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
OCDD	2.0	J q B	5.9	0.062	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
OCDF	0.15	J q B	5.9	0.039	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
Total TCDD	0.38	J q B	0.59	0.023	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
Total TCDF	ND		0.59	0.033	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
Total PeCDD	ND		2.9	0.044	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
Total PeCDF	ND		2.9	0.034	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
Total HxCDD	0.60	J q B	2.9	0.025	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
Total HxCDF	ND		2.9	0.024	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
Total HpCDD	1.0	J B	2.9	0.054	pg/g	*	01/11/13 10:18	01/16/13 11:11	1
Total HpCDF	0.077	J B	2.9	0.026	pg/g	*	01/11/13 10:18	01/16/13 11:11	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	78		25 - 164	01/11/13 10:18	01/16/13 11:11	1
13C-2,3,7,8-TCDF	92		24 - 169	01/11/13 10:18	01/16/13 11:11	1
13C-1,2,3,7,8-PeCDD	68		25 - 181	01/11/13 10:18	01/16/13 11:11	1
13C-1,2,3,7,8-PeCDF	72		24 - 185	01/11/13 10:18	01/16/13 11:11	1
13C-2,3,4,7,8-PeCDF	82		21 - 178	01/11/13 10:18	01/16/13 11:11	1
13C-1,2,3,4,7,8-HxCDD	92		32 - 141	01/11/13 10:18	01/16/13 11:11	1
13C-1,2,3,6,7,8-HxCDD	91		28 - 130	01/11/13 10:18	01/16/13 11:11	1
13C-1,2,3,4,7,8-HxCDF	96		26 - 152	01/11/13 10:18	01/16/13 11:11	1
13C-1,2,3,6,7,8-HxCDF	97		26 - 123	01/11/13 10:18	01/16/13 11:11	1
13C-1,2,3,7,8,9-HxCDF	86		29 - 147	01/11/13 10:18	01/16/13 11:11	1
13C-2,3,4,6,7,8-HxCDF	98		28 - 136	01/11/13 10:18	01/16/13 11:11	1
13C-1,2,3,4,6,7,8-HpCDD	77		23 - 140	01/11/13 10:18	01/16/13 11:11	1
13C-1,2,3,4,6,7,8-HpCDF	85		28 - 143	01/11/13 10:18	01/16/13 11:11	1
13C-1,2,3,4,7,8,9-HpCDF	95		26 - 138	01/11/13 10:18	01/16/13 11:11	1
13C-OCDD	91		17 - 157	01/11/13 10:18	01/16/13 11:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	104		35 - 197	01/11/13 10:18	01/16/13 11:11	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	67		0.10	0.10	%			01/16/13 15:11	1
Percent Moisture	33		0.10	0.10	%			01/16/13 15:11	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-108-3

Lab Sample ID: 580-36242-12

Date Collected: 12/03/12 11:25

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 61.2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.83		0.65	0.049	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
2,3,7,8-TCDF	5.0		0.65	0.072	pg/g	*	01/11/13 10:18	01/17/13 16:03	1
1,2,3,7,8-PeCDD	1.6	J	3.3	0.14	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
1,2,3,7,8-PeCDF	11		3.3	0.20	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
2,3,4,7,8-PeCDF	12		3.3	0.19	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
1,2,3,4,7,8-HxCDD	7.6	B	3.3	0.14	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
1,2,3,6,7,8-HxCDD	51		3.3	0.15	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
1,2,3,7,8,9-HxCDD	14	B	3.3	0.13	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
1,2,3,4,7,8-HxCDF	46	B	3.3	0.30	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
1,2,3,6,7,8-HxCDF	21	B	3.3	0.30	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
1,2,3,7,8,9-HxCDF	ND		3.3	0.33	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
2,3,4,6,7,8-HxCDF	8.3	B	3.3	0.27	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
1,2,3,4,6,7,8-HpCDD	1300	B	3.3	2.0	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
1,2,3,4,6,7,8-HpCDF	170	B	3.3	0.68	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
1,2,3,4,7,8,9-HpCDF	7.3		3.3	0.90	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
OCDD	14000	G B	74	74	pg/g	*	01/11/13 10:18	01/18/13 04:43	10
OCDF	160	B	6.5	0.19	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
Total TCDD	19	q B	0.65	0.049	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
Total TCDF	54	q	0.65	0.15	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
Total PeCDD	33	q	3.3	0.14	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
Total PeCDF	170	q	3.3	0.19	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
Total HxCDD	330	B	3.3	0.14	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
Total HxCDF	550	B	3.3	0.30	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
Total HpCDD	2700	B	3.3	2.0	pg/g	*	01/11/13 10:18	01/16/13 11:54	1
Total HpCDF	580	B	3.3	0.79	pg/g	*	01/11/13 10:18	01/16/13 11:54	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	61		25 - 164	01/11/13 10:18	01/16/13 11:54	1
13C-2,3,7,8-TCDF	70		24 - 169	01/11/13 10:18	01/16/13 11:54	1
13C-2,3,7,8-TCDF	63		24 - 169	01/11/13 10:18	01/17/13 16:03	1
13C-1,2,3,7,8-PeCDD	55		25 - 181	01/11/13 10:18	01/16/13 11:54	1
13C-1,2,3,7,8-PeCDF	59		24 - 185	01/11/13 10:18	01/16/13 11:54	1
13C-2,3,4,7,8-PeCDF	65		21 - 178	01/11/13 10:18	01/16/13 11:54	1
13C-1,2,3,4,7,8-HxCDD	68		32 - 141	01/11/13 10:18	01/16/13 11:54	1
13C-1,2,3,6,7,8-HxCDD	76		28 - 130	01/11/13 10:18	01/16/13 11:54	1
13C-1,2,3,4,7,8-HxCDF	78		26 - 152	01/11/13 10:18	01/16/13 11:54	1
13C-1,2,3,6,7,8-HxCDF	77		26 - 123	01/11/13 10:18	01/16/13 11:54	1
13C-1,2,3,7,8,9-HxCDF	69		29 - 147	01/11/13 10:18	01/16/13 11:54	1
13C-2,3,4,6,7,8-HxCDF	77		28 - 136	01/11/13 10:18	01/16/13 11:54	1
13C-1,2,3,4,6,7,8-HpCDD	64		23 - 140	01/11/13 10:18	01/16/13 11:54	1
13C-1,2,3,4,6,7,8-HpCDF	66		28 - 143	01/11/13 10:18	01/16/13 11:54	1
13C-1,2,3,4,7,8,9-HpCDF	76		26 - 138	01/11/13 10:18	01/16/13 11:54	1
13C-OCDD	64		17 - 157	01/11/13 10:18	01/18/13 04:43	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	103		35 - 197	01/11/13 10:18	01/16/13 11:54	1
37Cl4-2,3,7,8-TCDD	107		35 - 197	01/11/13 10:18	01/17/13 16:03	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-108-3

Lab Sample ID: 580-36242-12

Date Collected: 12/03/12 11:25

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	61		0.10	0.10	%			01/16/13 15:11	1
Percent Moisture	39		0.10	0.10	%			01/16/13 15:11	1

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-119-2

Lab Sample ID: 580-36242-23

Date Collected: 12/03/12 14:30

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 61.2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.69		0.65	0.075	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
2,3,7,8-TCDF	3.2		0.65	0.077	pg/g	*	01/11/13 10:18	01/17/13 16:40	1
1,2,3,7,8-PeCDD	2.7	J	3.3	0.14	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
1,2,3,7,8-PeCDF	5.6		3.3	0.16	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
2,3,4,7,8-PeCDF	4.7		3.3	0.15	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
1,2,3,4,7,8-HxCDD	6.5	B	3.3	0.17	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
1,2,3,6,7,8-HxCDD	65		3.3	0.17	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
1,2,3,7,8,9-HxCDD	19	B	3.3	0.14	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
1,2,3,4,7,8-HxCDF	14	B	3.3	0.16	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
1,2,3,6,7,8-HxCDF	9.4	B	3.3	0.16	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
1,2,3,7,8,9-HxCDF	7.1		3.3	0.20	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
2,3,4,6,7,8-HxCDF	5.5	B	3.3	0.15	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
1,2,3,4,6,7,8-HpCDD	1100	B	3.3	1.6	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
1,2,3,4,6,7,8-HpCDF	120	B	3.3	0.66	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
1,2,3,4,7,8,9-HpCDF	7.7		3.3	0.84	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
OCDD	9000	B	65	62	pg/g	*	01/11/13 10:18	01/18/13 05:26	10
OCDF	290	B	6.5	0.27	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
Total TCDD	26	q B	0.65	0.075	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
Total TCDF	24	q	0.65	0.087	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
Total PeCDD	37	q	3.3	0.14	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
Total PeCDF	82	q	3.3	0.16	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
Total HxCDD	320	B	3.3	0.16	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
Total HxCDF	340	B	3.3	0.17	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
Total HpCDD	2200	B	3.3	1.6	pg/g	*	01/11/13 10:18	01/16/13 12:36	1
Total HpCDF	480	B	3.3	0.75	pg/g	*	01/11/13 10:18	01/16/13 12:36	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	65		25 - 164	01/11/13 10:18	01/16/13 12:36	1
13C-2,3,7,8-TCDF	77		24 - 169	01/11/13 10:18	01/16/13 12:36	1
13C-2,3,7,8-TCDF	67		24 - 169	01/11/13 10:18	01/17/13 16:40	1
13C-1,2,3,7,8-PeCDD	60		25 - 181	01/11/13 10:18	01/16/13 12:36	1
13C-1,2,3,7,8-PeCDF	62		24 - 185	01/11/13 10:18	01/16/13 12:36	1
13C-2,3,4,7,8-PeCDF	73		21 - 178	01/11/13 10:18	01/16/13 12:36	1
13C-1,2,3,4,7,8-HxCDD	76		32 - 141	01/11/13 10:18	01/16/13 12:36	1
13C-1,2,3,6,7,8-HxCDD	73		28 - 130	01/11/13 10:18	01/16/13 12:36	1
13C-1,2,3,4,7,8-HxCDF	86		26 - 152	01/11/13 10:18	01/16/13 12:36	1
13C-1,2,3,6,7,8-HxCDF	82		26 - 123	01/11/13 10:18	01/16/13 12:36	1
13C-1,2,3,7,8,9-HxCDF	73		29 - 147	01/11/13 10:18	01/16/13 12:36	1
13C-2,3,4,6,7,8-HxCDF	83		28 - 136	01/11/13 10:18	01/16/13 12:36	1
13C-1,2,3,4,6,7,8-HpCDD	70		23 - 140	01/11/13 10:18	01/16/13 12:36	1
13C-1,2,3,4,6,7,8-HpCDF	68		28 - 143	01/11/13 10:18	01/16/13 12:36	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	01/11/13 10:18	01/16/13 12:36	1
13C-OCDD	64		17 - 157	01/11/13 10:18	01/18/13 05:26	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	104		35 - 197	01/11/13 10:18	01/16/13 12:36	1
37Cl4-2,3,7,8-TCDD	106		35 - 197	01/11/13 10:18	01/17/13 16:40	1

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-119-2

Lab Sample ID: 580-36242-23

Date Collected: 12/03/12 14:30

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	61		0.10	0.10	%			01/16/13 15:11	1
Percent Moisture	39		0.10	0.10	%			01/16/13 15:11	1

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Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-122

Lab Sample ID: 580-36242-35

Date Collected: 12/04/12 11:27

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 59.6

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.53	J q	0.67	0.050	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
2,3,7,8-TCDF	14		0.67	0.14	pg/g	☼	01/11/13 10:18	01/17/13 17:18	1
1,2,3,7,8-PeCDD	7.2		3.4	0.12	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
1,2,3,7,8-PeCDF	51		3.4	0.93	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
2,3,4,7,8-PeCDF	91		3.4	0.86	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
1,2,3,4,7,8-HxCDD	21	B	3.4	0.22	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
1,2,3,6,7,8-HxCDD	340		3.4	0.22	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
1,2,3,7,8,9-HxCDD	66	B	3.4	0.19	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
1,2,3,4,7,8-HxCDF	330	B	3.4	0.78	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
1,2,3,6,7,8-HxCDF	110	B	3.4	0.75	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
1,2,3,7,8,9-HxCDF	4.9		3.4	0.90	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
2,3,4,6,7,8-HxCDF	58	B	3.4	0.66	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
1,2,3,4,6,7,8-HpCDD	8300	G B	1200	1200	pg/g	☼	01/11/13 10:18	01/18/13 06:51	50
1,2,3,4,6,7,8-HpCDF	1000	B	3.4	3.3	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
1,2,3,4,7,8,9-HpCDF	49	G	4.3	4.3	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
OCDD	73000	G B	1800	1800	pg/g	☼	01/11/13 10:18	01/18/13 06:51	50
OCDF	490	B	6.7	0.26	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
Total TCDD	4.6	q B	0.67	0.050	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
Total TCDF	28	q	0.67	0.090	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
Total PeCDD	28	q	3.4	0.12	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
Total PeCDF	750	q	3.4	0.90	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
Total HxCDD	1000	B	3.4	0.21	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
Total HxCDF	3400	B	3.4	0.77	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1
Total HpCDD	17000	G B	1200	1200	pg/g	☼	01/11/13 10:18	01/18/13 06:51	50
Total HpCDF	3300	G B	3.8	3.8	pg/g	☼	01/11/13 10:18	01/16/13 13:19	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	65		25 - 164	01/11/13 10:18	01/16/13 13:19	1
13C-2,3,7,8-TCDF	75		24 - 169	01/11/13 10:18	01/16/13 13:19	1
13C-2,3,7,8-TCDF	67		24 - 169	01/11/13 10:18	01/17/13 17:18	1
13C-1,2,3,7,8-PeCDD	58		25 - 181	01/11/13 10:18	01/16/13 13:19	1
13C-1,2,3,7,8-PeCDF	64		24 - 185	01/11/13 10:18	01/16/13 13:19	1
13C-2,3,4,7,8-PeCDF	71		21 - 178	01/11/13 10:18	01/16/13 13:19	1
13C-1,2,3,4,7,8-HxCDD	77		32 - 141	01/11/13 10:18	01/16/13 13:19	1
13C-1,2,3,6,7,8-HxCDD	73		28 - 130	01/11/13 10:18	01/16/13 13:19	1
13C-1,2,3,4,7,8-HxCDF	80		26 - 152	01/11/13 10:18	01/16/13 13:19	1
13C-1,2,3,6,7,8-HxCDF	79		26 - 123	01/11/13 10:18	01/16/13 13:19	1
13C-1,2,3,7,8,9-HxCDF	72		29 - 147	01/11/13 10:18	01/16/13 13:19	1
13C-2,3,4,6,7,8-HxCDF	81		28 - 136	01/11/13 10:18	01/16/13 13:19	1
13C-1,2,3,4,6,7,8-HpCDD	46		23 - 140	01/11/13 10:18	01/18/13 06:51	50
13C-1,2,3,4,6,7,8-HpCDF	67		28 - 143	01/11/13 10:18	01/16/13 13:19	1
13C-1,2,3,4,7,8,9-HpCDF	80		26 - 138	01/11/13 10:18	01/16/13 13:19	1
13C-OCDD	95		17 - 157	01/11/13 10:18	01/18/13 06:51	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	105		35 - 197	01/11/13 10:18	01/16/13 13:19	1
37Cl4-2,3,7,8-TCDD	104		35 - 197	01/11/13 10:18	01/17/13 17:18	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-122

Lab Sample ID: 580-36242-35

Date Collected: 12/04/12 11:27

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	60		0.10	0.10	%			01/16/13 15:11	1
Percent Moisture	40		0.10	0.10	%			01/16/13 15:11	1

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-125-2

Lab Sample ID: 580-36242-40

Date Collected: 12/02/12 13:10

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 72.7

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	2.5		0.55	0.13	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
2,3,7,8-TCDF	5.6		0.55	0.21	pg/g	*	01/11/13 10:18	01/17/13 17:55	1
1,2,3,7,8-PeCDD	11		2.8	0.73	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
1,2,3,7,8-PeCDF	12		2.8	0.24	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
2,3,4,7,8-PeCDF	11		2.8	0.21	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
1,2,3,4,7,8-HxCDD	73	B	2.8	0.42	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
1,2,3,6,7,8-HxCDD	230		2.8	0.43	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
1,2,3,7,8,9-HxCDD	240	B	2.8	0.37	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
1,2,3,4,7,8-HxCDF	58	B	2.8	0.37	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
1,2,3,6,7,8-HxCDF	27	B	2.8	0.38	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
1,2,3,7,8,9-HxCDF	2.6	J	2.8	0.43	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
2,3,4,6,7,8-HxCDF	18	B	2.8	0.35	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
1,2,3,4,6,7,8-HpCDD	7300	G B	300	300	pg/g	*	01/11/13 10:18	01/17/13 00:47	20
1,2,3,4,6,7,8-HpCDF	460	B	2.8	1.6	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
1,2,3,4,7,8,9-HpCDF	16		2.8	2.1	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
OCDD	42000	G B	310	310	pg/g	*	01/11/13 10:18	01/17/13 00:47	20
OCDF	450	B	5.5	0.28	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
Total TCDD	110	B	0.55	0.13	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
Total TCDF	61	q	0.55	0.16	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
Total PeCDD	340	q	2.8	0.73	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
Total PeCDF	240		2.8	0.23	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
Total HxCDD	2800	B	2.8	0.41	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
Total HxCDF	1100	B	2.8	0.38	pg/g	*	01/11/13 10:18	01/16/13 14:02	1
Total HpCDD	22000	G B	300	300	pg/g	*	01/11/13 10:18	01/17/13 00:47	20
Total HpCDF	1500	B	2.8	1.9	pg/g	*	01/11/13 10:18	01/16/13 14:02	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	61		25 - 164	01/11/13 10:18	01/16/13 14:02	1
13C-2,3,7,8-TCDF	69		24 - 169	01/11/13 10:18	01/16/13 14:02	1
13C-2,3,7,8-TCDF	60		24 - 169	01/11/13 10:18	01/17/13 17:55	1
13C-1,2,3,7,8-PeCDD	54		25 - 181	01/11/13 10:18	01/16/13 14:02	1
13C-1,2,3,7,8-PeCDF	58		24 - 185	01/11/13 10:18	01/16/13 14:02	1
13C-2,3,4,7,8-PeCDF	64		21 - 178	01/11/13 10:18	01/16/13 14:02	1
13C-1,2,3,4,7,8-HxCDD	70		32 - 141	01/11/13 10:18	01/16/13 14:02	1
13C-1,2,3,6,7,8-HxCDD	68		28 - 130	01/11/13 10:18	01/16/13 14:02	1
13C-1,2,3,4,7,8-HxCDF	73		26 - 152	01/11/13 10:18	01/16/13 14:02	1
13C-1,2,3,6,7,8-HxCDF	72		26 - 123	01/11/13 10:18	01/16/13 14:02	1
13C-1,2,3,7,8,9-HxCDF	67		29 - 147	01/11/13 10:18	01/16/13 14:02	1
13C-2,3,4,6,7,8-HxCDF	69		28 - 136	01/11/13 10:18	01/16/13 14:02	1
13C-1,2,3,4,6,7,8-HpCDD	71		23 - 140	01/11/13 10:18	01/17/13 00:47	20
13C-1,2,3,4,6,7,8-HpCDF	60		28 - 143	01/11/13 10:18	01/16/13 14:02	1
13C-1,2,3,4,7,8,9-HpCDF	78		26 - 138	01/11/13 10:18	01/16/13 14:02	1
13C-OCDD	103		17 - 157	01/11/13 10:18	01/17/13 00:47	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	107		35 - 197	01/11/13 10:18	01/16/13 14:02	1
37Cl4-2,3,7,8-TCDD	100		35 - 197	01/11/13 10:18	01/17/13 17:55	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-125-2

Lab Sample ID: 580-36242-40

Date Collected: 12/02/12 13:10

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	73		0.10	0.10	%			01/16/13 15:11	1
Percent Moisture	27		0.10	0.10	%			01/16/13 15:11	1

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Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-132

Lab Sample ID: 580-36242-68

Date Collected: 12/04/12 12:06

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 43.2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.92	0.13	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
2,3,7,8-TCDF	ND		0.92	0.19	pg/g	*	01/11/13 10:18	01/24/13 17:12	1
1,2,3,7,8-PeCDD	0.74	J	4.6	0.26	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
1,2,3,7,8-PeCDF	0.77	J q	4.6	0.093	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
2,3,4,7,8-PeCDF	1.4	J	4.6	0.096	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
1,2,3,4,7,8-HxCDD	0.90	J q B	4.6	0.24	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
1,2,3,6,7,8-HxCDD	8.9		4.6	0.25	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
1,2,3,7,8,9-HxCDD	4.4	J B	4.6	0.21	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
1,2,3,4,7,8-HxCDF	3.5	J B	4.6	0.16	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
1,2,3,6,7,8-HxCDF	1.5	J B	4.6	0.16	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
1,2,3,7,8,9-HxCDF	ND		4.6	0.19	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
2,3,4,6,7,8-HxCDF	0.91	J B	4.6	0.14	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
1,2,3,4,6,7,8-HpCDD	180	B	4.6	0.68	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
1,2,3,4,6,7,8-HpCDF	24	B	4.6	0.29	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
1,2,3,4,7,8,9-HpCDF	1.6	J	4.6	0.37	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
OCDD	1600	B	9.2	1.4	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
OCDF	66	B	9.2	0.23	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
Total TCDD	2.3	q B	0.92	0.13	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
Total TCDF	5.3	q	0.92	0.11	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
Total PeCDD	3.8	J q	4.6	0.26	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
Total PeCDF	21	q	4.6	0.095	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
Total HxCDD	41	q B	4.6	0.23	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
Total HxCDF	54	B	4.6	0.16	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
Total HpCDD	350	B	4.6	0.68	pg/g	*	01/11/13 10:18	01/16/13 14:45	1
Total HpCDF	87	B	4.6	0.33	pg/g	*	01/11/13 10:18	01/16/13 14:45	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	63		25 - 164	01/11/13 10:18	01/16/13 14:45	1
13C-2,3,7,8-TCDF	71		24 - 169	01/11/13 10:18	01/16/13 14:45	1
13C-2,3,7,8-TCDF	59		24 - 169	01/11/13 10:18	01/24/13 17:12	1
13C-1,2,3,7,8-PeCDD	53		25 - 181	01/11/13 10:18	01/16/13 14:45	1
13C-1,2,3,7,8-PeCDF	59		24 - 185	01/11/13 10:18	01/16/13 14:45	1
13C-2,3,4,7,8-PeCDF	62		21 - 178	01/11/13 10:18	01/16/13 14:45	1
13C-1,2,3,4,7,8-HxCDD	71		32 - 141	01/11/13 10:18	01/16/13 14:45	1
13C-1,2,3,6,7,8-HxCDD	70		28 - 130	01/11/13 10:18	01/16/13 14:45	1
13C-1,2,3,4,7,8-HxCDF	80		26 - 152	01/11/13 10:18	01/16/13 14:45	1
13C-1,2,3,6,7,8-HxCDF	77		26 - 123	01/11/13 10:18	01/16/13 14:45	1
13C-1,2,3,7,8,9-HxCDF	72		29 - 147	01/11/13 10:18	01/16/13 14:45	1
13C-2,3,4,6,7,8-HxCDF	76		28 - 136	01/11/13 10:18	01/16/13 14:45	1
13C-1,2,3,4,6,7,8-HpCDD	66		23 - 140	01/11/13 10:18	01/16/13 14:45	1
13C-1,2,3,4,6,7,8-HpCDF	70		28 - 143	01/11/13 10:18	01/16/13 14:45	1
13C-1,2,3,4,7,8,9-HpCDF	82		26 - 138	01/11/13 10:18	01/16/13 14:45	1
13C-OCDD	83		17 - 157	01/11/13 10:18	01/16/13 14:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	100		35 - 197	01/11/13 10:18	01/16/13 14:45	1
37Cl4-2,3,7,8-TCDD	85		35 - 197	01/11/13 10:18	01/24/13 17:12	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-132

Lab Sample ID: 580-36242-68

Date Collected: 12/04/12 12:06

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	43		0.10	0.10	%			01/14/13 11:37	1
Percent Moisture	57		0.10	0.10	%			01/14/13 11:37	1

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-133

Lab Sample ID: 580-36242-73

Date Collected: 12/04/12 12:49

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 46.6

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.85	0.092	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
2,3,7,8-TCDF	0.82	J	0.85	0.11	pg/g	*	01/11/13 10:18	01/24/13 17:50	1
1,2,3,7,8-PeCDD	0.72	J	4.2	0.19	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
1,2,3,7,8-PeCDF	1.2	J	4.2	0.091	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
2,3,4,7,8-PeCDF	1.1	J q	4.2	0.086	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
1,2,3,4,7,8-HxCDD	1.4	J B	4.2	0.18	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
1,2,3,6,7,8-HxCDD	8.5		4.2	0.18	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
1,2,3,7,8,9-HxCDD	2.7	J q B	4.2	0.15	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
1,2,3,4,7,8-HxCDF	3.8	J B	4.2	0.14	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
1,2,3,6,7,8-HxCDF	1.5	J q B	4.2	0.14	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
1,2,3,7,8,9-HxCDF	ND		4.2	0.17	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
2,3,4,6,7,8-HxCDF	0.98	J B	4.2	0.12	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
1,2,3,4,6,7,8-HpCDD	190	B	4.2	0.66	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
1,2,3,4,6,7,8-HpCDF	27	B	4.2	0.30	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
1,2,3,4,7,8,9-HpCDF	1.5	J	4.2	0.38	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
OCDD	1600	B	8.5	1.4	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
OCDF	73	B	8.5	0.32	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
Total TCDD	2.0	q B	0.85	0.092	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
Total TCDF	3.2	q	0.85	0.061	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
Total PeCDD	2.5	J q	4.2	0.19	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
Total PeCDF	12	q	4.2	0.089	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
Total HxCDD	37	q B	4.2	0.17	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
Total HxCDF	57	q B	4.2	0.14	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
Total HpCDD	360	B	4.2	0.66	pg/g	*	01/11/13 10:18	01/16/13 15:27	1
Total HpCDF	110	B	4.2	0.34	pg/g	*	01/11/13 10:18	01/16/13 15:27	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	50		25 - 164	01/11/13 10:18	01/16/13 15:27	1
13C-2,3,7,8-TCDF	59		24 - 169	01/11/13 10:18	01/16/13 15:27	1
13C-2,3,7,8-TCDF	50		24 - 169	01/11/13 10:18	01/24/13 17:50	1
13C-1,2,3,7,8-PeCDD	43		25 - 181	01/11/13 10:18	01/16/13 15:27	1
13C-1,2,3,7,8-PeCDF	46		24 - 185	01/11/13 10:18	01/16/13 15:27	1
13C-2,3,4,7,8-PeCDF	52		21 - 178	01/11/13 10:18	01/16/13 15:27	1
13C-1,2,3,4,7,8-HxCDD	58		32 - 141	01/11/13 10:18	01/16/13 15:27	1
13C-1,2,3,6,7,8-HxCDD	54		28 - 130	01/11/13 10:18	01/16/13 15:27	1
13C-1,2,3,4,7,8-HxCDF	61		26 - 152	01/11/13 10:18	01/16/13 15:27	1
13C-1,2,3,6,7,8-HxCDF	57		26 - 123	01/11/13 10:18	01/16/13 15:27	1
13C-1,2,3,7,8,9-HxCDF	54		29 - 147	01/11/13 10:18	01/16/13 15:27	1
13C-2,3,4,6,7,8-HxCDF	60		28 - 136	01/11/13 10:18	01/16/13 15:27	1
13C-1,2,3,4,6,7,8-HpCDD	48		23 - 140	01/11/13 10:18	01/16/13 15:27	1
13C-1,2,3,4,6,7,8-HpCDF	51		28 - 143	01/11/13 10:18	01/16/13 15:27	1
13C-1,2,3,4,7,8,9-HpCDF	60		26 - 138	01/11/13 10:18	01/16/13 15:27	1
13C-OCDD	64		17 - 157	01/11/13 10:18	01/16/13 15:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	91		35 - 197	01/11/13 10:18	01/16/13 15:27	1
37Cl4-2,3,7,8-TCDD	77		35 - 197	01/11/13 10:18	01/24/13 17:50	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-133

Lab Sample ID: 580-36242-73

Date Collected: 12/04/12 12:49

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	47		0.10	0.10	%			01/14/13 11:37	1
Percent Moisture	53		0.10	0.10	%			01/14/13 11:37	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-134

Lab Sample ID: 580-36242-78

Date Collected: 12/04/12 13:10

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 48.8

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.34	J q	0.81	0.077	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
2,3,7,8-TCDF	1.6		0.81	0.22	pg/g	*	01/11/13 10:18	01/17/13 18:33	1
1,2,3,7,8-PeCDD	1.7	J	4.1	0.17	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
1,2,3,7,8-PeCDF	2.9	J	4.1	0.094	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
2,3,4,7,8-PeCDF	3.7	J	4.1	0.090	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
1,2,3,4,7,8-HxCDD	4.8	B	4.1	0.17	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
1,2,3,6,7,8-HxCDD	44		4.1	0.19	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
1,2,3,7,8,9-HxCDD	13	B	4.1	0.15	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
1,2,3,4,7,8-HxCDF	14	B	4.1	0.20	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
1,2,3,6,7,8-HxCDF	6.2	B	4.1	0.18	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
1,2,3,7,8,9-HxCDF	ND		4.1	0.23	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
2,3,4,6,7,8-HxCDF	4.6	B	4.1	0.18	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
1,2,3,4,6,7,8-HpCDD	1100	B	4.1	1.5	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
1,2,3,4,6,7,8-HpCDF	150	B	4.1	0.91	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
1,2,3,4,7,8,9-HpCDF	8.9		4.1	1.2	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
OCDD	9500	G B	82	82	pg/g	*	01/11/13 10:18	01/18/13 06:09	10
OCDF	710	B	8.1	0.55	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
Total TCDD	5.4	q B	0.81	0.077	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
Total TCDF	5.3	q	0.81	0.066	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
Total PeCDD	9.6	q	4.1	0.17	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
Total PeCDF	41	I	4.1	0.092	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
Total HxCDD	180	q B	4.1	0.17	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
Total HxCDF	270	B	4.1	0.20	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
Total HpCDD	2100	B	4.1	1.5	pg/g	*	01/11/13 10:18	01/16/13 16:10	1
Total HpCDF	700	B	4.1	1.0	pg/g	*	01/11/13 10:18	01/16/13 16:10	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	53		25 - 164	01/11/13 10:18	01/16/13 16:10	1
13C-2,3,7,8-TCDF	61		24 - 169	01/11/13 10:18	01/16/13 16:10	1
13C-2,3,7,8-TCDF	57		24 - 169	01/11/13 10:18	01/17/13 18:33	1
13C-1,2,3,7,8-PeCDD	49		25 - 181	01/11/13 10:18	01/16/13 16:10	1
13C-1,2,3,7,8-PeCDF	51		24 - 185	01/11/13 10:18	01/16/13 16:10	1
13C-2,3,4,7,8-PeCDF	58		21 - 178	01/11/13 10:18	01/16/13 16:10	1
13C-1,2,3,4,7,8-HxCDD	60		32 - 141	01/11/13 10:18	01/16/13 16:10	1
13C-1,2,3,6,7,8-HxCDD	59		28 - 130	01/11/13 10:18	01/16/13 16:10	1
13C-1,2,3,4,7,8-HxCDF	68		26 - 152	01/11/13 10:18	01/16/13 16:10	1
13C-1,2,3,6,7,8-HxCDF	63		26 - 123	01/11/13 10:18	01/16/13 16:10	1
13C-1,2,3,7,8,9-HxCDF	59		29 - 147	01/11/13 10:18	01/16/13 16:10	1
13C-2,3,4,6,7,8-HxCDF	63		28 - 136	01/11/13 10:18	01/16/13 16:10	1
13C-1,2,3,4,6,7,8-HpCDD	57		23 - 140	01/11/13 10:18	01/16/13 16:10	1
13C-1,2,3,4,6,7,8-HpCDF	56		28 - 143	01/11/13 10:18	01/16/13 16:10	1
13C-1,2,3,4,7,8,9-HpCDF	64		26 - 138	01/11/13 10:18	01/16/13 16:10	1
13C-OCDD	57		17 - 157	01/11/13 10:18	01/18/13 06:09	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	93		35 - 197	01/11/13 10:18	01/16/13 16:10	1
37Cl4-2,3,7,8-TCDD	92		35 - 197	01/11/13 10:18	01/17/13 18:33	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-134

Lab Sample ID: 580-36242-78

Date Collected: 12/04/12 13:10

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	49		0.10	0.10	%			01/16/13 15:11	1
Percent Moisture	51		0.10	0.10	%			01/16/13 15:11	1

QC Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-8566/1-A

Matrix: Solid

Analysis Batch: 8762

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 8566

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.50	0.030	pg/g		01/11/13 10:18	01/16/13 09:45	1
2,3,7,8-TCDF	ND		0.50	0.044	pg/g		01/11/13 10:18	01/16/13 09:45	1
1,2,3,7,8-PeCDD	ND		2.5	0.057	pg/g		01/11/13 10:18	01/16/13 09:45	1
1,2,3,7,8-PeCDF	ND		2.5	0.041	pg/g		01/11/13 10:18	01/16/13 09:45	1
2,3,4,7,8-PeCDF	ND		2.5	0.13	pg/g		01/11/13 10:18	01/16/13 09:45	1
1,2,3,4,7,8-HxCDD	0.0755	J q	2.5	0.029	pg/g		01/11/13 10:18	01/16/13 09:45	1
1,2,3,6,7,8-HxCDD	ND		2.5	0.069	pg/g		01/11/13 10:18	01/16/13 09:45	1
1,2,3,7,8,9-HxCDD	0.0928	J	2.5	0.026	pg/g		01/11/13 10:18	01/16/13 09:45	1
1,2,3,4,7,8-HxCDF	0.0853	J	2.5	0.026	pg/g		01/11/13 10:18	01/16/13 09:45	1
1,2,3,6,7,8-HxCDF	0.0793	J	2.5	0.023	pg/g		01/11/13 10:18	01/16/13 09:45	1
1,2,3,7,8,9-HxCDF	ND		2.5	0.031	pg/g		01/11/13 10:18	01/16/13 09:45	1
2,3,4,6,7,8-HxCDF	0.0657	J q	2.5	0.023	pg/g		01/11/13 10:18	01/16/13 09:45	1
1,2,3,4,6,7,8-HpCDD	0.152	J	2.5	0.036	pg/g		01/11/13 10:18	01/16/13 09:45	1
1,2,3,4,6,7,8-HpCDF	0.0979	J q	2.5	0.027	pg/g		01/11/13 10:18	01/16/13 09:45	1
1,2,3,4,7,8,9-HpCDF	ND		2.5	0.039	pg/g		01/11/13 10:18	01/16/13 09:45	1
OCDD	0.391	J	5.0	0.057	pg/g		01/11/13 10:18	01/16/13 09:45	1
OCDF	0.169	J	5.0	0.057	pg/g		01/11/13 10:18	01/16/13 09:45	1
Total TCDD	0.0903	J q	0.50	0.030	pg/g		01/11/13 10:18	01/16/13 09:45	1
Total TCDF	ND		0.50	0.044	pg/g		01/11/13 10:18	01/16/13 09:45	1
Total PeCDD	ND		2.5	0.086	pg/g		01/11/13 10:18	01/16/13 09:45	1
Total PeCDF	ND		2.5	0.13	pg/g		01/11/13 10:18	01/16/13 09:45	1
Total HxCDD	0.168	J q	2.5	0.041	pg/g		01/11/13 10:18	01/16/13 09:45	1
Total HxCDF	0.230	J q	2.5	0.026	pg/g		01/11/13 10:18	01/16/13 09:45	1
Total HpCDD	0.266	J	2.5	0.036	pg/g		01/11/13 10:18	01/16/13 09:45	1
Total HpCDF	0.0979	J q	2.5	0.033	pg/g		01/11/13 10:18	01/16/13 09:45	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	51		25 - 164	01/11/13 10:18	01/16/13 09:45	1
13C-2,3,7,8-TCDF	56		24 - 169	01/11/13 10:18	01/16/13 09:45	1
13C-1,2,3,7,8-PeCDD	45		25 - 181	01/11/13 10:18	01/16/13 09:45	1
13C-1,2,3,7,8-PeCDF	48		24 - 185	01/11/13 10:18	01/16/13 09:45	1
13C-2,3,4,7,8-PeCDF	49		21 - 178	01/11/13 10:18	01/16/13 09:45	1
13C-1,2,3,4,7,8-HxCDD	66		32 - 141	01/11/13 10:18	01/16/13 09:45	1
13C-1,2,3,6,7,8-HxCDD	65		28 - 130	01/11/13 10:18	01/16/13 09:45	1
13C-1,2,3,4,7,8-HxCDF	72		26 - 152	01/11/13 10:18	01/16/13 09:45	1
13C-1,2,3,6,7,8-HxCDF	71		26 - 123	01/11/13 10:18	01/16/13 09:45	1
13C-1,2,3,7,8,9-HxCDF	59		29 - 147	01/11/13 10:18	01/16/13 09:45	1
13C-2,3,4,6,7,8-HxCDF	67		28 - 136	01/11/13 10:18	01/16/13 09:45	1
13C-1,2,3,4,6,7,8-HpCDD	55		23 - 140	01/11/13 10:18	01/16/13 09:45	1
13C-1,2,3,4,6,7,8-HpCDF	62		28 - 143	01/11/13 10:18	01/16/13 09:45	1
13C-1,2,3,4,7,8,9-HpCDF	66		26 - 138	01/11/13 10:18	01/16/13 09:45	1
13C-OCDD	63		17 - 157	01/11/13 10:18	01/16/13 09:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	98		35 - 197	01/11/13 10:18	01/16/13 09:45	1

TestAmerica Seattle

QC Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-8566/2-A

Matrix: Solid

Analysis Batch: 8762

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 8566

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	20.0	20.2		pg/g		101	67 - 158
2,3,7,8-TCDF	20.0	20.0		pg/g		100	75 - 158
1,2,3,7,8-PeCDD	100	101		pg/g		101	70 - 142
1,2,3,7,8-PeCDF	100	113		pg/g		113	80 - 134
2,3,4,7,8-PeCDF	100	106		pg/g		106	68 - 160
1,2,3,4,7,8-HxCDD	100	95.6		pg/g		96	70 - 164
1,2,3,6,7,8-HxCDD	100	121		pg/g		121	76 - 134
1,2,3,7,8,9-HxCDD	100	99.3		pg/g		99	64 - 162
1,2,3,4,7,8-HxCDF	100	95.3		pg/g		95	72 - 134
1,2,3,6,7,8-HxCDF	100	107		pg/g		107	84 - 130
1,2,3,7,8,9-HxCDF	100	108		pg/g		108	78 - 130
2,3,4,6,7,8-HxCDF	100	106		pg/g		106	70 - 156
1,2,3,4,6,7,8-HpCDD	100	104		pg/g		104	70 - 140
1,2,3,4,6,7,8-HpCDF	100	107		pg/g		107	82 - 122
1,2,3,4,7,8,9-HpCDF	100	98.6		pg/g		99	78 - 138
OCDD	200	192		pg/g		96	78 - 144
OCDF	200	226		pg/g		113	63 - 170

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C-2,3,7,8-TCDD	54		20 - 175
13C-2,3,7,8-TCDF	61		22 - 152
13C-1,2,3,7,8-PeCDD	49		21 - 227
13C-1,2,3,7,8-PeCDF	54		21 - 192
13C-2,3,4,7,8-PeCDF	57		13 - 328
13C-1,2,3,4,7,8-HxCDD	67		21 - 193
13C-1,2,3,6,7,8-HxCDD	63		25 - 163
13C-1,2,3,4,7,8-HxCDF	75		19 - 202
13C-1,2,3,6,7,8-HxCDF	71		21 - 159
13C-1,2,3,7,8,9-HxCDF	65		17 - 205
13C-2,3,4,6,7,8-HxCDF	70		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	61		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	65		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	70		20 - 186
13C-OCDD	71		13 - 199

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
37Cl4-2,3,7,8-TCDD	82		35 - 197

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-36242-1 DU

Matrix: Solid

Analysis Batch: 128243

Client Sample ID: LRIS-LR-103-2

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Solids	60		60		%		0.7	20
Percent Moisture	40		40		%		1	20

TestAmerica Seattle

Lab Chronicle

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-103-2

Lab Sample ID: 580-36242-1

Date Collected: 12/03/12 13:30

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 59.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	8762	01/16/13 10:28	MG	TAL SAC
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	9068	01/17/13 15:25	MG	TAL SAC
Total/NA	Analysis	D 2216		1	128243	01/16/13 15:11	JL	TAL SEA

Client Sample ID: LRIS-LR-106-2

Lab Sample ID: 580-36242-6

Date Collected: 12/02/12 17:25

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 67.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	8762	01/16/13 11:11	MG	TAL SAC
Total/NA	Analysis	D 2216		1	128243	01/16/13 15:11	JL	TAL SEA

Client Sample ID: LRIS-LR-108-3

Lab Sample ID: 580-36242-12

Date Collected: 12/03/12 11:25

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 61.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	8762	01/16/13 11:54	MG	TAL SAC
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		10	8906	01/18/13 04:43	SA	TAL SAC
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	9068	01/17/13 16:03	MG	TAL SAC
Total/NA	Analysis	D 2216		1	128243	01/16/13 15:11	JL	TAL SEA

Client Sample ID: LRIS-LR-119-2

Lab Sample ID: 580-36242-23

Date Collected: 12/03/12 14:30

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 61.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	8762	01/16/13 12:36	MG	TAL SAC
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		10	8906	01/18/13 05:26	SA	TAL SAC
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	9068	01/17/13 16:40	MG	TAL SAC
Total/NA	Analysis	D 2216		1	128243	01/16/13 15:11	JL	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-122

Lab Sample ID: 580-36242-35

Date Collected: 12/04/12 11:27

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 59.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	8762	01/16/13 13:19	MG	TAL SAC
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		50	8906	01/18/13 06:51	SA	TAL SAC
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	9068	01/17/13 17:18	MG	TAL SAC
Total/NA	Analysis	D 2216		1	128243	01/16/13 15:11	JL	TAL SEA

Client Sample ID: LRIS-LR-125-2

Lab Sample ID: 580-36242-40

Date Collected: 12/02/12 13:10

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 72.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		20	8762	01/17/13 00:47	MG	TAL SAC
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	8762	01/16/13 14:02	MG	TAL SAC
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	9068	01/17/13 17:55	MG	TAL SAC
Total/NA	Analysis	D 2216		1	128243	01/16/13 15:11	JL	TAL SEA

Client Sample ID: LRIS-LR-132

Lab Sample ID: 580-36242-68

Date Collected: 12/04/12 12:06

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 43.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	8762	01/16/13 14:45	MG	TAL SAC
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	9279	01/24/13 17:12	MG	TAL SAC
Total/NA	Analysis	D 2216		1	128054	01/14/13 11:37	JL	TAL SEA

Client Sample ID: LRIS-LR-133

Lab Sample ID: 580-36242-73

Date Collected: 12/04/12 12:49

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 46.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	8762	01/16/13 15:27	MG	TAL SAC
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	9279	01/24/13 17:50	MG	TAL SAC
Total/NA	Analysis	D 2216		1	128054	01/14/13 11:37	JL	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Client Sample ID: LRIS-LR-134

Lab Sample ID: 580-36242-78

Date Collected: 12/04/12 13:10

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 48.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	8762	01/16/13 16:10	MG	TAL SAC
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		10	8906	01/18/13 06:09	SA	TAL SAC
Total/NA	Prep	HRMS-Sox			8566	01/11/13 10:18	CR	TAL SAC
Total/NA	Analysis	1613B		1	9068	01/17/13 18:33	MG	TAL SAC
Total/NA	Analysis	D 2216		1	128243	01/16/13 15:11	JL	TAL SEA

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Certification Summary

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-04-14
California	NELAP	9	01115CA	01-31-14
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-13
USDA	Federal		P330-11-00222	05-20-14
Washington	State Program	10	C553	02-17-14

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-14
Alaska (UST)	State Program	10	UST-055	12-18-13
Arizona	State Program	9	AZ0708	08-11-13 *
Arkansas DEQ	State Program	6	88-0691	06-17-13
California	NELAP	9	1119CA	01-31-14
Colorado	State Program	8	N/A	08-31-13
Connecticut	State Program	1	PH-0691	06-30-13
Florida	NELAP	4	E87570	06-30-13
Guam	State Program	9	N/A	08-31-13
Hawaii	State Program	9	N/A	01-31-14
Illinois	NELAP	5	200060	03-17-14
Kansas	NELAP	7	E-10375	10-31-13
Louisiana	NELAP	6	30612	06-30-13
Michigan	State Program	5	9947	01-31-14
Nevada	State Program	9	CA44	07-31-13
New Jersey	NELAP	2	CA005	06-30-13
New York	NELAP	2	11666	04-01-14
Northern Mariana Islands	State Program	9	MP0007	02-01-14
Oregon	NELAP	10	CA200005	03-28-14
Pennsylvania	NELAP	3	68-01272	03-31-14
South Carolina	State Program	4	87014	06-30-13
Texas	NELAP	6	T104704399-08-TX	05-31-13
US Fish & Wildlife	Federal		LE148388-0	12-31-13
USDA	Federal		P330-11-00436	12-30-14
USEPA UCMR	Federal	1	CA00044	11-06-14
Utah	NELAP	8	QUAN1	01-31-14
Washington	State Program	10	C581	05-05-13
West Virginia	State Program	3	9930C	12-31-13
West Virginia DEP	State Program	3	334	07-31-13
Wyoming	State Program	8	8TMS-Q	01-31-14

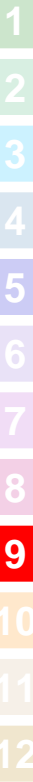
* Expired certification is currently pending renewal and is considered valid.

Sample Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-36242-1	LRIS-LR-103-2	Solid	12/03/12 13:30	12/07/12 08:50
580-36242-6	LRIS-LR-106-2	Solid	12/02/12 17:25	12/07/12 08:50
580-36242-12	LRIS-LR-108-3	Solid	12/03/12 11:25	12/07/12 08:50
580-36242-23	LRIS-LR-119-2	Solid	12/03/12 14:30	12/07/12 08:50
580-36242-35	LRIS-LR-122	Solid	12/04/12 11:27	12/07/12 08:50
580-36242-40	LRIS-LR-125-2	Solid	12/02/12 13:10	12/07/12 08:50
580-36242-68	LRIS-LR-132	Solid	12/04/12 12:06	12/07/12 08:50
580-36242-73	LRIS-LR-133	Solid	12/04/12 12:49	12/07/12 08:50
580-36242-78	LRIS-LR-134	Solid	12/04/12 13:10	12/07/12 08:50
580-36242-97	LRIS-LR-PS-SRM	Solid	11/26/12 10:00	12/07/12 08:50



The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Lab: Test America
Address: 5735 8th Street E, Tacoma, WA 98424
City: Tacoma
State: WA
Zip: 98424

Project Information: Site Code: Lake River Industrial Site
Project # 9003.01.40
Site Address: 111 W. Division St
City/State: Tacoma, WA
PO #

Other Information: Send Invoice to: Laurie Olin, Madi Novak
Send EDD to: Erik Navajo
CC Hardcopy to: Erik Navajo, Madi Novak
CC Hardcopy to:

Lab P.M.: Pam Johnson
Phone/Fax: /
PM email: /
Lab Quote #:

ITEM #	Field Sample No. / Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis		Preservative		Lab Notes	
							ARCHIVE	1613B - Dioxin/Furan	Total Organic Carbon - COE 9060		TAT	Regular
1	LRS-LR-103-2	SUB_S O-SED	C	12/03/2012 13:30	3		X					
2	LRS-LR-103-3	SUB_S O-SED	C	12/03/2012 13:35	3		X					
3	LRS-LR-103-4	SUB_S O-SED	C	12/03/2012 13:40	3		X					
4	LRS-LR-103-5	SUB_S O-SED	C	12/03/2012 13:45	3		X					
5	LRS-LR-103	SOIL-SED	G	12/04/2012 11:55	3		X	X				
6	LRS-LR-106-2	SUB_S O-SED	G	12/02/2012 17:25	3		X					
7	LRS-LR-106-3	SUB_S O-SED	C	12/02/2012 17:30	3		X					
8	LRS-LR-106-4	SUB_S O-SED	C	12/02/2012 17:35	3		X					
9	LRS-LR-106-5	SUB_S O-SED	C	12/02/2012 17:40	3		X					
10	LRS-LR-106	SOIL-SED	C	12/04/2012 11:42	3		X	X				
11	LRS-LR-108-2	SUB_S O-SED	C	12/03/2012 11:20	3		X					

Additional Comments/Special Instructions:

REINQUISHED BY / AFFILIATION: Erik Navajo / MFA
DATE: 12/3/12
TIME: 08:50
ACCEPTED BY / AFFILIATION: Tom [Signature] / TASA
DATE: 12/3/12
TIME: 08:50

Company: _____ DATE/TIME: _____
Tracking #: _____

Temp in OC	Y/N	Y/N	Y/N	Y/N
Samples on Ice?	Y/N	Y/N	Y/N	Y/N
Sample intact?	Y/N	Y/N	Y/N	Y/N
Trip Blank?	Y/N	Y/N	Y/N	Y/N

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information:			Project Information:			Other Information:		
Lab:	Unknown Laboratory	Site Code:	Lake River Industrial Site	Address:		Send Invoice to:		
Address:		Project #:		City/State:		City/State:		Phone #:
Lab P.M.:		City:	State, Zip:	PO #:		Send EDD to:		
Phone/Fax:	/	P.M. Name:		CC Hardcopy to:		CC Hardcopy to:		
P.M. email:		Phone/Fax:		CC Hardcopy to:				
Lab Quote #:		P.M. Email:						

ITEM #	Field Sample No. / Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush
12	LRS-LR-108-3	SUB_S O-SED	C	12/03/2012 11:25	3		X		Archive		
13	LRS-LR-108-4	SUB_S O-SED	C	12/03/2012 11:30	3		X		1613B - Dioxin/Furan		
14	LRS-LR-108-5	SUB_S O-SED	C	12/03/2012 11:35	3		X		Total Organic Carbon - COE 9060		
15	LRS-LR-109-2	SUB_S O-SED	C	12/02/2012 15:10	3		X				
16	LRS-LR-109-3	SUB_S O-SED	G	12/02/2012 15:15	3		X				
17	LRS-LR-109-4	SUB_S O-SED	G	12/02/2012 15:20	3		X				
18	LRS-LR-109-5	SUB_S O-SED	C	12/02/2012 15:25	3		X				
19	LRS-LR-110-2	SUB_S O-SED	C	12/03/2012 10:30	3		X				
20	LRS-LR-110-3	SUB_S O-SED	C	12/03/2012 10:35	3		X				
21	LRS-LR-110-4	SUB_S O-SED	C	12/03/2012 10:40	3		X				
22	LRS-LR-110-5	SUB_S O-SED	C	12/03/2012 10:45	3		X				

Task: 2012_LR_SED
Total # of Samples: 97
Event Complete?

Notes: F= Field Filtered, H= Hold

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: **Task:** TAT

Address: Site Code: Lake River Industrial Site Send Invoice to: Total # of Samples: 97 2012_LR_SED Event Complete?

Project # Site Address City/State Phone # Notes: F= Field Filtered , H= Hold Rush

Lab PIV: City State, Zip PO # Lab Notes

Phone/Fax: / PIV Name Send EDD to Preservative

PIV email Phone/Fax: CC Hardcopy to Analysis

Lab Quote # PIV Email: CC Hardcopy to

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes
23	LRS-LR-119-2	SUB_S O-SED	C	12/03/2012 14:30	3		X	Archive	
24	LRS-LR-119-3	SUB_S O-SED	C	12/03/2012 14:35	3		X	1613B - Dioxin/Furan	
25	LRS-LR-119-4	SUB_S O-SED	C	12/03/2012 14:40	3		X	Total Organic Carbon - COE 9060	
26	LRS-LR-119-5	SUB_S O-SED	C	12/03/2012 14:45	3		X		
27	LRS-LR-120-2	SUB_S O-SED	G	12/03/2012 12:20	3		X		
28	LRS-LR-120-3	SUB_S O-SED	G	12/03/2012 12:25	3		X		
29	LRS-LR-120-4	SUB_S O-SED	C	12/03/2012 12:30	3		X		
30	LRS-LR-120-5	SUB_S O-SED	C	12/03/2012 12:35	3		X		
31	LRS-LR-122-2	SUB_S O-SED	C	12/03/2012 15:22	3		X		
32	LRS-LR-122-3	SUB_S O-SED	C	12/03/2012 15:22	3		X		
33	LRS-LR-122-4	SUB_S O-SED	C	12/03/2012 15:22	3		X		

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Project Information: Other Information:

Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Address:	City/State:	Phone #:
Address:	Project #	Site Address	City/State:	Phone #:
Lab PIV:	City:	State, Zip	PO #	
Phone/Fax:	PIV Name	Send EDD to	CC Hardcopy to	
PIV email	Phone/Fax:	CC Hardcopy to	CC Hardcopy to	
Lab Quote #:	PIV Email:			

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Notes: F= Field Filtered , H= Hold	Rush	Event Complete?
34	LRS-LR-122-5	SUB_S O-SED	C	12/03/2012 15:22	3		X	Archive					
35	LRS-LR-122	SUB_S O-SED	C	12/04/2012 11:27	3		X	1613B - Dioxin/Furan					
36	LRS-LR-124-2	SUB_S O-SED	C	12/03/2012 09:50	3		X	Total Organic Carbon - COE 9060					
37	LRS-LR-124-3	SUB_S O-SED	C	12/03/2012 10:00	3		X						
38	LRS-LR-124-4	SUB_S O-SED	G	12/03/2012 10:05	3		X						
39	LRS-LR-124-5	SUB_S O-SED	G	12/03/2012 10:10	3		X						
40	LRS-LR-125-2	SUB_S O-SED	C	12/02/2012 13:10	3		X						
41	LRS-LR-125-3	SUB_S O-SED	C	12/02/2012 13:15	3		X						
42	LRS-LR-125-4	SUB_S O-SED	C	12/02/2012 13:20	3		X						
43	LRS-LR-126-2	SUB_S O-SED	C	12/02/2012 12:40	3		X						
44	LRS-LR-126-3	SUB_S O-SED	C	12/02/2012 12:45	3		X						

Task: 2012_LR_SED
Total # of Samples: 97
Event Complete?

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: _____

Address:	Project #	Site Code:	Lake River Industrial Site	Send Invoice to:	Address:	City/State:	Phone #:
Lab PM:	City	State:	Zip	PO #	Send EDD to	CC Hardcopy to	CC Hardcopy to
Phone/Fax: /	PM Name	PM Email:	PM Email:				
Lab Quote #:							

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Notes: F= Field Filtered, H= Hold	Rush
46	LRS-LR-126-4	SUB_S O-SED	C	12/02/2012 12:47	3		X		Archive			
46	LRS-LR-126-5	SUB_S O-SED	C	12/02/2012 12:50	3		X		1613B - Dioxin/Furan			
47	LRS-LR-126	SOIL- SED	C	12/04/2012 08:56	3		X		Total Organic Carbon - COE 9060			
48	LRS-LR-129-2	SUB_S O-SED	C	12/02/2012 13:50	3		X					
49	LRS-LR-129-3	SUB_S O-SED	G	12/02/2012 13:55	3		X					
49	LRS-LR-129-4	SUB_S O-SED	G	12/02/2012 14:00	3		X					
50	LRS-LR-129-5	SUB_S O-SED	C	12/02/2012 14:05	3		X					
51	LRS-LR-129	SOIL- SED	C	12/04/2012 10:10	3		X					
52	LRS-LR-130-2	SUB_S O-SED	C	12/02/2012 14:40	3		X					
54	LRS-LR-130-FD	QAQC		12/02/2012 14:40	3		X					
55	LRS-LR-130-3	SUB_S O-SED		12/02/2012 14:45	3		X					

Task:	2012_LR_SED
Total # of Samples:	97
Event Complete?	

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: **Task:** TAT Total # of Samples: 97 2012_LR_SED Event Complete?

Address: Site Code: Lake River Industrial Site Address: Send Invoice to: City/State: Phone #:

Project # Site Address City State Zip PO # Send EDD to CC Hardcopy to CC Hardcopy to

Lab P.M. P.M. Name P.M. Email P.M. Fax P.M. Fax P.M. Email

Lab Quote #: P.M. Email:

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Notes: F= Field Filtered, H= Hold	Rush
56	LRS-LR-130-4	SUB_S O-SED	C	12/02/2012 14:50	3		Archive			X		
57	LRS-LR-130-5	SUB_S O-SED	C	12/02/2012 14:55	3		1613B - Dioxin/Furan			X		
58	LRS-LR-130	SOIL-SED	C	12/04/2012 10:24	3		Total Organic Carbon - COE 9060			X		
59	LRS-LR-130-FD-1	QAQC	C	12/04/2012 10:24	3					X		
60	LRS-LR-131-2	SUB_S O-SED	G	12/02/2012 16:30	3					X		
61	LRS-LR-131-3	SUB_S O-SED	G	12/02/2012 16:35	3					X		
62	LRS-LR-131-4	SUB_S O-SED	C	12/02/2012 16:40	3					X		
63	LRS-LR-131	SOIL-SED	C	12/04/2012 11:15	3					X		
64	LRS-LR-132-2	SUB_S O-SED	C	12/03/2012 14:00	3					X		
65	LRS-LR-132-3	SUB_S O-SED	C	12/03/2012 14:05	3					X		
66	LRS-LR-132-4	SUB_S O-SED	C	12/03/2012 14:10	3					X		

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to:

Address:	Site Code:	Lake River Industrial Site	Send Invoice to:
Project #	City:	State, Zip	Address:
Site Address:	City/State:	Phone #:	City/State:
Lab PVI:	PVI Name	Send EDD to	PO #
Phone/Fax:	Phone/Fax:	CC Hardcopy to	CC Hardcopy to
PVI email:	PVI Email:	CC Hardcopy to	
Lab Quote #:			

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis		Preservative	Lab Notes
							Archive	1613B - Dioxin/Furan	Total Organic Carbon - COE 9060	Notes: F= Field Filtered , H= Hold
67	LRS-LR-132-5	SUB_S O-SED	C	12/03/2012 14:15	3		X			
68	LRS-LR-132	SOIL-SED	C	12/04/2012 12:06	3		X			
69	LRS-LR-133-2	SUB_S O-SED	C	12/03/2012 15:15	3		X	X		
70	LRS-LR-133-3	SUB_S O-SED	C	12/03/2012 15:20	3		X			
71	LRS-LR-133-4	SUB_S O-SED	G	12/03/2012 15:25	3		X			
72	LRS-LR-133-5	SUB_S O-SED	G	12/03/2012 15:30	3		X			
73	LRS-LR-133	SOIL-SED	C	12/04/2012 12:49	3		X			
74	LRS-LR-134-2	SUB_S O-SED	C	12/02/2012 10:20	3		X	X		
75	LRS-LR-134-3	SUB_S O-SED	C	12/02/2012 10:28	3		X			
76	LRS-LR-134-4	SUB_S O-SED	C	12/02/2012 10:30	3		X			
77	LRS-LR-134-5	SUB_S O-SED	C	12/02/2012 10:35	3		X			

Task: 2012_LR_SED
Total # of Samples: 97
Event Complete?

TAT Rush

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information:		Project Information:			Other Information:			Task:	
Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Project #	Send Invoice to:	Address:	City/State:	Phone #:	TAT	Total # of Samples: 97	2012_LR_SED
Address:	Site Address:	City:	State:	Zip:	PO #:	Send EDD to:	Notes: F= Field Filtered, H= Hold	Rush	Event Complete?
Lab PIV:	PIV Name	PIV Phone/Fax:	PIV Email:	Lab Quote #:	CC Hardcopy to:	CC Hardcopy to:			
ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes
78	LRS-LR-134	SOIL-SED	C	12/04/2012 13:10	3		Archive		
79	LRS-LR-135-2	SUB_S O-SED	C	12/03/2012 15:45	3		1613B - Dioxin/Furan		
80	LRS-LR-135-3	SUB_S O-SED	C	12/03/2012 15:50	3		Total Organic Carbon - COE 9060		
81	LRS-LR-135-4	SUB_S O-SED	C	12/03/2012 15:55	3				
82	LRS-LR-135-5	SUB_S O-SED	G	12/03/2012 16:00	3				
83	LRS-LR-135	SOIL-SED	G	12/04/2012 13:01	3				
84	LRS-LR-136-2	SUB_S O-SED	C	12/02/2012 16:50	3				
85	LRS-LR-136-3	SUB_S O-SED	C	12/02/2012 16:55	3				
86	LRS-LR-136-4	SUB_S O-SED	C	12/02/2012 17:00	3				
87	LRS-LR-136-5	SUB_S O-SED	C	12/02/2012 17:05	3				
88	LRS-LR-136	SOIL-SED	C	12/04/2012 10:39	3				

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

362242

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: _____

Address:	Site Code:	Project #:	City/State:	Phone #:
Site Address:	City:	State:	Zip:	
Lab P.M.:	PM Name:	Send EDD to:	PO #:	
Phone/Fax:	Phone/Fax:	CC Hardcopy to:	CC Hardcopy to:	
Lab Quote #:	PM Email:	CC Hardcopy to:		

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush	Event Complete?
88	LRS-LR-137-2	SUB_S O-SED	C	12/02/2012 12:10	3		X	Archive				
89	LRS-LR-137-3	SUB_S O-SED	C	12/02/2012 12:15	3		X	1613B - Dioxin/Furan				
90	LRS-LR-137-4	SUB_S O-SED	C	12/02/2012 12:17	3		X	Total Organic Carbon - COE 9060				
91	LRS-LR-137-5	SUB_S O-SED	C	12/02/2012 12:20	3		X					
92	LRS-LR-137	SOIL-SED	G	12/04/2012 09:14	3		X					
93	LRS-LR-RB-20121202	QAQC	G	12/02/2012 17:00	2		X					
94	LRS-LR-RB-20121203	QAQC	C	12/03/2012 17:30	2		X					
95	LRS-LR-RB-20121204	QAQC	C	12/04/2012 17:35	1		X					
96	LRS-LR-PS-SRM	SOIL-SED	C	11/26/2012 10:00	2		X					
97												

Task: Total # of Samples: 97 2012_LR_SED Event Complete?

Notes: F= Field Filtered , H= Hold

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-3

Login Number: 36242

List Source: TestAmerica Seattle

List Number: 1

Creator: Riley, Nicole

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Not requested on COC.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-3

Login Number: 36242

List Number: 1

Creator: Mantri, Anil

List Source: TestAmerica Sacramento

List Creation: 12/11/12 01:42 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	-0.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	False	Received extra samples not listed on COC.# 94 & 95
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-3

Login Number: 36242

List Number: 2

Creator: Cortes, Cesar C

List Source: TestAmerica Sacramento

List Creation: 01/10/13 02:54 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-3

Login Number: 36242

List Number: 3

Creator: Tecson, Jeffrey

List Source: TestAmerica Sacramento

List Creation: 01/16/13 11:09 AM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	622805, 622806
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	545176167352
Cooler Temperature is acceptable.	True	0.8
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-3

Login Number: 36242

List Number: 4

Creator: Tecson, Jeffrey

List Source: TestAmerica Sacramento

List Creation: 01/17/13 01:52 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	622807
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	0.4
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-3

Login Number: 36242

List Number: 5

Creator: Cortes, Cesar C

List Source: TestAmerica Sacramento

List Creation: 02/07/13 07:27 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Isotope Dilution Summary

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF1 (24-185)	PeCDF2 (21-178)	HxCDD1 (32-141)	HxCDD2 (28-130)	HxCDF1 (26-152)
580-36242-1	LRIS-LR-103-2	47	55	38	41	47	50	53	57
580-36242-1	LRIS-LR-103-2		50						
580-36242-6	LRIS-LR-106-2	78	92	68	72	82	92	91	96
580-36242-12	LRIS-LR-108-3	61	70	55	59	65	68	76	78
580-36242-12	LRIS-LR-108-3		63						
580-36242-23	LRIS-LR-119-2	65	77	60	62	73	76	73	86
580-36242-23	LRIS-LR-119-2		67						
580-36242-35	LRIS-LR-122	65	75	58	64	71	77	73	80
580-36242-35	LRIS-LR-122		67						
580-36242-40	LRIS-LR-125-2								
580-36242-40	LRIS-LR-125-2	61	69	54	58	64	70	68	73
580-36242-40	LRIS-LR-125-2		60						
580-36242-68	LRIS-LR-132	63	71	53	59	62	71	70	80
580-36242-68	LRIS-LR-132		59						
580-36242-73	LRIS-LR-133	50	59	43	46	52	58	54	61
580-36242-73	LRIS-LR-133		50						
580-36242-78	LRIS-LR-134	53	61	49	51	58	60	59	68
580-36242-78	LRIS-LR-134		57						
580-36242-78	LRIS-LR-134								
MB 320-8566/1-A	Method Blank	51	56	45	48	49	66	65	72

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxCDF2 (26-123)	HxCDF4 (29-147)	HxCDF3 (28-136)	HpCDD (23-140)	HpCDF1 (28-143)	HpCDF2 (26-138)	OCDD (17-157)	HxCDF1 (26-152)
580-36242-1	LRIS-LR-103-2	59	52	57	45	46	53	54	57
580-36242-1	LRIS-LR-103-2								
580-36242-6	LRIS-LR-106-2	97	86	98	77	85	95	91	96
580-36242-12	LRIS-LR-108-3	77	69	77	64	66	76		78
580-36242-12	LRIS-LR-108-3							64	
580-36242-12	LRIS-LR-108-3								
580-36242-23	LRIS-LR-119-2	82	73	83	70	68	81		86
580-36242-23	LRIS-LR-119-2							64	
580-36242-23	LRIS-LR-119-2								
580-36242-35	LRIS-LR-122	79	72	81		67	80		80
580-36242-35	LRIS-LR-122				46			95	
580-36242-35	LRIS-LR-122								
580-36242-40	LRIS-LR-125-2				71			103	
580-36242-40	LRIS-LR-125-2	72	67	69		60	78		73
580-36242-40	LRIS-LR-125-2								
580-36242-68	LRIS-LR-132	77	72	76	66	70	82	83	80
580-36242-68	LRIS-LR-132								
580-36242-73	LRIS-LR-133	57	54	60	48	51	60	64	61
580-36242-73	LRIS-LR-133								
580-36242-78	LRIS-LR-134	63	59	63	57	56	64		68
580-36242-78	LRIS-LR-134							57	
580-36242-78	LRIS-LR-134								
MB 320-8566/1-A	Method Blank	71	59	67	55	62	66	63	72

TestAmerica Seattle

Isotope Dilution Summary

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxCDF2 (21-159)	HxCDF2 (26-123)	HxCDF4 (17-205)	HxCDF4 (29-147)	HxCDF3 (22-176)	HxCDF3 (28-136)	HpCDD (23-140)	HpCDD (26-166)
580-36242-1	LRIS-LR-103-2		59		52		57	45	
580-36242-1	LRIS-LR-103-2								
580-36242-6	LRIS-LR-106-2		97		86		98	77	
580-36242-12	LRIS-LR-108-3		77		69		77	64	
580-36242-12	LRIS-LR-108-3								
580-36242-12	LRIS-LR-108-3								
580-36242-23	LRIS-LR-119-2		82		73		83	70	
580-36242-23	LRIS-LR-119-2								
580-36242-23	LRIS-LR-119-2								
580-36242-35	LRIS-LR-122		79		72		81		
580-36242-35	LRIS-LR-122							46	
580-36242-35	LRIS-LR-122								
580-36242-40	LRIS-LR-125-2							71	
580-36242-40	LRIS-LR-125-2		72		67		69		
580-36242-40	LRIS-LR-125-2								
580-36242-68	LRIS-LR-132		77		72		76	66	
580-36242-68	LRIS-LR-132								
580-36242-73	LRIS-LR-133		57		54		60	48	
580-36242-73	LRIS-LR-133								
580-36242-78	LRIS-LR-134		63		59		63	57	
580-36242-78	LRIS-LR-134								
580-36242-78	LRIS-LR-134								
MB 320-8566/1-A	Method Blank		71		59		67	55	

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		HpCDF1 (21-158)	HpCDF1 (28-143)	HpCDF2 (20-186)	HpCDF2 (26-138)	OCDD (13-199)	OCDD (17-157)
580-36242-1	LRIS-LR-103-2		46		53		54
580-36242-1	LRIS-LR-103-2						
580-36242-6	LRIS-LR-106-2		85		95		91
580-36242-12	LRIS-LR-108-3		66		76		
580-36242-12	LRIS-LR-108-3						64
580-36242-12	LRIS-LR-108-3						
580-36242-23	LRIS-LR-119-2		68		81		
580-36242-23	LRIS-LR-119-2						64
580-36242-23	LRIS-LR-119-2						
580-36242-35	LRIS-LR-122		67		80		
580-36242-35	LRIS-LR-122						95
580-36242-35	LRIS-LR-122						
580-36242-40	LRIS-LR-125-2						103
580-36242-40	LRIS-LR-125-2		60		78		
580-36242-40	LRIS-LR-125-2						
580-36242-68	LRIS-LR-132		70		82		83
580-36242-68	LRIS-LR-132						
580-36242-73	LRIS-LR-133		51		60		64
580-36242-73	LRIS-LR-133						
580-36242-78	LRIS-LR-134		56		64		
580-36242-78	LRIS-LR-134						57
580-36242-78	LRIS-LR-134						
MB 320-8566/1-A	Method Blank		62		66		63

TestAmerica Seattle

Isotope Dilution Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-3

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
 TCDF = 13C-2,3,7,8-TCDF
 PeCDD = 13C-1,2,3,7,8-PeCDD
 PeCDF1 = 13C-1,2,3,7,8-PeCDF
 PeCDF2 = 13C-2,3,4,7,8-PeCDF
 HxCDD1 = 13C-1,2,3,4,7,8-HxCDD
 HxCDD2 = 13C-1,2,3,6,7,8-HxCDD
 HxCDF1 = 13C-1,2,3,4,7,8-HxCDF
 HxCDF2 = 13C-1,2,3,6,7,8-HxCDF
 HxCDF4 = 13C-1,2,3,7,8,9-HxCDF
 HxCDF3 = 13C-2,3,4,6,7,8-HxCDF
 HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
 HpCDF1 = 13C-1,2,3,4,6,7,8-HpCDF
 HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
 OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF1 (21-192)	PeCDF2 (13-328)	HxCDD1 (21-193)	HxCDD2 (25-163)	HxCDF1 (19-202)
LCS 320-8566/2-A	Lab Control Sample	54	61	49	54	57	67	63	75

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HxCDF2 (21-159)	HxCDF4 (17-205)	HxCDF3 (22-176)	HpCDD (26-166)	HpCDF1 (21-158)	HpCDF2 (20-186)	OCDD (13-199)
LCS 320-8566/2-A	Lab Control Sample	71	65	70	61	65	70	71

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
 TCDF = 13C-2,3,7,8-TCDF
 PeCDD = 13C-1,2,3,7,8-PeCDD
 PeCDF1 = 13C-1,2,3,7,8-PeCDF
 PeCDF2 = 13C-2,3,4,7,8-PeCDF
 HxCDD1 = 13C-1,2,3,4,7,8-HxCDD
 HxCDD2 = 13C-1,2,3,6,7,8-HxCDD
 HxCDF1 = 13C-1,2,3,4,7,8-HxCDF
 HxCDF2 = 13C-1,2,3,6,7,8-HxCDF
 HxCDF4 = 13C-1,2,3,7,8,9-HxCDF
 HxCDF3 = 13C-2,3,4,6,7,8-HxCDF
 HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
 HpCDF1 = 13C-1,2,3,4,6,7,8-HpCDF
 HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
 OCDD = 13C-OCDD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-36242-4
Client Project/Site: Port of Ridgefield

For:

Maul Foster & Alongi Inc
2001 NW 19th Avenue, Suite 200
Portland, Oregon 97239

Attn: Ms. Madi Novak

Pamela R. Johnson

Authorized for release by:
1/15/2013 2:33:59 PM

Pam Johnson
Project Manager I
pamr.johnson@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Job ID: 580-36242-4

Laboratory: TestAmerica Seattle

Narrative

Comments

No additional comments.

Receipt

The samples were received on 12/7/2012 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 8 coolers at receipt time were 2.6° C, 2.9° C, 3.4° C, 4.3° C, 4.5° C, 4.6° C, 5.9° C and 6.0° C.

General Chemistry - Method 9060 PSEP

Upon removal from the freezer, sample LRIS-LR-133 (580-36242-73) was too hard to be broken down to be weighed for analysis. The sample was then allowed to thaw slightly to be able to be used for analysis. While thawing, the bottom of the sample container cracked, the analyst placed the sample within a new non compromised container and relabeled the new jar before placing the sample back in the freezer for archiving purposes.

No other analytical or quality issues were noted.



Definitions/Glossary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Client Sample ID: LRIS-LR-103-2

Lab Sample ID: 580-36242-1

Date Collected: 12/03/12 13:30

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	10000		2000	610	mg/Kg			01/14/13 17:31	1

- 1
- 2
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Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Client Sample ID: LRIS-LR-106-2

Lab Sample ID: 580-36242-6

Date Collected: 12/02/12 17:25

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	5300		2000	610	mg/Kg			01/14/13 17:35	1

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Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Client Sample ID: LRIS-LR-108-3

Lab Sample ID: 580-36242-12

Date Collected: 12/03/12 11:25

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	12000		2000	610	mg/Kg			01/14/13 17:40	1

- 1
- 2
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Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Client Sample ID: LRIS-LR-119-2

Lab Sample ID: 580-36242-23

Date Collected: 12/03/12 14:30

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	16000		2000	610	mg/Kg			01/14/13 17:44	1

- 1
- 2
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Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Client Sample ID: LRIS-LR-122

Lab Sample ID: 580-36242-35

Date Collected: 12/04/12 11:27

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	8000		2000	610	mg/Kg			01/14/13 17:54	1

- 1
- 2
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Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Client Sample ID: LRIS-LR-125-2

Lab Sample ID: 580-36242-40

Date Collected: 12/02/12 13:10

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	6700		2000	610	mg/Kg			01/14/13 17:58	1

- 1
- 2
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Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Client Sample ID: LRIS-LR-132

Lab Sample ID: 580-36242-68

Date Collected: 12/04/12 12:06

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	15000		2000	610	mg/Kg			01/14/13 18:02	1

- 1
- 2
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Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Client Sample ID: LRIS-LR-133

Lab Sample ID: 580-36242-73

Date Collected: 12/04/12 12:49

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	14000		2000	610	mg/Kg			01/14/13 18:07	1

- 1
- 2
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Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Client Sample ID: LRIS-LR-134

Lab Sample ID: 580-36242-78

Date Collected: 12/04/12 13:10

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	15000		2000	610	mg/Kg			01/14/13 18:11	1

- 1
- 2
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QC Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Method: 9060_PSEP - TOC (Puget Sound)

Lab Sample ID: MB 580-128122/3

Matrix: Solid

Analysis Batch: 128122

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		2000	610	mg/Kg			01/14/13 16:45	1

Lab Sample ID: LCS 580-128122/4

Matrix: Solid

Analysis Batch: 128122

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	2850	2880		mg/Kg		101	27.8 - 170

Lab Sample ID: LCSD 580-128122/5

Matrix: Solid

Analysis Batch: 128122

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	2850	2830		mg/Kg		99	27.8 - 170	2	35

Lab Chronicle

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Client Sample ID: LRIS-LR-103-2

Lab Sample ID: 580-36242-1

Date Collected: 12/03/12 13:30

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	128122	01/14/13 17:31	RB	TAL SEA

Client Sample ID: LRIS-LR-106-2

Lab Sample ID: 580-36242-6

Date Collected: 12/02/12 17:25

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	128122	01/14/13 17:35	RB	TAL SEA

Client Sample ID: LRIS-LR-108-3

Lab Sample ID: 580-36242-12

Date Collected: 12/03/12 11:25

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	128122	01/14/13 17:40	RB	TAL SEA

Client Sample ID: LRIS-LR-119-2

Lab Sample ID: 580-36242-23

Date Collected: 12/03/12 14:30

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	128122	01/14/13 17:44	RB	TAL SEA

Client Sample ID: LRIS-LR-122

Lab Sample ID: 580-36242-35

Date Collected: 12/04/12 11:27

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	128122	01/14/13 17:54	RB	TAL SEA

Client Sample ID: LRIS-LR-125-2

Lab Sample ID: 580-36242-40

Date Collected: 12/02/12 13:10

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	128122	01/14/13 17:58	RB	TAL SEA

Lab Chronicle

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Client Sample ID: LRIS-LR-132

Lab Sample ID: 580-36242-68

Date Collected: 12/04/12 12:06

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	128122	01/14/13 18:02	RB	TAL SEA

Client Sample ID: LRIS-LR-133

Lab Sample ID: 580-36242-73

Date Collected: 12/04/12 12:49

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	128122	01/14/13 18:07	RB	TAL SEA

Client Sample ID: LRIS-LR-134

Lab Sample ID: 580-36242-78

Date Collected: 12/04/12 13:10

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	128122	01/14/13 18:11	RB	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Certification Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-04-13
California	NELAP	9	1115CA	01-31-13
L-A-B	DoD ELAP		L2236	01-19-13
L-A-B	ISO/IEC 17025		L2236	01-19-13
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-13
USDA	Federal		P330-11-00222	05-20-14
Washington	State Program	10	C553	02-17-13

Sample Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-36242-1	LRIS-LR-103-2	Solid	12/03/12 13:30	12/07/12 08:50
580-36242-6	LRIS-LR-106-2	Solid	12/02/12 17:25	12/07/12 08:50
580-36242-12	LRIS-LR-108-3	Solid	12/03/12 11:25	12/07/12 08:50
580-36242-23	LRIS-LR-119-2	Solid	12/03/12 14:30	12/07/12 08:50
580-36242-35	LRIS-LR-122	Solid	12/04/12 11:27	12/07/12 08:50
580-36242-40	LRIS-LR-125-2	Solid	12/02/12 13:10	12/07/12 08:50
580-36242-68	LRIS-LR-132	Solid	12/04/12 12:06	12/07/12 08:50
580-36242-73	LRIS-LR-133	Solid	12/04/12 12:49	12/07/12 08:50
580-36242-78	LRIS-LR-134	Solid	12/04/12 13:10	12/07/12 08:50

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Page: 1 of 9
Cooler # 8461

Lab Information: Lab: Test America Site Code: Lake River Industrial Site
Address: 5735 8th Street E, Tacoma, WA 98424
Site Address: 111 W. Division St
City: Puyallup, WA
State: WA
Zip: 98404
City/State: Puyallup, WA
Phone #: 253-841-1111
Send Invoice to: Laurie Olin, Madi Novak
Send EDD to: Erik Navajo
CC Hardcopy to: Erik Navajo, Madi Novak
CC Hardcopy to: Erik Navajo, Madi Novak

Project Information: Project # 9003.01.40
Other Information: PO #
Task: TAT Regular Rush
Total # of Samples: 97
Notes: F= Field Filtered, H= Hold
2012_LR_SED
Event Complete?

ITEM #	Field Sample No. / Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	DATE	TIME	Sample Receipt Conditions	Temp in OC	Samples on Ice?	Sample intact?	Trip Blank?
1	LRS-LR-103-2	SUB_S O-SED	C	12/03/2012 13:30	3		ARCHIVE			12/3/12	08:50	Y/N	Y/N	Y/N	Y/N	Y/N
2	LRS-LR-103-3	SUB_S O-SED	C	12/03/2012 13:35	3		1613B - Dioxin/Furan					Y/N	Y/N	Y/N	Y/N	Y/N
3	LRS-LR-103-4	SUB_S O-SED	C	12/03/2012 13:40	3		Total Organic Carbon - COE 9060					Y/N	Y/N	Y/N	Y/N	Y/N
4	LRS-LR-103-5	SUB_S O-SED	C	12/03/2012 13:45	3							Y/N	Y/N	Y/N	Y/N	Y/N
5	LRS-LR-103	SOIL-SED	G	12/04/2012 11:55	3							Y/N	Y/N	Y/N	Y/N	Y/N
6	LRS-LR-106-2	SUB_S O-SED	G	12/02/2012 17:25	3							Y/N	Y/N	Y/N	Y/N	Y/N
7	LRS-LR-106-3	SUB_S O-SED	C	12/02/2012 17:30	3							Y/N	Y/N	Y/N	Y/N	Y/N
8	LRS-LR-106-4	SUB_S O-SED	C	12/02/2012 17:35	3							Y/N	Y/N	Y/N	Y/N	Y/N
9	LRS-LR-106-5	SUB_S O-SED	C	12/02/2012 17:40	3							Y/N	Y/N	Y/N	Y/N	Y/N
10	LRS-LR-106	SOIL-SED	C	12/04/2012 11:42	3							Y/N	Y/N	Y/N	Y/N	Y/N
11	LRS-LR-108-2	SUB_S O-SED	C	12/03/2012 11:20	3							Y/N	Y/N	Y/N	Y/N	Y/N

Additional Comments/Special Instructions:

REINQUISHED BY / AFFILIATION: Erik Navajo / MFA
DATE: 12/3/12
TIME: 08:50
ACCEPTED BY / AFFILIATION: Madi Novak / TACOMA
DATE: 12/3/12
TIME: 08:50

Company: _____ DATE/TIME: _____
Tracking #: _____

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Lab Information:			Project Information:			Other Information:		
Lab:	Unknown Laboratory	Site Code:	Lake River Industrial Site	Address:		City/State:		Phone #:
Address:		Project #:		City/State:				
Lab P.M.:		City:	State, Zip:	PO #:				
Phone/Fax:	/	P.M. Name:		Send EDD to:				
P.M. email:		Phone/Fax:		CC Hardcopy to:				
Lab Quote #:		P.M. Email:		CC Hardcopy to:				

ITEM #	Field Sample No. / Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush	Event Complete?
12	LRS-LR-108-3	SUB_S O-SED	C	12/03/2012 11:25	3		X		Archive			
13	LRS-LR-108-4	SUB_S O-SED	C	12/03/2012 11:30	3		X		1613B - Dioxin/Furan			
14	LRS-LR-108-5	SUB_S O-SED	C	12/03/2012 11:35	3		X		Total Organic Carbon - COE 9060			
15	LRS-LR-109-2	SUB_S O-SED	C	12/02/2012 15:10	3		X					
16	LRS-LR-109-3	SUB_S O-SED	G	12/02/2012 15:15	3		X					
17	LRS-LR-109-4	SUB_S O-SED	G	12/02/2012 15:20	3		X					
18	LRS-LR-109-5	SUB_S O-SED	C	12/02/2012 15:25	3		X					
19	LRS-LR-110-2	SUB_S O-SED	C	12/03/2012 10:30	3		X					
20	LRS-LR-110-3	SUB_S O-SED	C	12/03/2012 10:35	3		X					
21	LRS-LR-110-4	SUB_S O-SED	C	12/03/2012 10:40	3		X					
22	LRS-LR-110-5	SUB_S O-SED	C	12/03/2012 10:45	3		X					

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Lab Information:				Project Information:				Other Information:			
Lab:	Unknown Laboratory	Site Code:	Lake River Industrial Site	Send Invoice to:		Address:		City/State:		Phone #:	
Address:		Project #:		City/State:		City/State:		City/State:		City/State:	
Lab PIV:		City:		State:		State:		State:		State:	
Phone/Fax:	/	PIV Name:		Send EDD to:		Send EDD to:		Send EDD to:		Send EDD to:	
PIV email:		Phone/Fax:		CC Hardcopy to:		CC Hardcopy to:		CC Hardcopy to:		CC Hardcopy to:	
Lab Quote #:		PIV Email:		CC Hardcopy to:		CC Hardcopy to:		CC Hardcopy to:		CC Hardcopy to:	
ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush
23	LRS-LR-119-2	SUB_S O-SED	C	12/03/2012 14:30	3		Archive				
24	LRS-LR-119-3	SUB_S O-SED	C	12/03/2012 14:35	3		1613B - Dioxin/Furan				
25	LRS-LR-119-4	SUB_S O-SED	C	12/03/2012 14:40	3		Total Organic Carbon - COE 9060				
26	LRS-LR-119-5	SUB_S O-SED	C	12/03/2012 14:45	3						
27	LRS-LR-120-2	SUB_S O-SED	G	12/03/2012 12:20	3						
28	LRS-LR-120-3	SUB_S O-SED	G	12/03/2012 12:25	3						
29	LRS-LR-120-4	SUB_S O-SED	C	12/03/2012 12:30	3						
30	LRS-LR-120-5	SUB_S O-SED	C	12/03/2012 12:35	3						
31	LRS-LR-122-2	SUB_S O-SED	C	12/03/2012 15:22	3						
32	LRS-LR-122-3	SUB_S O-SED	C	12/03/2012 15:22	3						
33	LRS-LR-122-4	SUB_S O-SED	C	12/03/2012 15:22	3						

Task:	Total # of Samples: 97		2012_LR_SED	
Notes:	F= Field Filtered , H= Hold	Rush	Event Complete?	

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Lab Information: Project Information: Other Information:

Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Address:	City/State:	Phone #:
Address:	Project #	Site Address	City/State:	Phone #:
Lab PIV: _____	City: _____	State: Zip _____	PO # _____	Send EDD to _____
Phone/Fax: _____	PIV Name _____	Phone/Fax: _____	CC Hardcopy to _____	CC Hardcopy to _____
Lab Quote #: _____	PIV Email: _____			

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Notes: F= Field Filtered , H= Hold	Rush	Event Complete?
34	LRS-LR-122-5	SUB_S O-SED	C	12/03/2012 15:22	3		X	Archive					
35	LRS-LR-122	SUB_S O-SED	C	12/04/2012 11:27	3		X	1613B - Dioxin/Furan					
36	LRS-LR-124-2	SUB_S O-SED	C	12/03/2012 09:50	3		X	Total Organic Carbon - COE 9060					
37	LRS-LR-124-3	SUB_S O-SED	C	12/03/2012 10:00	3		X						
38	LRS-LR-124-4	SUB_S O-SED	G	12/03/2012 10:05	3		X						
39	LRS-LR-124-5	SUB_S O-SED	G	12/03/2012 10:10	3		X						
40	LRS-LR-125-2	SUB_S O-SED	C	12/02/2012 13:10	3		X						
41	LRS-LR-125-3	SUB_S O-SED	C	12/02/2012 13:15	3		X						
42	LRS-LR-125-4	SUB_S O-SED	C	12/02/2012 13:20	3		X						
43	LRS-LR-126-2	SUB_S O-SED	C	12/02/2012 12:40	3		X						
44	LRS-LR-126-3	SUB_S O-SED	C	12/02/2012 12:45	3		X						

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36242

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: **Task:** 2012_LR_SED

Address: Site Code: Project # Site Address City State, Zip PO # Send EDD to CC Hardcopy to CC Hardcopy to Phone #:

Lab PM: City State, Zip PM Name PM Email: Lab Quote #:

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Notes: F= Field Filtered, H= Hold	Rush	Event Complete?
46	LRS-LR-126-4	SUB_S O-SED	C	12/02/2012 12:47	3		Archive						
46	LRS-LR-126-5	SUB_S O-SED	C	12/02/2012 12:50	3		1613B - Dioxin/Furan						
47	LRS-LR-126	SOIL- SED	C	12/04/2012 08:56	3		Total Organic Carbon - COE 9060						
48	LRS-LR-129-2	SUB_S O-SED	C	12/02/2012 13:50	3								
49	LRS-LR-129-3	SUB_S O-SED	G	12/02/2012 13:55	3								
49	LRS-LR-129-4	SUB_S O-SED	G	12/02/2012 14:00	3								
50	LRS-LR-129-5	SUB_S O-SED	C	12/02/2012 14:05	3								
51	LRS-LR-129	SOIL- SED	C	12/04/2012 10:10	3								
52	LRS-LR-130-2	SUB_S O-SED	C	12/02/2012 14:40	3								
53	LRS-LR-130-FD	QAQC		12/02/2012 14:40	3								
54	LRS-LR-130-3	SUB_S O-SED		12/02/2012 14:45	3								
55													

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Lab: Unknown Laboratory Address: Site Code: Lake River Industrial Site
Project Information: Project # Site Address City/State/Zip
Other Information: Send Invoice to: Address: City/State/Zip
 Send EDD to PO #
 CC Hardcopy to CC Hardcopy to
 PM Name
 Phone/Fax: PM Email:
 Lab Quote #:

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush
56	LRS-LR-130-4	SUB_S O-SED	C	12/02/2012 14:50	3		Archive				
57	LRS-LR-130-5	SUB_S O-SED	C	12/02/2012 14:55	3		1613B - Dioxin/Furan				
58	LRS-LR-130	SOIL- SED	C	12/04/2012 10:24	3		Total Organic Carbon - COE 9060				
59	LRS-LR-130-FD-1	QAQC	C	12/04/2012 10:24	3						
60	LRS-LR-131-2	SUB_S O-SED	G	12/02/2012 16:30	3						
61	LRS-LR-131-3	SUB_S O-SED	G	12/02/2012 16:35	3						
62	LRS-LR-131-4	SUB_S O-SED	C	12/02/2012 16:40	3						
63	LRS-LR-131	SOIL- SED	C	12/04/2012 11:15	3						
64	LRS-LR-132-2	SUB_S O-SED	C	12/03/2012 14:00	3						
65	LRS-LR-132-3	SUB_S O-SED	C	12/03/2012 14:05	3						
66	LRS-LR-132-4	SUB_S O-SED	C	12/03/2012 14:10	3						

Task: Total # of Samples: 97 2012_LR_SED Event Complete?
 Notes: F= Field Filtered, H= Hold
 Rush

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Lab: Unknown Laboratory **Project Information:** Site Code: Lake River Industrial Site **Other Information:** Send Invoice to: Task: 2012_LR_SED
Address: Project # Address: Total # of Samples: 97 Event Complete?

City: State: Zip City/State: Phone #: TAT Rush Notes: F= Field Filtered, H= Hold

Lab PVI: PVI Name PO # Send EDD to Preservative Lab Notes

Phone/Fax: Phone/Fax: CC Hardcopy to CC Hardcopy to

PVI Email: PVI Email:

Lab Quote #:

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis		Preservative		Lab Notes	
							Archive	1613B - Dioxin/Furan	Total Organic Carbon - COE 9060			
67	LRS-LR-132-5	SUB_S O-SED	C	12/03/2012 14:15	3		X					
68	LRS-LR-132	SOIL-SED	C	12/04/2012 12:06	3		X					
69	LRS-LR-133-2	SUB_S O-SED	C	12/03/2012 15:15	3		X	X				
70	LRS-LR-133-3	SUB_S O-SED	C	12/03/2012 15:25	3		X					
71	LRS-LR-133-4	SUB_S O-SED	G	12/03/2012 15:30	3		X					
72	LRS-LR-133-5	SUB_S O-SED	G	12/03/2012 15:30	3		X					
73	LRS-LR-133	SOIL-SED	C	12/04/2012 12:49	3		X					
74	LRS-LR-134-2	SUB_S O-SED	C	12/02/2012 10:20	3		X	X				
75	LRS-LR-134-3	SUB_S O-SED	C	12/02/2012 10:28	3		X					
76	LRS-LR-134-4	SUB_S O-SED	C	12/02/2012 10:30	3		X					
77	LRS-LR-134-5	SUB_S O-SED	C	12/02/2012 10:35	3		X					

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information:

Project Information:

Other Information:

Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Send Invoice to:	Address:	City/State:	Phone #:
Address:	Project #	City/State:	City/State:	City/State:	Phone #:
Lab Piv:	City:	State:	Zip:	PO #:	
Phone/Fax: /	PM Name	Send EDD to			
PM Email:	Phone/Fax:	CC Hardcopy to			
Lab Quote #:	PM Email:	CC Hardcopy to			

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush	Event Complete?
78	LRS-LR-134	SOIL-SED	C	12/04/2012 13:10	3		Archive					
79	LRS-LR-135-2	SUB_S O-SED	C	12/03/2012 15:45	3		1613B - Dioxin/Furan					
80	LRS-LR-135-3	SUB_S O-SED	C	12/03/2012 15:50	3		Total Organic Carbon - COE 9060					
81	LRS-LR-135-4	SUB_S O-SED	C	12/03/2012 15:55	3							
82	LRS-LR-135-5	SUB_S O-SED	G	12/03/2012 16:00	3							
83	LRS-LR-135	SOIL-SED	G	12/04/2012 13:01	3							
84	LRS-LR-136-2	SUB_S O-SED	C	12/02/2012 16:50	3							
85	LRS-LR-136-3	SUB_S O-SED	C	12/02/2012 16:55	3							
86	LRS-LR-136-4	SUB_S O-SED	C	12/02/2012 17:00	3							
87	LRS-LR-136-5	SUB_S O-SED	C	12/02/2012 17:05	3							
88	LRS-LR-136	SOIL-SED	C	12/04/2012 10:39	3							

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

362242

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: _____

Lab P.M.:	City:	State:	Zip:	PO #:	Send EDD to:
Phone/Fax: /	PM Name:				CC Hardcopy to:
PM Email:	Phone/Fax:				CC Hardcopy to:
Lab Quote #:	PM Email:				

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush	Event Complete?
88	LRS-LR-137-2	SUB_S O-SED	C	12/02/2012 12:10	3		Archive					
89	LRS-LR-137-3	SUB_S O-SED	C	12/02/2012 12:15	3		1613B - Dioxin/Furan					
90	LRS-LR-137-4	SUB_S O-SED	C	12/02/2012 12:17	3		Total Organic Carbon - COE 9060					
91	LRS-LR-137-5	SUB_S O-SED	C	12/02/2012 12:20	3							
92	LRS-LR-137	SOIL-SED	G	12/04/2012 09:14	3							
93	LRS-LR-RB-20121202	QAQC	G	12/02/2012 17:00	2							
94	LRS-LR-RB-20121203	QAQC	C	12/03/2012 17:30	2							
95	LRS-LR-RB-20121204	QAQC	C	12/04/2012 17:35	1							
96	LRS-LR-PS-SRM	SOIL-SED	C	11/26/2012 10:00	2							
97												

Task: _____
Total # of Samples: 97 2012_LR_SED
Notes: F= Field Filtered , H= Hold

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-4

Login Number: 36242

List Number: 1

Creator: Riley, Nicole

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Not requested on COC.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-36242-5

Client Project/Site: Port of Ridgefield

For:

Maul Foster & Alongi Inc
2001 NW 19th Avenue, Suite 200
Portland, Oregon 97239

Attn: Ms. Madi Novak

Pamela R. Johnson

Authorized for release by:
1/31/2013 11:01:08 AM

Pam Johnson
Project Manager I
pamr.johnson@testamericainc.com

LINKS

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results through
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Have a Question?



Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Job ID: 580-36242-5

Laboratory: TestAmerica Seattle

Narrative

Comments

No additional comments.

Receipt

The samples were received on 12/7/2012 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 8 coolers at receipt time were 2.6° C, 2.9° C, 3.4° C, 4.3° C, 4.5° C, 4.6° C, 5.9° C and 6.0° C.

Except:

The container labels for the following sample LRIS-LR-122-3 (580-36242-32) did not match the information listed on the Chain-of-Custody (COC).

Sample LRIS-LR-122-3 (580-36242-32): The container labels list a time of 11:50 for sample 580-36242-32 respectively. The Chain-of-Custody (COC) lists a time of 15:22 for this sample, the sample was logged in per the Chain-of-Custody (COC).

Dioxin - Method 1613B

Ion abundance ratios are outside criteria for the following samples: (MB 320-8878/1-A), LRIS-LR-110-4 (580-36242-21), LRIS-LR-119-3 (580-36242-24), LRIS-LR-122-3 (580-36242-32), LRIS-LR-124-3 (580-36242-37), LRIS-LR-125-3 (580-36242-41), LRIS-LR-132-5 (580-36242-67), LRIS-LR-PS-SRM (580-36242-97). Quantitation is based on the theoretical ion abundance ratio; therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC).

Ion abundance ratios are outside criteria for the following samples: (MB 320-8878/1-A), LRIS-LR-110-4 (580-36242-21), LRIS-LR-119-3 (580-36242-24), LRIS-LR-122-3 (580-36242-32), LRIS-LR-124-3 (580-36242-37), LRIS-LR-125-3 (580-36242-41), LRIS-LR-132-5 (580-36242-67), LRIS-LR-PS-SRM (580-36242-97). Quantitation is based on the theoretical ion abundance ratio; therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC).

The following samples LRIS-LR-110-4 (580-36242-21), LRIS-LR-124-3 (580-36242-37) were diluted to bring the concentration of target analytes within the calibration range. Elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

General Chemistry

No analytical or quality issues were noted.

Dioxin Prep

No analytical or quality issues were noted.

Definitions/Glossary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The isomer is qualified as positively identified, but at an estimated quantity because the quantitation is based on the theoretical ratio for these samples.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Client Sample ID: LRIS-LR-110-4

Lab Sample ID: 580-36242-21

Date Collected: 12/03/12 10:40

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 61.0

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	1.4		0.65	0.043	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
2,3,7,8-TCDF	2.4		0.65	0.17	pg/g	*	01/17/13 16:42	01/22/13 14:31	1
1,2,3,7,8-PeCDD	7.1		3.3	0.10	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
1,2,3,7,8-PeCDF	6.4		3.3	0.090	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
2,3,4,7,8-PeCDF	5.2		3.3	0.087	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
1,2,3,4,7,8-HxCDD	20	B	3.3	0.087	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
1,2,3,6,7,8-HxCDD	63	B	3.3	0.091	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
1,2,3,7,8,9-HxCDD	45	B	3.3	0.076	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
1,2,3,4,7,8-HxCDF	21	B	3.3	0.15	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
1,2,3,6,7,8-HxCDF	12	B	3.3	0.16	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
1,2,3,7,8,9-HxCDF	1.2	J	3.3	0.18	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
2,3,4,6,7,8-HxCDF	5.7	B	3.3	0.16	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
1,2,3,4,6,7,8-HpCDF	110	B	3.3	0.54	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
1,2,3,4,7,8,9-HpCDF	6.9	B	3.3	0.66	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
OCDF	130	B	6.5	0.12	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
Total TCDD	41	B q	0.65	0.043	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
Total TCDF	35		0.65	0.070	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
Total PeCDD	110		3.3	0.10	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
Total PeCDF	91	q	3.3	0.088	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
Total HxCDD	500	B	3.3	0.085	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
Total HxCDF	320	B	3.3	0.16	pg/g	*	01/17/13 16:42	01/22/13 04:01	1
Total HpCDF	350	B	3.3	0.60	pg/g	*	01/17/13 16:42	01/22/13 04:01	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	85		25 - 164	01/17/13 16:42	01/22/13 04:01	1
13C-2,3,7,8-TCDF	92		24 - 169	01/17/13 16:42	01/22/13 04:01	1
13C-2,3,7,8-TCDF	64		24 - 169	01/17/13 16:42	01/22/13 14:31	1
13C-1,2,3,7,8-PeCDD	84		25 - 181	01/17/13 16:42	01/22/13 04:01	1
13C-1,2,3,7,8-PeCDF	88		24 - 185	01/17/13 16:42	01/22/13 04:01	1
13C-2,3,4,7,8-PeCDF	96		21 - 178	01/17/13 16:42	01/22/13 04:01	1
13C-1,2,3,4,7,8-HxCDD	88		32 - 141	01/17/13 16:42	01/22/13 04:01	1
13C-1,2,3,6,7,8-HxCDD	83		28 - 130	01/17/13 16:42	01/22/13 04:01	1
13C-1,2,3,4,7,8-HxCDF	86		26 - 152	01/17/13 16:42	01/22/13 04:01	1
13C-1,2,3,6,7,8-HxCDF	81		26 - 123	01/17/13 16:42	01/22/13 04:01	1
13C-1,2,3,7,8,9-HxCDF	78		29 - 147	01/17/13 16:42	01/22/13 04:01	1
13C-2,3,4,6,7,8-HxCDF	80		28 - 136	01/17/13 16:42	01/22/13 04:01	1
13C-1,2,3,4,6,7,8-HpCDF	67		28 - 143	01/17/13 16:42	01/22/13 04:01	1
13C-1,2,3,4,7,8,9-HpCDF	82		26 - 138	01/17/13 16:42	01/22/13 04:01	1
13C-OCDD	95		17 - 157	01/17/13 16:42	01/22/13 04:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	99		35 - 197	01/17/13 16:42	01/22/13 04:01	1
37Cl4-2,3,7,8-TCDD	88		35 - 197	01/17/13 16:42	01/22/13 14:31	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	1400	B	33	19	pg/g	*	01/17/13 16:42	01/25/13 04:07	10
OCDD	11000	B	65	34	pg/g	*	01/17/13 16:42	01/25/13 04:07	10
Total HpCDD	3000	B	33	19	pg/g	*	01/17/13 16:42	01/25/13 04:07	10

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Client Sample ID: LRIS-LR-110-4

Lab Sample ID: 580-36242-21

Date Collected: 12/03/12 10:40

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 61.0

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C-1,2,3,4,6,7,8-HpCDD	83		23 - 140	01/17/13 16:42	01/25/13 04:07	10
13C-OCDD	99		17 - 157	01/17/13 16:42	01/25/13 04:07	10

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
37Cl4-2,3,7,8-TCDD	91		35 - 197	01/17/13 16:42	01/25/13 04:07	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	61		0.10	0.10	%			01/16/13 15:11	1
Percent Moisture	39		0.10	0.10	%			01/16/13 15:11	1



Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Client Sample ID: LRIS-LR-119-3

Lab Sample ID: 580-36242-24

Date Collected: 12/03/12 14:35

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 63.2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.20	J q	0.63	0.036	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
2,3,7,8-TCDF	1.2		0.63	0.16	pg/g	*	01/17/13 16:42	01/22/13 15:09	1
1,2,3,7,8-PeCDD	0.42	J	3.2	0.076	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
1,2,3,7,8-PeCDF	1.0	J	3.2	0.057	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
2,3,4,7,8-PeCDF	1.0	J	3.2	0.061	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
1,2,3,4,7,8-HxCDD	0.94	J B	3.2	0.047	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
1,2,3,6,7,8-HxCDD	4.8	B	3.2	0.053	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
1,2,3,7,8,9-HxCDD	2.1	J B	3.2	0.042	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
1,2,3,4,7,8-HxCDF	2.8	J B	3.2	0.046	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
1,2,3,6,7,8-HxCDF	1.9	J B	3.2	0.045	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
1,2,3,7,8,9-HxCDF	0.15	J q	3.2	0.050	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
2,3,4,6,7,8-HxCDF	1.0	J B	3.2	0.041	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
1,2,3,4,6,7,8-HpCDD	99	B	3.2	0.49	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
1,2,3,4,6,7,8-HpCDF	17	B	3.2	0.11	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
1,2,3,4,7,8,9-HpCDF	0.78	J B	3.2	0.14	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
OCDD	1100	B	6.3	0.47	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
OCDF	20	B	6.3	0.086	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
Total TCDD	4.5	B q	0.63	0.036	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
Total TCDF	12	q	0.63	0.043	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
Total PeCDD	5.4	q	3.2	0.076	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
Total PeCDF	14	q	3.2	0.059	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
Total HxCDD	33	B q	3.2	0.047	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
Total HxCDF	43	B q	3.2	0.045	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
Total HpCDD	230	B	3.2	0.49	pg/g	*	01/17/13 16:42	01/22/13 04:43	1
Total HpCDF	50	B	3.2	0.12	pg/g	*	01/17/13 16:42	01/22/13 04:43	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	78		25 - 164	01/17/13 16:42	01/22/13 04:43	1
13C-2,3,7,8-TCDF	84		24 - 169	01/17/13 16:42	01/22/13 04:43	1
13C-2,3,7,8-TCDF	61		24 - 169	01/17/13 16:42	01/22/13 15:09	1
13C-1,2,3,7,8-PeCDD	79		25 - 181	01/17/13 16:42	01/22/13 04:43	1
13C-1,2,3,7,8-PeCDF	80		24 - 185	01/17/13 16:42	01/22/13 04:43	1
13C-2,3,4,7,8-PeCDF	84		21 - 178	01/17/13 16:42	01/22/13 04:43	1
13C-1,2,3,4,7,8-HxCDD	79		32 - 141	01/17/13 16:42	01/22/13 04:43	1
13C-1,2,3,6,7,8-HxCDD	81		28 - 130	01/17/13 16:42	01/22/13 04:43	1
13C-1,2,3,4,7,8-HxCDF	83		26 - 152	01/17/13 16:42	01/22/13 04:43	1
13C-1,2,3,6,7,8-HxCDF	77		26 - 123	01/17/13 16:42	01/22/13 04:43	1
13C-1,2,3,7,8,9-HxCDF	75		29 - 147	01/17/13 16:42	01/22/13 04:43	1
13C-2,3,4,6,7,8-HxCDF	77		28 - 136	01/17/13 16:42	01/22/13 04:43	1
13C-1,2,3,4,6,7,8-HpCDD	64		23 - 140	01/17/13 16:42	01/22/13 04:43	1
13C-1,2,3,4,6,7,8-HpCDF	62		28 - 143	01/17/13 16:42	01/22/13 04:43	1
13C-1,2,3,4,7,8,9-HpCDF	76		26 - 138	01/17/13 16:42	01/22/13 04:43	1
13C-OCDD	74		17 - 157	01/17/13 16:42	01/22/13 04:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	98		35 - 197	01/17/13 16:42	01/22/13 04:43	1
37Cl4-2,3,7,8-TCDD	83		35 - 197	01/17/13 16:42	01/22/13 15:09	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Client Sample ID: LRIS-LR-119-3

Lab Sample ID: 580-36242-24

Date Collected: 12/03/12 14:35

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	63		0.10	0.10	%			01/21/13 16:20	1
Percent Moisture	37		0.10	0.10	%			01/21/13 16:20	1

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Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Client Sample ID: LRIS-LR-122-3

Lab Sample ID: 580-36242-32

Date Collected: 12/03/12 15:22

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 67.0

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.59	0.023	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
2,3,7,8-TCDF	0.57	J	0.59	0.033	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
1,2,3,7,8-PeCDD	ND		3.0	0.051	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
1,2,3,7,8-PeCDF	0.41	J	3.0	0.039	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
2,3,4,7,8-PeCDF	0.49	J	3.0	0.037	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
1,2,3,4,7,8-HxCDD	0.10	J B q	3.0	0.026	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
1,2,3,6,7,8-HxCDD	2.2	J B	3.0	0.029	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
1,2,3,7,8,9-HxCDD	0.52	J B	3.0	0.023	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
1,2,3,4,7,8-HxCDF	2.1	J B	3.0	0.028	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
1,2,3,6,7,8-HxCDF	0.99	J B	3.0	0.029	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
1,2,3,7,8,9-HxCDF	0.062	J q	3.0	0.032	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
2,3,4,6,7,8-HxCDF	0.46	J B	3.0	0.026	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
1,2,3,4,6,7,8-HpCDD	47	B	3.0	0.26	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
1,2,3,4,6,7,8-HpCDF	7.0	B	3.0	0.060	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
1,2,3,4,7,8,9-HpCDF	0.38	J B	3.0	0.080	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
OCDD	560	B	5.9	0.31	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
OCDF	5.2	J B	5.9	0.044	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
Total TCDD	1.1	B q	0.59	0.023	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
Total TCDF	3.7	q	0.59	0.033	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
Total PeCDD	2.5	J q	3.0	0.051	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
Total PeCDF	7.6	q	3.0	0.038	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
Total HxCDD	13	B q	3.0	0.026	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
Total HxCDF	24	B q	3.0	0.029	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
Total HpCDD	98	B	3.0	0.26	pg/g	*	01/17/13 16:42	01/22/13 05:26	1
Total HpCDF	21	B	3.0	0.070	pg/g	*	01/17/13 16:42	01/22/13 05:26	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	82		25 - 164	01/17/13 16:42	01/22/13 05:26	1
13C-2,3,7,8-TCDF	88		24 - 169	01/17/13 16:42	01/22/13 05:26	1
13C-1,2,3,7,8-PeCDD	81		25 - 181	01/17/13 16:42	01/22/13 05:26	1
13C-1,2,3,7,8-PeCDF	82		24 - 185	01/17/13 16:42	01/22/13 05:26	1
13C-2,3,4,7,8-PeCDF	89		21 - 178	01/17/13 16:42	01/22/13 05:26	1
13C-1,2,3,4,7,8-HxCDD	88		32 - 141	01/17/13 16:42	01/22/13 05:26	1
13C-1,2,3,6,7,8-HxCDD	90		28 - 130	01/17/13 16:42	01/22/13 05:26	1
13C-1,2,3,4,7,8-HxCDF	93		26 - 152	01/17/13 16:42	01/22/13 05:26	1
13C-1,2,3,6,7,8-HxCDF	87		26 - 123	01/17/13 16:42	01/22/13 05:26	1
13C-1,2,3,7,8,9-HxCDF	84		29 - 147	01/17/13 16:42	01/22/13 05:26	1
13C-2,3,4,6,7,8-HxCDF	87		28 - 136	01/17/13 16:42	01/22/13 05:26	1
13C-1,2,3,4,6,7,8-HpCDD	71		23 - 140	01/17/13 16:42	01/22/13 05:26	1
13C-1,2,3,4,6,7,8-HpCDF	72		28 - 143	01/17/13 16:42	01/22/13 05:26	1
13C-1,2,3,4,7,8,9-HpCDF	84		26 - 138	01/17/13 16:42	01/22/13 05:26	1
13C-OCDD	87		17 - 157	01/17/13 16:42	01/22/13 05:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	94		35 - 197	01/17/13 16:42	01/22/13 05:26	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	67		0.10	0.10	%			01/16/13 15:11	1
Percent Moisture	33		0.10	0.10	%			01/16/13 15:11	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Client Sample ID: LRIS-LR-124-3

Lab Sample ID: 580-36242-37

Date Collected: 12/03/12 10:00

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 63.7

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.51	J	0.63	0.034	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
2,3,7,8-TCDF	4.4		0.63	0.18	pg/g	☼	01/17/13 16:42	01/22/13 15:47	1
1,2,3,7,8-PeCDD	1.5	J	3.1	0.12	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
1,2,3,7,8-PeCDF	12		3.1	0.15	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
2,3,4,7,8-PeCDF	17		3.1	0.15	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
1,2,3,4,7,8-HxCDD	5.0	B	3.1	0.13	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
1,2,3,6,7,8-HxCDD	67	B	3.1	0.13	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
1,2,3,7,8,9-HxCDD	16	B	3.1	0.11	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
1,2,3,4,7,8-HxCDF	83	B	3.1	0.32	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
1,2,3,6,7,8-HxCDF	30	B	3.1	0.32	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
1,2,3,7,8,9-HxCDF	1.0	J	3.1	0.39	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
2,3,4,6,7,8-HxCDF	15	B	3.1	0.31	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
1,2,3,4,6,7,8-HpCDF	240	B	3.1	1.1	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
1,2,3,4,7,8,9-HpCDF	13	B	3.1	1.3	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
OCDF	170	B	6.3	0.15	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
Total TCDD	25	B q	0.63	0.034	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
Total TCDF	69	q	0.63	0.086	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
Total PeCDD	58	q	3.1	0.12	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
Total PeCDF	240	q	3.1	0.15	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
Total HxCDD	420	B	3.1	0.12	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
Total HxCDF	890	B	3.1	0.34	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1
Total HpCDF	820	B	3.1	1.2	pg/g	☼	01/17/13 16:42	01/22/13 06:09	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	76		25 - 164	01/17/13 16:42	01/22/13 06:09	1
13C-2,3,7,8-TCDF	82		24 - 169	01/17/13 16:42	01/22/13 06:09	1
13C-2,3,7,8-TCDF	58		24 - 169	01/17/13 16:42	01/22/13 15:47	1
13C-1,2,3,7,8-PeCDD	73		25 - 181	01/17/13 16:42	01/22/13 06:09	1
13C-1,2,3,7,8-PeCDF	74		24 - 185	01/17/13 16:42	01/22/13 06:09	1
13C-2,3,4,7,8-PeCDF	80		21 - 178	01/17/13 16:42	01/22/13 06:09	1
13C-1,2,3,4,7,8-HxCDD	75		32 - 141	01/17/13 16:42	01/22/13 06:09	1
13C-1,2,3,6,7,8-HxCDD	79		28 - 130	01/17/13 16:42	01/22/13 06:09	1
13C-1,2,3,4,7,8-HxCDF	77		26 - 152	01/17/13 16:42	01/22/13 06:09	1
13C-1,2,3,6,7,8-HxCDF	80		26 - 123	01/17/13 16:42	01/22/13 06:09	1
13C-1,2,3,7,8,9-HxCDF	70		29 - 147	01/17/13 16:42	01/22/13 06:09	1
13C-2,3,4,6,7,8-HxCDF	76		28 - 136	01/17/13 16:42	01/22/13 06:09	1
13C-1,2,3,4,6,7,8-HpCDF	64		28 - 143	01/17/13 16:42	01/22/13 06:09	1
13C-1,2,3,4,7,8,9-HpCDF	73		26 - 138	01/17/13 16:42	01/22/13 06:09	1
13C-OCDD	99		17 - 157	01/17/13 16:42	01/22/13 06:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	94		35 - 197	01/17/13 16:42	01/22/13 06:09	1
37Cl4-2,3,7,8-TCDD	84		35 - 197	01/17/13 16:42	01/22/13 15:47	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDD	1800	B	31	21	pg/g	☼	01/17/13 16:42	01/25/13 04:50	10
OCDD	18000	B	63	44	pg/g	☼	01/17/13 16:42	01/25/13 04:50	10
Total HpCDD	3800	B	31	21	pg/g	☼	01/17/13 16:42	01/25/13 04:50	10

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Client Sample ID: LRIS-LR-124-3

Lab Sample ID: 580-36242-37

Date Collected: 12/03/12 10:00

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 63.7

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C-1,2,3,4,6,7,8-HpCDD	69		23 - 140	01/17/13 16:42	01/25/13 04:50	10
13C-OCDD	93		17 - 157	01/17/13 16:42	01/25/13 04:50	10
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
37Cl4-2,3,7,8-TCDD	91		35 - 197	01/17/13 16:42	01/25/13 04:50	10

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	64		0.10	0.10	%			01/16/13 15:11	1
Percent Moisture	36		0.10	0.10	%			01/16/13 15:11	1



Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Client Sample ID: LRIS-LR-125-3

Lab Sample ID: 580-36242-41

Date Collected: 12/02/12 13:15

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 79.8

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.33	J	0.50	0.033	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
2,3,7,8-TCDF	0.26	J	0.50	0.048	pg/g	☼	01/17/13 16:42	01/24/13 16:35	1
1,2,3,7,8-PeCDD	ND		2.5	0.061	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
1,2,3,7,8-PeCDF	0.59	J	2.5	0.052	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
2,3,4,7,8-PeCDF	0.43	J	2.5	0.050	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
1,2,3,4,7,8-HxCDD	0.38	J B q	2.5	0.044	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
1,2,3,6,7,8-HxCDD	2.9	B	2.5	0.043	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
1,2,3,7,8,9-HxCDD	0.98	J B	2.5	0.037	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
1,2,3,4,7,8-HxCDF	2.6	B	2.5	0.042	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
1,2,3,6,7,8-HxCDF	1.2	J B	2.5	0.038	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
1,2,3,7,8,9-HxCDF	0.095	J	2.5	0.052	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
2,3,4,6,7,8-HxCDF	0.55	J B	2.5	0.040	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
1,2,3,4,6,7,8-HpCDD	63	B	2.5	0.47	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
1,2,3,4,6,7,8-HpCDF	10	B	2.5	0.092	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
1,2,3,4,7,8,9-HpCDF	0.52	J B	2.5	0.12	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
OCDD	970	B	5.0	0.50	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
OCDF	9.8	B	5.0	0.053	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
Total TCDD	2.0	B	0.50	0.033	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
Total TCDF	2.2	q	0.50	0.034	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
Total PeCDD	4.1	q	2.5	0.061	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
Total PeCDF	7.6	q	2.5	0.051	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
Total HxCDD	26	B q	2.5	0.041	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
Total HxCDF	35	B	2.5	0.043	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
Total HpCDD	140	B	2.5	0.47	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1
Total HpCDF	35	B	2.5	0.10	pg/g	☼	01/17/13 16:42	01/22/13 06:51	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	75		25 - 164	01/17/13 16:42	01/22/13 06:51	1
13C-2,3,7,8-TCDF	81		24 - 169	01/17/13 16:42	01/22/13 06:51	1
13C-2,3,7,8-TCDF	71		24 - 169	01/17/13 16:42	01/24/13 16:35	1
13C-1,2,3,7,8-PeCDD	69		25 - 181	01/17/13 16:42	01/22/13 06:51	1
13C-1,2,3,7,8-PeCDF	71		24 - 185	01/17/13 16:42	01/22/13 06:51	1
13C-2,3,4,7,8-PeCDF	78		21 - 178	01/17/13 16:42	01/22/13 06:51	1
13C-1,2,3,4,7,8-HxCDD	81		32 - 141	01/17/13 16:42	01/22/13 06:51	1
13C-1,2,3,6,7,8-HxCDD	84		28 - 130	01/17/13 16:42	01/22/13 06:51	1
13C-1,2,3,4,7,8-HxCDF	79		26 - 152	01/17/13 16:42	01/22/13 06:51	1
13C-1,2,3,6,7,8-HxCDF	84		26 - 123	01/17/13 16:42	01/22/13 06:51	1
13C-1,2,3,7,8,9-HxCDF	71		29 - 147	01/17/13 16:42	01/22/13 06:51	1
13C-2,3,4,6,7,8-HxCDF	79		28 - 136	01/17/13 16:42	01/22/13 06:51	1
13C-1,2,3,4,6,7,8-HpCDD	66		23 - 140	01/17/13 16:42	01/22/13 06:51	1
13C-1,2,3,4,6,7,8-HpCDF	64		28 - 143	01/17/13 16:42	01/22/13 06:51	1
13C-1,2,3,4,7,8,9-HpCDF	73		26 - 138	01/17/13 16:42	01/22/13 06:51	1
13C-OCDD	79		17 - 157	01/17/13 16:42	01/22/13 06:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	92		35 - 197	01/17/13 16:42	01/22/13 06:51	1
37Cl4-2,3,7,8-TCDD	77		35 - 197	01/17/13 16:42	01/24/13 16:35	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Client Sample ID: LRIS-LR-125-3

Lab Sample ID: 580-36242-41

Date Collected: 12/02/12 13:15

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	80		0.10	0.10	%			01/16/13 15:11	1
Percent Moisture	20		0.10	0.10	%			01/16/13 15:11	1

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Client Sample ID: LRIS-LR-132-5

Lab Sample ID: 580-36242-67

Date Collected: 12/03/12 14:15

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 64.5

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.11	J q	0.62	0.028	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
2,3,7,8-TCDF	0.13	J	0.62	0.023	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
1,2,3,7,8-PeCDD	ND		3.1	0.055	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
1,2,3,7,8-PeCDF	ND		3.1	0.040	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
2,3,4,7,8-PeCDF	ND		3.1	0.041	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
1,2,3,4,7,8-HxCDD	ND		3.1	0.037	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
1,2,3,6,7,8-HxCDD	0.11	J B	3.1	0.037	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
1,2,3,7,8,9-HxCDD	0.092	J B	3.1	0.031	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
1,2,3,4,7,8-HxCDF	0.071	J B	3.1	0.025	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
1,2,3,6,7,8-HxCDF	0.059	J B	3.1	0.024	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
1,2,3,7,8,9-HxCDF	ND		3.1	0.061	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
2,3,4,6,7,8-HxCDF	ND		3.1	0.023	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
1,2,3,4,6,7,8-HpCDD	0.83	J B	3.1	0.068	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
1,2,3,4,6,7,8-HpCDF	0.23	J B	3.1	0.029	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
1,2,3,4,7,8,9-HpCDF	ND		3.1	0.038	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
OCDD	6.6	B	6.2	0.10	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
OCDF	0.22	J q B	6.2	0.038	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
Total TCDD	0.82	q B	0.62	0.028	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
Total TCDF	0.85	q	0.62	0.023	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
Total PeCDD	0.24	J q	3.1	0.055	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
Total PeCDF	0.38	J q	3.1	0.040	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
Total HxCDD	0.77	J q B	3.1	0.035	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
Total HxCDF	0.45	J q B	3.1	0.034	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
Total HpCDD	1.8	J q B	3.1	0.068	pg/g	*	01/17/13 16:42	01/22/13 07:34	1
Total HpCDF	0.37	J q B	3.1	0.034	pg/g	*	01/17/13 16:42	01/22/13 07:34	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	77		25 - 164	01/17/13 16:42	01/22/13 07:34	1
13C-2,3,7,8-TCDF	84		24 - 169	01/17/13 16:42	01/22/13 07:34	1
13C-1,2,3,7,8-PeCDD	75		25 - 181	01/17/13 16:42	01/22/13 07:34	1
13C-1,2,3,7,8-PeCDF	77		24 - 185	01/17/13 16:42	01/22/13 07:34	1
13C-2,3,4,7,8-PeCDF	84		21 - 178	01/17/13 16:42	01/22/13 07:34	1
13C-1,2,3,4,7,8-HxCDD	84		32 - 141	01/17/13 16:42	01/22/13 07:34	1
13C-1,2,3,6,7,8-HxCDD	82		28 - 130	01/17/13 16:42	01/22/13 07:34	1
13C-1,2,3,4,7,8-HxCDF	86		26 - 152	01/17/13 16:42	01/22/13 07:34	1
13C-1,2,3,6,7,8-HxCDF	83		26 - 123	01/17/13 16:42	01/22/13 07:34	1
13C-1,2,3,7,8,9-HxCDF	77		29 - 147	01/17/13 16:42	01/22/13 07:34	1
13C-2,3,4,6,7,8-HxCDF	79		28 - 136	01/17/13 16:42	01/22/13 07:34	1
13C-1,2,3,4,6,7,8-HpCDD	63		23 - 140	01/17/13 16:42	01/22/13 07:34	1
13C-1,2,3,4,6,7,8-HpCDF	66		28 - 143	01/17/13 16:42	01/22/13 07:34	1
13C-1,2,3,4,7,8,9-HpCDF	75		26 - 138	01/17/13 16:42	01/22/13 07:34	1
13C-OCDD	70		17 - 157	01/17/13 16:42	01/22/13 07:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	102		35 - 197	01/17/13 16:42	01/22/13 07:34	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	64		0.10	0.10	%			01/17/13 14:49	1
Percent Moisture	36		0.10	0.10	%			01/17/13 14:49	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Client Sample ID: LRIS-LR-PS-SRM

Lab Sample ID: 580-36242-97

Date Collected: 11/26/12 10:00

Matrix: Solid

Date Received: 12/07/12 08:50

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	1.2	J q	5.1	0.19	pg/g		01/17/13 16:42	01/22/13 08:17	1
2,3,7,8-TCDF	2.1	J	5.1	0.19	pg/g		01/17/13 16:42	01/22/13 08:17	1
1,2,3,7,8-PeCDD	0.84	J	25	0.37	pg/g		01/17/13 16:42	01/22/13 08:17	1
1,2,3,7,8-PeCDF	1.1	J	25	0.31	pg/g		01/17/13 16:42	01/22/13 08:17	1
2,3,4,7,8-PeCDF	1.0	J	25	0.32	pg/g		01/17/13 16:42	01/22/13 08:17	1
1,2,3,4,7,8-HxCDD	1.5	J B	25	0.20	pg/g		01/17/13 16:42	01/22/13 08:17	1
1,2,3,6,7,8-HxCDD	3.5	J B	25	0.21	pg/g		01/17/13 16:42	01/22/13 08:17	1
1,2,3,7,8,9-HxCDD	2.2	J B	25	0.18	pg/g		01/17/13 16:42	01/22/13 08:17	1
1,2,3,4,7,8-HxCDF	2.8	J B	25	0.17	pg/g		01/17/13 16:42	01/22/13 08:17	1
1,2,3,6,7,8-HxCDF	1.3	J q B	25	0.16	pg/g		01/17/13 16:42	01/22/13 08:17	1
1,2,3,7,8,9-HxCDF	ND		25	0.19	pg/g		01/17/13 16:42	01/22/13 08:17	1
2,3,4,6,7,8-HxCDF	1.1	J q B	25	0.15	pg/g		01/17/13 16:42	01/22/13 08:17	1
1,2,3,4,6,7,8-HpCDD	82	B	25	1.7	pg/g		01/17/13 16:42	01/22/13 08:17	1
1,2,3,4,6,7,8-HpCDF	19	J q B	25	0.35	pg/g		01/17/13 16:42	01/22/13 08:17	1
1,2,3,4,7,8,9-HpCDF	1.1	J B	25	0.46	pg/g		01/17/13 16:42	01/22/13 08:17	1
OCDD	870	B	51	1.2	pg/g		01/17/13 16:42	01/22/13 08:17	1
OCDF	89	B	51	0.40	pg/g		01/17/13 16:42	01/22/13 08:17	1
Total TCDD	5.8	q B	5.1	0.19	pg/g		01/17/13 16:42	01/22/13 08:17	1
Total TCDF	9.3	q	5.1	0.19	pg/g		01/17/13 16:42	01/22/13 08:17	1
Total PeCDD	6.3	J q	25	0.37	pg/g		01/17/13 16:42	01/22/13 08:17	1
Total PeCDF	7.8	J	25	0.32	pg/g		01/17/13 16:42	01/22/13 08:17	1
Total HxCDD	26	B	25	0.20	pg/g		01/17/13 16:42	01/22/13 08:17	1
Total HxCDF	25	q B	25	0.17	pg/g		01/17/13 16:42	01/22/13 08:17	1
Total HpCDD	220	B	25	1.7	pg/g		01/17/13 16:42	01/22/13 08:17	1
Total HpCDF	73	q B	25	0.40	pg/g		01/17/13 16:42	01/22/13 08:17	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	79		25 - 164				01/17/13 16:42	01/22/13 08:17	1
13C-2,3,7,8-TCDF	86		24 - 169				01/17/13 16:42	01/22/13 08:17	1
13C-1,2,3,7,8-PeCDD	77		25 - 181				01/17/13 16:42	01/22/13 08:17	1
13C-1,2,3,7,8-PeCDF	80		24 - 185				01/17/13 16:42	01/22/13 08:17	1
13C-2,3,4,7,8-PeCDF	87		21 - 178				01/17/13 16:42	01/22/13 08:17	1
13C-1,2,3,4,7,8-HxCDD	89		32 - 141				01/17/13 16:42	01/22/13 08:17	1
13C-1,2,3,6,7,8-HxCDD	91		28 - 130				01/17/13 16:42	01/22/13 08:17	1
13C-1,2,3,4,7,8-HxCDF	92		26 - 152				01/17/13 16:42	01/22/13 08:17	1
13C-1,2,3,6,7,8-HxCDF	88		26 - 123				01/17/13 16:42	01/22/13 08:17	1
13C-1,2,3,7,8,9-HxCDF	81		29 - 147				01/17/13 16:42	01/22/13 08:17	1
13C-2,3,4,6,7,8-HxCDF	88		28 - 136				01/17/13 16:42	01/22/13 08:17	1
13C-1,2,3,4,6,7,8-HpCDD	70		23 - 140				01/17/13 16:42	01/22/13 08:17	1
13C-1,2,3,4,6,7,8-HpCDF	72		28 - 143				01/17/13 16:42	01/22/13 08:17	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138				01/17/13 16:42	01/22/13 08:17	1
13C-OCDD	80		17 - 157				01/17/13 16:42	01/22/13 08:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	97		35 - 197				01/17/13 16:42	01/22/13 08:17	1

QC Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-8878/1-A

Matrix: Solid

Analysis Batch: 9038

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 8878

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.50	0.019	pg/g		01/17/13 16:42	01/22/13 00:27	1
2,3,7,8-TCDF	ND		0.50	0.072	pg/g		01/17/13 16:42	01/22/13 00:27	1
1,2,3,7,8-PeCDD	ND		2.5	0.036	pg/g		01/17/13 16:42	01/22/13 00:27	1
1,2,3,7,8-PeCDF	ND		2.5	0.041	pg/g		01/17/13 16:42	01/22/13 00:27	1
2,3,4,7,8-PeCDF	ND		2.5	0.041	pg/g		01/17/13 16:42	01/22/13 00:27	1
1,2,3,4,7,8-HxCDD	0.0729	J	2.5	0.015	pg/g		01/17/13 16:42	01/22/13 00:27	1
1,2,3,6,7,8-HxCDD	0.0548	J q	2.5	0.015	pg/g		01/17/13 16:42	01/22/13 00:27	1
1,2,3,7,8,9-HxCDD	0.0738	J	2.5	0.013	pg/g		01/17/13 16:42	01/22/13 00:27	1
1,2,3,4,7,8-HxCDF	0.0584	J q	2.5	0.015	pg/g		01/17/13 16:42	01/22/13 00:27	1
1,2,3,6,7,8-HxCDF	0.0558	J q	2.5	0.015	pg/g		01/17/13 16:42	01/22/13 00:27	1
1,2,3,7,8,9-HxCDF	ND		2.5	0.018	pg/g		01/17/13 16:42	01/22/13 00:27	1
2,3,4,6,7,8-HxCDF	0.0278	J q	2.5	0.014	pg/g		01/17/13 16:42	01/22/13 00:27	1
1,2,3,4,6,7,8-HpCDD	0.116	J	2.5	0.028	pg/g		01/17/13 16:42	01/22/13 00:27	1
1,2,3,4,6,7,8-HpCDF	0.166	J	2.5	0.015	pg/g		01/17/13 16:42	01/22/13 00:27	1
1,2,3,4,7,8,9-HpCDF	0.107	J	2.5	0.020	pg/g		01/17/13 16:42	01/22/13 00:27	1
OCDD	0.386	J	5.0	0.036	pg/g		01/17/13 16:42	01/22/13 00:27	1
OCDF	0.556	J	5.0	0.035	pg/g		01/17/13 16:42	01/22/13 00:27	1
Total TCDD	0.142	J q	0.50	0.019	pg/g		01/17/13 16:42	01/22/13 00:27	1
Total TCDF	ND		0.50	0.072	pg/g		01/17/13 16:42	01/22/13 00:27	1
Total PeCDD	ND		2.5	0.17	pg/g		01/17/13 16:42	01/22/13 00:27	1
Total PeCDF	ND		2.5	0.041	pg/g		01/17/13 16:42	01/22/13 00:27	1
Total HxCDD	0.202	J q	2.5	0.015	pg/g		01/17/13 16:42	01/22/13 00:27	1
Total HxCDF	0.142	J q	2.5	0.015	pg/g		01/17/13 16:42	01/22/13 00:27	1
Total HpCDD	0.241	J q	2.5	0.028	pg/g		01/17/13 16:42	01/22/13 00:27	1
Total HpCDF	0.273	J	2.5	0.017	pg/g		01/17/13 16:42	01/22/13 00:27	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	72		25 - 164	01/17/13 16:42	01/22/13 00:27	1
13C-2,3,7,8-TCDF	76		24 - 169	01/17/13 16:42	01/22/13 00:27	1
13C-1,2,3,7,8-PeCDD	71		25 - 181	01/17/13 16:42	01/22/13 00:27	1
13C-1,2,3,7,8-PeCDF	75		24 - 185	01/17/13 16:42	01/22/13 00:27	1
13C-2,3,4,7,8-PeCDF	83		21 - 178	01/17/13 16:42	01/22/13 00:27	1
13C-1,2,3,4,7,8-HxCDD	78		32 - 141	01/17/13 16:42	01/22/13 00:27	1
13C-1,2,3,6,7,8-HxCDD	86		28 - 130	01/17/13 16:42	01/22/13 00:27	1
13C-1,2,3,4,7,8-HxCDF	81		26 - 152	01/17/13 16:42	01/22/13 00:27	1
13C-1,2,3,6,7,8-HxCDF	85		26 - 123	01/17/13 16:42	01/22/13 00:27	1
13C-1,2,3,7,8,9-HxCDF	70		29 - 147	01/17/13 16:42	01/22/13 00:27	1
13C-2,3,4,6,7,8-HxCDF	79		28 - 136	01/17/13 16:42	01/22/13 00:27	1
13C-1,2,3,4,6,7,8-HpCDD	61		23 - 140	01/17/13 16:42	01/22/13 00:27	1
13C-1,2,3,4,6,7,8-HpCDF	67		28 - 143	01/17/13 16:42	01/22/13 00:27	1
13C-1,2,3,4,7,8,9-HpCDF	72		26 - 138	01/17/13 16:42	01/22/13 00:27	1
13C-OCDD	71		17 - 157	01/17/13 16:42	01/22/13 00:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	91		35 - 197	01/17/13 16:42	01/22/13 00:27	1

TestAmerica Seattle

QC Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-8878/2-A

Matrix: Solid

Analysis Batch: 9038

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 8878

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	20.0	18.8		pg/g		94	67 - 158
2,3,7,8-TCDF	20.0	20.1		pg/g		101	75 - 158
1,2,3,7,8-PeCDD	100	95.9		pg/g		96	70 - 142
1,2,3,7,8-PeCDF	100	97.3		pg/g		97	80 - 134
2,3,4,7,8-PeCDF	100	90.3		pg/g		90	68 - 160
1,2,3,4,7,8-HxCDD	100	88.8		pg/g		89	70 - 164
1,2,3,6,7,8-HxCDD	100	93.8		pg/g		94	76 - 134
1,2,3,7,8,9-HxCDD	100	89.2		pg/g		89	64 - 162
1,2,3,4,7,8-HxCDF	100	95.1		pg/g		95	72 - 134
1,2,3,6,7,8-HxCDF	100	105		pg/g		105	84 - 130
1,2,3,7,8,9-HxCDF	100	104		pg/g		104	78 - 130
2,3,4,6,7,8-HxCDF	100	103		pg/g		103	70 - 156
1,2,3,4,6,7,8-HpCDD	100	101		pg/g		101	70 - 140
1,2,3,4,6,7,8-HpCDF	100	97.5		pg/g		97	82 - 122
1,2,3,4,7,8,9-HpCDF	100	93.6		pg/g		94	78 - 138
OCDD	200	207		pg/g		104	78 - 144
OCDF	200	216		pg/g		108	63 - 170

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C-2,3,7,8-TCDD	71		20 - 175
13C-2,3,7,8-TCDF	76		22 - 152
13C-1,2,3,7,8-PeCDD	70		21 - 227
13C-1,2,3,7,8-PeCDF	74		21 - 192
13C-2,3,4,7,8-PeCDF	81		13 - 328
13C-1,2,3,4,7,8-HxCDD	77		21 - 193
13C-1,2,3,6,7,8-HxCDD	88		25 - 163
13C-1,2,3,4,7,8-HxCDF	84		19 - 202
13C-1,2,3,6,7,8-HxCDF	88		21 - 159
13C-1,2,3,7,8,9-HxCDF	76		17 - 205
13C-2,3,4,6,7,8-HxCDF	83		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	61		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	68		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	70		20 - 186
13C-OCDD	65		13 - 199

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
37Cl4-2,3,7,8-TCDD	89		35 - 197

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-36242-24 DU

Matrix: Solid

Analysis Batch: 128520

Client Sample ID: LRIS-LR-119-3

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU DU		Unit	D	RPD	RPD Limit
			Result	Qualifier				
Percent Solids	63		63		%		0.1	20
Percent Moisture	37		37		%		0.2	20

TestAmerica Seattle

Lab Chronicle

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Client Sample ID: LRIS-LR-110-4

Lab Sample ID: 580-36242-21

Date Collected: 12/03/12 10:40

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 61.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8878	01/17/13 16:42	AM	TAL WSC
Total/NA	Analysis	1613B		1	9038	01/22/13 04:01	NK	TAL WSC
Total/NA	Analysis	1613B		1	9074	01/22/13 14:31	MG	TAL WSC
Total/NA	Prep	HRMS-Sox	DL		8878	01/17/13 16:42	AM	TAL WSC
Total/NA	Analysis	1613B	DL	10	9265	01/25/13 04:07	MG	TAL WSC
Total/NA	Analysis	D 2216		1	128243	01/16/13 15:11	JL	TAL SEA

Client Sample ID: LRIS-LR-119-3

Lab Sample ID: 580-36242-24

Date Collected: 12/03/12 14:35

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 63.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8878	01/17/13 16:42	AM	TAL WSC
Total/NA	Analysis	1613B		1	9038	01/22/13 04:43	NK	TAL WSC
Total/NA	Analysis	1613B		1	9074	01/22/13 15:09	MG	TAL WSC
Total/NA	Analysis	D 2216		1	128520	01/21/13 16:20	JL	TAL SEA

Client Sample ID: LRIS-LR-122-3

Lab Sample ID: 580-36242-32

Date Collected: 12/03/12 15:22

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 67.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8878	01/17/13 16:42	AM	TAL WSC
Total/NA	Analysis	1613B		1	9038	01/22/13 05:26	NK	TAL WSC
Total/NA	Analysis	D 2216		1	128243	01/16/13 15:11	JL	TAL SEA

Client Sample ID: LRIS-LR-124-3

Lab Sample ID: 580-36242-37

Date Collected: 12/03/12 10:00

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 63.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8878	01/17/13 16:42	AM	TAL WSC
Total/NA	Analysis	1613B		1	9038	01/22/13 06:09	NK	TAL WSC
Total/NA	Analysis	1613B		1	9074	01/22/13 15:47	MG	TAL WSC
Total/NA	Prep	HRMS-Sox	DL		8878	01/17/13 16:42	AM	TAL WSC
Total/NA	Analysis	1613B	DL	10	9265	01/25/13 04:50	MG	TAL WSC
Total/NA	Analysis	D 2216		1	128243	01/16/13 15:11	JL	TAL SEA

Lab Chronicle

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Client Sample ID: LRIS-LR-125-3

Lab Sample ID: 580-36242-41

Date Collected: 12/02/12 13:15

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 79.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8878	01/17/13 16:42	AM	TAL WSC
Total/NA	Analysis	1613B		1	9038	01/22/13 06:51	NK	TAL WSC
Total/NA	Analysis	1613B		1	9279	01/24/13 16:35	MG	TAL WSC
Total/NA	Analysis	D 2216		1	128243	01/16/13 15:11	JL	TAL SEA

Client Sample ID: LRIS-LR-132-5

Lab Sample ID: 580-36242-67

Date Collected: 12/03/12 14:15

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 64.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8878	01/17/13 16:42	AM	TAL WSC
Total/NA	Analysis	1613B		1	9038	01/22/13 07:34	NK	TAL WSC
Total/NA	Analysis	D 2216		1	128243	01/17/13 14:49	JL	TAL SEA

Client Sample ID: LRIS-LR-PS-SRM

Lab Sample ID: 580-36242-97

Date Collected: 11/26/12 10:00

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			8878	01/17/13 16:42	AM	TAL WSC
Total/NA	Analysis	1613B		1	9038	01/22/13 08:17	NK	TAL WSC

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

TAL WSC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Certification Summary

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-04-13
California	NELAP	9	1115CA	01-31-13
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-13
USDA	Federal		P330-11-00222	05-20-14
Washington	State Program	10	C553	02-17-13

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

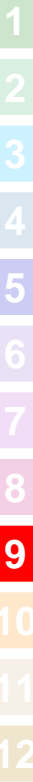
Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-14
Alaska (UST)	State Program	10	UST-055	12-18-13
Arizona	State Program	9	AZ0708	08-11-13
Arkansas DEQ	State Program	6	88-0691	06-17-13
California	NELAP	9	1119CA	01-31-14
Colorado	State Program	8	N/A	08-31-13
Connecticut	State Program	1	PH-0691	06-30-13
Florida	NELAP	4	E87570	06-30-13
Guam	State Program	9	N/A	08-31-13
Hawaii	State Program	9	N/A	01-31-13
Illinois	NELAP	5	200060	03-17-13
Kansas	NELAP	7	E-10375	10-31-13
Louisiana	NELAP	6	30612	06-30-13
Michigan	State Program	5	9947	01-31-13
Nevada	State Program	9	CA44	07-31-13
New Jersey	NELAP	2	CA005	06-30-13
New York	NELAP	2	11666	04-01-13
Northern Mariana Islands	State Program	9	MP0007	01-31-13
Oregon	NELAP	10	CA200005	03-28-13
Pennsylvania	NELAP	3	68-01272	03-31-13
South Carolina	State Program	4	87014	06-30-13
Texas	NELAP	6	T104704399-08-TX	05-31-13
US Fish & Wildlife	Federal		LE148388-0	02-28-13
USDA	Federal		P330-11-00436	12-30-14
USEPA UCMR	Federal	1	CA00044	11-06-14
Utah	NELAP	8	QUAN1	01-31-13
Washington	State Program	10	C581	05-05-13
West Virginia	State Program	3	9930C	12-31-13
West Virginia DEP	State Program	3	334	07-31-13
Wyoming	State Program	8	8TMS-Q	01-31-13

Sample Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-36242-21	LRIS-LR-110-4	Solid	12/03/12 10:40	12/07/12 08:50
580-36242-24	LRIS-LR-119-3	Solid	12/03/12 14:35	12/07/12 08:50
580-36242-32	LRIS-LR-122-3	Solid	12/03/12 15:22	12/07/12 08:50
580-36242-37	LRIS-LR-124-3	Solid	12/03/12 10:00	12/07/12 08:50
580-36242-41	LRIS-LR-125-3	Solid	12/02/12 13:15	12/07/12 08:50
580-36242-67	LRIS-LR-132-5	Solid	12/03/12 14:15	12/07/12 08:50
580-36242-97	LRIS-LR-PS-SRM	Solid	11/26/12 10:00	12/07/12 08:50



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Lab Information: Test America
Project Information: Lake River Industrial Site
Other Information: Laurie Olin, Maci Novak

Lab Address: 5735 8th Street E, WA 98424	Tacoma	City	State	Zip	Site Code: 9003.01.40	Site Address: 1110 Division St	City/State: Tukwila, WA	Phone #:
Lab P.M.: Pam Johnson	City	State	Zip	PO #:	Send EDD to:	Eric Navar	Send Invoice to:	Eric Navar
Phone/Fax: /	PM Name:	Phone/Fax:	CC Hardcopy to:	Eric Navar	CC Hardcopy to:	Eric Navar	Maci Novak	Phone #:
Lab Quote #:	PM Email:	PM Email:	CC Hardcopy to:					

ITEM #	Field Sample No. / Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	Task:	Total # of Samples: 97	Notes: F= Field Filtered, H= Hold	Regular	Rush	Event Complete?
1	LRS-LR-103-2	SUB_S O-SED	C	12/03/2012 13:30	3		ARCHIVE			X					
2	LRS-LR-103-3	SUB_S O-SED	C	12/03/2012 13:35	3					X					
3	LRS-LR-103-4	SUB_S O-SED	C	12/03/2012 13:40	3					X					
4	LRS-LR-103-5	SUB_S O-SED	C	12/03/2012 13:45	3					X					
5	LRS-LR-103	SOIL-SED	G	12/04/2012 11:55	3					X	X	X			
6	LRS-LR-106-2	SUB_S O-SED	G	12/02/2012 17:25	3					X					
7	LRS-LR-106-3	SUB_S O-SED	C	12/02/2012 17:30	3					X					
8	LRS-LR-106-4	SUB_S O-SED	C	12/02/2012 17:35	3					X					
9	LRS-LR-106-5	SUB_S O-SED	C	12/02/2012 17:40	3					X					
10	LRS-LR-106	SOIL-SED	C	12/04/2012 11:42	3					X	X	X			
11	LRS-LR-108-2	SUB_S O-SED	C	12/03/2012 11:20	3					X					

Additional Comments/Special Instructions: REINQUISHED BY / AFFILIATION DATE TIME ACCEPTED BY / AFFILIATION DATE TIME

Company: Eric Navar / MFA 12/12/12 13:30 Tom Novak / TASA 12/3/12 08:50

Company:	Tracking #:	DATE/TIME:	Temp in OC	Samples on Ice?	Sample intact?	Trip Blank?

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information:		Project Information:			Other Information:			Task:	
Lab:	Unknown Laboratory	Site Code:	Lake River Industrial Site	Address:	Send Invoice to:	City/State:	Phone #:	Total # of Samples: 97	2012_LR_SED
Address:		Project #:		City/State:				Event Complete?	
Lab P.M.:		City:	State, Zip:	PO #:					
Phone/Fax:	/	P.M. Name:		Send EDD to:					
P.M. email:		Phone/Fax:		CC Hardcopy to:					
Lab Quote #:		P.M. Email:		CC Hardcopy to:					
ITEM #	Field Sample No. / Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes
12	LRS-LR-108-3	SUB_S O-SED	C	12/03/2012 11:25	3		X		Archive
13	LRS-LR-108-4	SUB_S O-SED	C	12/03/2012 11:30	3		X		1613B - Dioxin/Furan
14	LRS-LR-108-5	SUB_S O-SED	C	12/03/2012 11:35	3		X		Total Organic Carbon - COE 9060
15	LRS-LR-109-2	SUB_S O-SED	C	12/02/2012 15:10	3		X		
16	LRS-LR-109-3	SUB_S O-SED	G	12/02/2012 15:15	3		X		
17	LRS-LR-109-4	SUB_S O-SED	G	12/02/2012 15:20	3		X		
18	LRS-LR-109-5	SUB_S O-SED	C	12/02/2012 15:25	3		X		
19	LRS-LR-110-2	SUB_S O-SED	C	12/03/2012 10:30	3		X		
20	LRS-LR-110-3	SUB_S O-SED	C	12/03/2012 10:35	3		X		
21	LRS-LR-110-4	SUB_S O-SED	C	12/03/2012 10:40	3		X		
22	LRS-LR-110-5	SUB_S O-SED	C	12/03/2012 10:45	3		X		

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: **Task:** TAT

Address: Site Code: Lake River Industrial Site Send Invoice to: Total # of Samples: 97 2012_LR_SED Event Complete?

Project # Site Address City/State Phone # Notes: F= Field Filtered, H= Hold Rush

Lab PIV: City State, Zip PO # Lab Notes

Phone/Fax: / PIV Name Send EDD to Preservative

PIV email Phone/Fax: CC Hardcopy to Analysis

Lab Quote # PIV Email: CC Hardcopy to

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	Rush
23	LRS-LR-119-2	SUB_S O-SED	C	12/03/2012 14:30	3		X	Archive		
24	LRS-LR-119-3	SUB_S O-SED	C	12/03/2012 14:35	3		X	1613B - Dioxin/Furan		
25	LRS-LR-119-4	SUB_S O-SED	C	12/03/2012 14:40	3		X	Total Organic Carbon - COE 9060		
26	LRS-LR-119-5	SUB_S O-SED	C	12/03/2012 14:45	3		X			
27	LRS-LR-120-2	SUB_S O-SED	G	12/03/2012 12:20	3		X			
28	LRS-LR-120-3	SUB_S O-SED	G	12/03/2012 12:25	3		X			
29	LRS-LR-120-4	SUB_S O-SED	C	12/03/2012 12:30	3		X			
30	LRS-LR-120-5	SUB_S O-SED	C	12/03/2012 12:35	3		X			
31	LRS-LR-122-2	SUB_S O-SED	C	12/03/2012 15:22	3		X			
32	LRS-LR-122-3	SUB_S O-SED	C	12/03/2012 15:22	3		X			
33	LRS-LR-122-4	SUB_S O-SED	C	12/03/2012 15:22	3		X			

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Project Information: Other Information:

Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Address:	City/State:	Phone #:
Address:	Project #	Site Address	City/State:	Phone #:
Lab PIV:	City:	State, Zip	PO #	
Phone/Fax:	PIV Name	Send EDD to	CC Hardcopy to	
PIV email	Phone/Fax:	CC Hardcopy to	CC Hardcopy to	
Lab Quote #:	PIV Email:			

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush
34	LRS-LR-122-5	SUB_S O-SED	C	12/03/2012 15:22	3		X	Archive			
35	LRS-LR-122	SUB_S O-SED	C	12/04/2012 11:27	3		X	1613B - Dioxin/Furan			
36	LRS-LR-124-2	SUB_S O-SED	C	12/03/2012 09:50	3		X	Total Organic Carbon - COE 9060			
37	LRS-LR-124-3	SUB_S O-SED	C	12/03/2012 10:00	3		X				
38	LRS-LR-124-4	SUB_S O-SED	G	12/03/2012 10:05	3		X				
39	LRS-LR-124-5	SUB_S O-SED	G	12/03/2012 10:10	3		X				
40	LRS-LR-125-2	SUB_S O-SED	C	12/02/2012 13:10	3		X				
41	LRS-LR-125-3	SUB_S O-SED	C	12/02/2012 13:15	3		X				
42	LRS-LR-125-4	SUB_S O-SED	C	12/02/2012 13:20	3		X				
43	LRS-LR-126-2	SUB_S O-SED	C	12/02/2012 12:40	3		X				
44	LRS-LR-126-3	SUB_S O-SED	C	12/02/2012 12:45	3		X				

Task:	2012_LR_SED
Total # of Samples:	97
Notes:	F= Field Filtered , H= Hold
Rush	
Event Complete?	

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

36242

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to:

Lab:	Unknown Laboratory	Site Code:	Lake River Industrial Site	Send Invoice to:	
Address:		Project #:		City/State:	
		Site Address:		PO #:	
Lab PM:		City:		State, Zip:	
Phone/Fax: /		PM Name:		Send EDD to:	
PM email:		Phone/Fax:		CC Hardcopy to:	
Lab Quote #:		PM Email:		CC Hardcopy to:	

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Notes: F= Field Filtered, H= Hold	Rush
46	LRS-LR-126-4	SUB_S O-SED	C	12/02/2012 12:47	3		Archive			X		
46	LRS-LR-126-5	SUB_S O-SED	C	12/02/2012 12:50	3		1613B - Dioxin/Furan			X		
46	LRS-LR-126	SOIL- SED	C	12/04/2012 08:56	3		Total Organic Carbon - COE 9060			X		
47	LRS-LR-129-2	SUB_S O-SED	C	12/02/2012 13:50	3					X		
48	LRS-LR-129-3	SUB_S O-SED	G	12/02/2012 13:55	3					X		
49	LRS-LR-129-4	SUB_S O-SED	G	12/02/2012 14:00	3					X		
50	LRS-LR-129-5	SUB_S O-SED	C	12/02/2012 14:05	3					X		
51	LRS-LR-129	SOIL- SED	C	12/04/2012 10:10	3					X		
52	LRS-LR-130-2	SUB_S O-SED	C	12/02/2012 14:40	3					X		
53	LRS-LR-130-FD	QAQC		12/02/2012 14:40	3					X		
54	LRS-LR-130-3	SUB_S O-SED		12/02/2012 14:45	3					X		

Task:	2012_LR_SED
Total # of Samples:	97
Event Complete?	

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: **Task:** Total # of Samples: 97 2012_LR_SED Event Complete?

Address: Site Code: Project # Lake River Industrial Site Address: Send Invoice to: City/State: Phone #:

Site Address City: State: Zip PO # Send EDD to CC Hardcopy to CC Hardcopy to

Lab P.M.: P.M. Name P.M. Email: P.M. Email:

Lab P.M. email: P.M. Name P.M. Email: P.M. Email:

Lab Quote #: P.M. Name P.M. Email: P.M. Email:

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Notes: F=Field Filtered, H=Hold	Rush
56	LRS-LR-130-4	SUB_S O-SED	C	12/02/2012 14:50	3		Archive					
57	LRS-LR-130-5	SUB_S O-SED	C	12/02/2012 14:55	3		1613B - Dioxin/Furan					
58	LRS-LR-130	SOIL-SED	C	12/04/2012 10:24	3		Total Organic Carbon - COE 9060					
59	LRS-LR-130-FD-1	QAQC	C	12/04/2012 10:24	3							
60	LRS-LR-131-2	SUB_S O-SED	G	12/02/2012 16:30	3							
61	LRS-LR-131-3	SUB_S O-SED	G	12/02/2012 16:35	3							
62	LRS-LR-131-4	SUB_S O-SED	C	12/02/2012 16:40	3							
63	LRS-LR-131	SOIL-SED	C	12/04/2012 11:15	3							
64	LRS-LR-132-2	SUB_S O-SED	C	12/03/2012 14:00	3							
65	LRS-LR-132-3	SUB_S O-SED	C	12/03/2012 14:05	3							
66	LRS-LR-132-4	SUB_S O-SED	C	12/03/2012 14:10	3							

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information:		Project Information:			Other Information:		Task:		
Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Project #	Address:	Send Invoice to:	TAT	Total # of Samples: 97	2012_LR_SED	Event Complete?	
Address:	Site Address:	City/State:	City/State:	City/State:	Notes: F= Field Filtered, H= Hold				
Lab PVI:	City:	State:	PO #	Send EDD to	Rush				
Phone/Fax:	PVI Name:	Phone/Fax:	CC Hardcopy to	CC Hardcopy to					
PVI email:	PVI Email:		CC Hardcopy to						
Lab Quote #:									
ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes
67	LRS-LR-132-5	SUB_S O-SED	C	12/03/2012 14:15	3		X	Archive	
68	LRS-LR-132	SUB_S O-SED	C	12/04/2012 12:06	3		X	1613B - Dioxin/Furan	
69	LRS-LR-133-2	SUB_S O-SED	C	12/03/2012 15:15	3		X	Total Organic Carbon - COE 9060	
70	LRS-LR-133-3	SUB_S O-SED	C	12/03/2012 15:25	3		X		
71	LRS-LR-133-4	SUB_S O-SED	G	12/03/2012 15:25	3		X		
72	LRS-LR-133-5	SUB_S O-SED	G	12/03/2012 15:30	3		X		
73	LRS-LR-133	SUB_S O-SED	C	12/04/2012 12:49	3		X		
74	LRS-LR-134-2	SUB_S O-SED	C	12/02/2012 10:20	3		X		
75	LRS-LR-134-3	SUB_S O-SED	C	12/02/2012 10:28	3		X		
76	LRS-LR-134-4	SUB_S O-SED	C	12/02/2012 10:30	3		X		
77	LRS-LR-134-5	SUB_S O-SED	C	12/02/2012 10:35	3		X		

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information:		Project Information:			Other Information:			Task:	
Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Project #	Send Invoice to:	Address:	City/State:	Phone #:	TAT	Total # of Samples: 97	2012_LR_SED
Address:	Site Address:	City:	State:	Zip:	PO #:	Send EDD to:	Notes: F= Field Filtered, H= Hold	Rush	Event Complete?
Lab PIV:	City:	State:	Zip:	PO #:	Send EDD to:	CC Hardcopy to:			
Phone/Fax: /	City:	State:	Zip:	PO #:	Send EDD to:	CC Hardcopy to:			
PIV Email:	PIV Email:								
Lab Quote #:									
ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes
78	LRS-LR-134	SOIL-SED	C	12/04/2012 13:10	3		Archive		
79	LRS-LR-135-2	SUB_S O-SED	C	12/03/2012 15:45	3		1613B - Dioxin/Furan		
80	LRS-LR-135-3	SUB_S O-SED	C	12/03/2012 15:50	3		Total Organic Carbon - COE 9060		
81	LRS-LR-135-4	SUB_S O-SED	C	12/03/2012 15:55	3				
82	LRS-LR-135-5	SUB_S O-SED	G	12/03/2012 16:00	3				
83	LRS-LR-135	SOIL-SED	G	12/04/2012 13:01	3				
84	LRS-LR-136-2	SUB_S O-SED	C	12/02/2012 16:50	3				
85	LRS-LR-136-3	SUB_S O-SED	C	12/02/2012 16:55	3				
86	LRS-LR-136-4	SUB_S O-SED	C	12/02/2012 17:00	3				
87	LRS-LR-136-5	SUB_S O-SED	C	12/02/2012 17:05	3				
88	LRS-LR-136	SOIL-SED	C	12/04/2012 10:39	3				

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

36242

Lab Information: **Project Information:** **Other Information:**

Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Send Invoice to:	Address:	City/State:	Phone #:
Address:	Project #:	City/State:	City/State:	City/State:	Phone #:
Lab P.M.:	City:	State:	Zip:	PO #:	
Phone/Fax: /	PM Name:	Send EDD to:	CC Hardcopy to:	CC Hardcopy to:	
PM Email:	Phone/Fax:	CC Hardcopy to:	CC Hardcopy to:	CC Hardcopy to:	
Lab Quote #:	PM Email:				

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush	Event Complete?
88	LRS-LR-137-2	SUB_S O-SED	C	12/02/2012 12:10	3		X	Archive				
89	LRS-LR-137-3	SUB_S O-SED	C	12/02/2012 12:15	3		X	1613B - Dioxin/Furan				
90	LRS-LR-137-4	SUB_S O-SED	C	12/02/2012 12:17	3		X	Total Organic Carbon - COE 9060				
91	LRS-LR-137-5	SUB_S O-SED	C	12/02/2012 12:20	3		X					
92	LRS-LR-137	SOIL-SED	G	12/04/2012 09:14	3		X					
93	LRS-LR-RB-20121202	QAQC	G	12/02/2012 17:00	2		X					
94	LRS-LR-RB-20121203	QAQC	C	12/03/2012 17:30	2		X					
95	LRS-LR-RB-20121204	QAQC	C	12/04/2012 17:35	1		X					
96	LRS-LR-PS-SRM	SOIL-SED	C	11/26/2012 10:00	2		X					
97												

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-5

Login Number: 36242

List Number: 1

Creator: Riley, Nicole

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Not requested on COC.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-5

Login Number: 36242

List Number: 1

Creator: Mantri, Anil

List Source: TestAmerica Sacramento

List Creation: 12/11/12 01:42 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	-0.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	False	Received extra samples not listed on COC.# 94 & 95
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-5

Login Number: 36242

List Number: 2

Creator: Cortes, Cesar C

List Source: TestAmerica Sacramento

List Creation: 01/10/13 02:54 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-5

Login Number: 36242

List Number: 3

Creator: Tecson, Jeffrey

List Source: TestAmerica Sacramento

List Creation: 01/16/13 11:09 AM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	622805, 622806
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	545176167352
Cooler Temperature is acceptable.	True	0.8
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-5

Login Number: 36242

List Number: 4

Creator: Tecson, Jeffrey

List Source: TestAmerica Sacramento

List Creation: 01/17/13 01:52 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	622807
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	0.4
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Isotope Dilution Summary

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF1 (24-185)	PeCDF2 (21-178)	HxCDD1 (32-141)	HxCDD2 (28-130)	HxCDF1 (26-152)
580-36242-21	LRIS-LR-110-4	85	92	84	88	96	88	83	86
580-36242-21	LRIS-LR-110-4		64						
580-36242-21 - DL	LRIS-LR-110-4								
580-36242-24	LRIS-LR-119-3	78	84	79	80	84	79	81	83
580-36242-24	LRIS-LR-119-3		61						
580-36242-32	LRIS-LR-122-3	82	88	81	82	89	88	90	93
580-36242-37	LRIS-LR-124-3	76	82	73	74	80	75	79	77
580-36242-37	LRIS-LR-124-3		58						
580-36242-37 - DL	LRIS-LR-124-3								
580-36242-41	LRIS-LR-125-3	75	81	69	71	78	81	84	79
580-36242-41	LRIS-LR-125-3		71						
580-36242-67	LRIS-LR-132-5	77	84	75	77	84	84	82	86
580-36242-97	LRIS-LR-PS-SRM	79	86	77	80	87	89	91	92
MB 320-8878/1-A	Method Blank	72	76	71	75	83	78	86	81

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxCDF2 (26-123)	HxCDF4 (29-147)	HxCDF3 (28-136)	HpCDD (23-140)	HpCDF1 (28-143)	HpCDF2 (26-138)	OCDD (17-157)	HxCDF1 (26-152)
580-36242-21	LRIS-LR-110-4	81	78	80		67	82	95	86
580-36242-21	LRIS-LR-110-4								
580-36242-21 - DL	LRIS-LR-110-4				83			99	
580-36242-24	LRIS-LR-119-3	77	75	77	64	62	76	74	83
580-36242-24	LRIS-LR-119-3								
580-36242-32	LRIS-LR-122-3	87	84	87	71	72	84	87	93
580-36242-37	LRIS-LR-124-3	80	70	76		64	73	99	77
580-36242-37	LRIS-LR-124-3								
580-36242-37 - DL	LRIS-LR-124-3				69			93	
580-36242-41	LRIS-LR-125-3	84	71	79	66	64	73	79	79
580-36242-41	LRIS-LR-125-3								
580-36242-67	LRIS-LR-132-5	83	77	79	63	66	75	70	86
580-36242-97	LRIS-LR-PS-SRM	88	81	88	70	72	81	80	92
MB 320-8878/1-A	Method Blank	85	70	79	61	67	72	71	81

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxCDF2 (21-159)	HxCDF2 (26-123)	HxCDF4 (17-205)	HxCDF4 (29-147)	HxCDF3 (22-176)	HxCDF3 (28-136)	HpCDD (23-140)	HpCDD (26-166)
580-36242-21	LRIS-LR-110-4		81		78		80		
580-36242-21	LRIS-LR-110-4								
580-36242-21 - DL	LRIS-LR-110-4							83	
580-36242-24	LRIS-LR-119-3		77		75		77	64	
580-36242-24	LRIS-LR-119-3								
580-36242-32	LRIS-LR-122-3		87		84		87	71	
580-36242-37	LRIS-LR-124-3		80		70		76		
580-36242-37	LRIS-LR-124-3								
580-36242-37 - DL	LRIS-LR-124-3							69	
580-36242-41	LRIS-LR-125-3		84		71		79	66	
580-36242-41	LRIS-LR-125-3								
580-36242-67	LRIS-LR-132-5		83		77		79	63	
580-36242-97	LRIS-LR-PS-SRM		88		81		88	70	
MB 320-8878/1-A	Method Blank		85		70		79	61	

TestAmerica Seattle

Isotope Dilution Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		HpCDF1 (21-158)	HpCDF1 (28-143)	HpCDF2 (20-186)	HpCDF2 (26-138)	OCDD (13-199)	OCDD (17-157)
580-36242-21	LRIS-LR-110-4		67		82		95
580-36242-21	LRIS-LR-110-4						99
580-36242-21 - DL	LRIS-LR-110-4						99
580-36242-24	LRIS-LR-119-3		62		76		74
580-36242-24	LRIS-LR-119-3						87
580-36242-32	LRIS-LR-122-3		72		84		87
580-36242-37	LRIS-LR-124-3		64		73		99
580-36242-37	LRIS-LR-124-3						93
580-36242-37 - DL	LRIS-LR-124-3						93
580-36242-41	LRIS-LR-125-3		64		73		79
580-36242-41	LRIS-LR-125-3						70
580-36242-67	LRIS-LR-132-5		66		75		70
580-36242-97	LRIS-LR-PS-SRM		72		81		80
MB 320-8878/1-A	Method Blank		67		72		71

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
 TCDF = 13C-2,3,7,8-TCDF
 PeCDD = 13C-1,2,3,7,8-PeCDD
 PeCDF1 = 13C-1,2,3,7,8-PeCDF
 PeCDF2 = 13C-2,3,4,7,8-PeCDF
 HxCDD1 = 13C-1,2,3,4,7,8-HxCDD
 HxCDD2 = 13C-1,2,3,6,7,8-HxCDD
 HxCDF1 = 13C-1,2,3,4,7,8-HxCDF
 HxCDF2 = 13C-1,2,3,6,7,8-HxCDF
 HxCDF4 = 13C-1,2,3,7,8,9-HxCDF
 HxCDF3 = 13C-2,3,4,6,7,8-HxCDF
 HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
 HpCDF1 = 13C-1,2,3,4,6,7,8-HpCDF
 HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
 OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF1 (21-192)	PeCDF2 (13-328)	HxCDD1 (21-193)	HxCDD2 (25-163)	HxCDF1 (19-202)
LCS 320-8878/2-A	Lab Control Sample	71	76	70	74	81	77	88	84

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)						
		HxCDF2 (21-159)	HxCDF4 (17-205)	HxCDF3 (22-176)	HpCDD (26-166)	HpCDF1 (21-158)	HpCDF2 (20-186)	OCDD (13-199)
LCS 320-8878/2-A	Lab Control Sample	88	76	83	61	68	70	65

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
 TCDF = 13C-2,3,7,8-TCDF
 PeCDD = 13C-1,2,3,7,8-PeCDD
 PeCDF1 = 13C-1,2,3,7,8-PeCDF
 PeCDF2 = 13C-2,3,4,7,8-PeCDF

TestAmerica Seattle

Isotope Dilution Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-5

HxCDD1 = 13C-1,2,3,4,7,8-HxCDD
HxCDD2 = 13C-1,2,3,6,7,8-HxCDD
HxCDF1 = 13C-1,2,3,4,7,8-HxCDF
HxCDF2 = 13C-1,2,3,6,7,8-HxCDF
HxCDF4 = 13C-1,2,3,7,8,9-HxCDF
HxCDF3 = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF1 = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-36242-6

Client Project/Site: Port of Ridgefield

For:

Maul Foster & Alongi Inc
2001 NW 19th Avenue, Suite 200
Portland, Oregon 97239

Attn: Ms. Madi Novak

Pamela R. Johnson

Authorized for release by:
1/17/2013 3:32:37 PM

Pam Johnson
Project Manager I
pamr.johnson@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-6

Job ID: 580-36242-6

Laboratory: TestAmerica Seattle

Narrative

Comments

No additional comments.

Receipt

The samples were received on 12/7/2012 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 8 coolers at receipt time were 2.6° C, 2.9° C, 3.4° C, 4.3° C, 4.5° C, 4.6° C, 5.9° C and 6.0° C.

General Chemistry

No analytical or quality issues were noted.

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Definitions/Glossary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-6

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-6

Client Sample ID: LRIS-LR-110-4

Lab Sample ID: 580-36242-21

Date Collected: 12/03/12 10:40

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	11000		2000	610	mg/Kg			01/16/13 15:28	1

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Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-6

Client Sample ID: LRIS-LR-119-3

Lab Sample ID: 580-36242-24

Date Collected: 12/03/12 14:35

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	12000		2000	610	mg/Kg			01/16/13 15:43	1

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Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-6

Client Sample ID: LRIS-LR-122-3

Lab Sample ID: 580-36242-32

Date Collected: 12/03/12 15:22

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	8300		2000	610	mg/Kg			01/16/13 15:47	1

- 1
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Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-6

Client Sample ID: LRIS-LR-124-3

Lab Sample ID: 580-36242-37

Date Collected: 12/03/12 10:00

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	17000		2000	610	mg/Kg			01/16/13 15:52	1

- 1
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Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-6

Client Sample ID: LRIS-LR-125-3

Lab Sample ID: 580-36242-41

Date Collected: 12/02/12 13:15

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2400		2000	610	mg/Kg			01/16/13 15:56	1

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Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-6

Client Sample ID: LRIS-LR-132-5

Lab Sample ID: 580-36242-67

Date Collected: 12/03/12 14:15

Matrix: Solid

Date Received: 12/07/12 08:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	9600		2000	610	mg/Kg			01/17/13 11:40	1

- 1
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QC Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-6

Method: 9060_PSEP - TOC (Puget Sound)

Lab Sample ID: MB 580-128254/3
Matrix: Solid
Analysis Batch: 128254

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		2000	610	mg/Kg			01/16/13 15:21	1

Lab Sample ID: LCS 580-128254/4
Matrix: Solid
Analysis Batch: 128254

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	2850	3200		mg/Kg		112	27.8 - 170

Lab Sample ID: LCSD 580-128254/5
Matrix: Solid
Analysis Batch: 128254

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	2850	3100		mg/Kg		109	27.8 - 170	3	35

Lab Sample ID: 580-36242-21 MS
Matrix: Solid
Analysis Batch: 128254

Client Sample ID: LRIS-LR-110-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	11000		119000	128000		mg/Kg		98	50 - 140

Lab Sample ID: 580-36242-21 MSD
Matrix: Solid
Analysis Batch: 128254

Client Sample ID: LRIS-LR-110-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	11000		124000	134000		mg/Kg		99	50 - 140	4	35

Lab Sample ID: 580-36242-21 DU
Matrix: Solid
Analysis Batch: 128254

Client Sample ID: LRIS-LR-110-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	11000			11300		mg/Kg				0.7	50

Lab Sample ID: MB 580-128325/3
Matrix: Solid
Analysis Batch: 128325

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		2000	610	mg/Kg			01/17/13 11:33	1

Lab Sample ID: LCS 580-128325/4
Matrix: Solid
Analysis Batch: 128325

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	2850	3300		mg/Kg		116	27.8 - 170

TestAmerica Seattle

QC Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-6

Lab Sample ID: LCSD 580-128325/5
Matrix: Solid
Analysis Batch: 128325

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	2850	2890		mg/Kg		101	27.8 - 170	13	35

Lab Sample ID: 580-36242-67 MS
Matrix: Solid
Analysis Batch: 128325

Client Sample ID: LRIS-LR-132-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	9600		112000	118000		mg/Kg		97	50 - 140		

Lab Sample ID: 580-36242-67 MSD
Matrix: Solid
Analysis Batch: 128325

Client Sample ID: LRIS-LR-132-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	9600		128000	133000		mg/Kg		97	50 - 140	12	35

Lab Sample ID: 580-36242-67 DU
Matrix: Solid
Analysis Batch: 128325

Client Sample ID: LRIS-LR-132-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	9600		9940		mg/Kg				4	50

Lab Chronicle

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-6

Client Sample ID: LRIS-LR-110-4

Lab Sample ID: 580-36242-21

Date Collected: 12/03/12 10:40

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	128254	01/16/13 15:28	RB	TAL SEA

Client Sample ID: LRIS-LR-119-3

Lab Sample ID: 580-36242-24

Date Collected: 12/03/12 14:35

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	128254	01/16/13 15:43	RB	TAL SEA

Client Sample ID: LRIS-LR-122-3

Lab Sample ID: 580-36242-32

Date Collected: 12/03/12 15:22

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	128254	01/16/13 15:47	RB	TAL SEA

Client Sample ID: LRIS-LR-124-3

Lab Sample ID: 580-36242-37

Date Collected: 12/03/12 10:00

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	128254	01/16/13 15:52	RB	TAL SEA

Client Sample ID: LRIS-LR-125-3

Lab Sample ID: 580-36242-41

Date Collected: 12/02/12 13:15

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	128254	01/16/13 15:56	RB	TAL SEA

Client Sample ID: LRIS-LR-132-5

Lab Sample ID: 580-36242-67

Date Collected: 12/03/12 14:15

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	128325	01/17/13 11:40	RB	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Certification Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-6

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-04-13
California	NELAP	9	1115CA	01-31-13
L-A-B	DoD ELAP		L2236	01-19-13
L-A-B	ISO/IEC 17025		L2236	01-19-13
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-13
USDA	Federal		P330-11-00222	05-20-14
Washington	State Program	10	C553	02-17-13

Sample Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-6

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-36242-21	LRIS-LR-110-4	Solid	12/03/12 10:40	12/07/12 08:50
580-36242-24	LRIS-LR-119-3	Solid	12/03/12 14:35	12/07/12 08:50
580-36242-32	LRIS-LR-122-3	Solid	12/03/12 15:22	12/07/12 08:50
580-36242-37	LRIS-LR-124-3	Solid	12/03/12 10:00	12/07/12 08:50
580-36242-41	LRIS-LR-125-3	Solid	12/02/12 13:15	12/07/12 08:50
580-36242-67	LRIS-LR-132-5	Solid	12/03/12 14:15	12/07/12 08:50



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Page: 1 of 9
Cooler # 8461

Lab Information: Lab: Test America Site Code: Lake River Industrial Site
Address: 5735 8th Street E, Tacoma, WA 98424
Site Address: 1110 Division St
City: Puyallup, WA
State: WA
City/State: Puyallup, WA
Phone/Fax: /
Send EDD to: Erik Navar
CC Hardcopy to: Erik Navar, Madi Novak
Lab Quote #: /
PM Email: /
CC Hardcopy to: /

Project Information: Project # 9003.01.40
Send Invoice to: Laurie Olin, Madi Novak
Phone #: /

Other Information: PO # /

ITEM #	Field Sample No. / Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis		Preservative		Lab Notes
							ARCHIVE	1613B - Dioxin/Furan	Total Organic Carbon - COE 9060		
1	LRS-LR-103-2	SUB_S O-SED	C	12/03/2012 13:30	3		X				
2	LRS-LR-103-3	SUB_S O-SED	C	12/03/2012 13:35	3		X				
3	LRS-LR-103-4	SUB_S O-SED	C	12/03/2012 13:40	3		X				
4	LRS-LR-103-5	SUB_S O-SED	C	12/03/2012 13:45	3		X				
5	LRS-LR-103	SOIL-SED	G	12/04/2012 11:55	3		X	X	X		
6	LRS-LR-106-2	SUB_S O-SED	G	12/02/2012 17:25	3		X				
7	LRS-LR-106-3	SUB_S O-SED	C	12/02/2012 17:30	3		X				
8	LRS-LR-106-4	SUB_S O-SED	C	12/02/2012 17:35	3		X				
9	LRS-LR-106-5	SUB_S O-SED	C	12/02/2012 17:40	3		X				
10	LRS-LR-106	SOIL-SED	G	12/04/2012 11:42	3		X	X	X		
11	LRS-LR-108-2	SUB_S O-SED	G	12/03/2012 11:20	3		X				

Additional Comments/Special Instructions:

REINQUISHED BY / AFFILIATION: ENK NAVAR DATE: 12/3/12 TIME: 08:50
ACCEPTED BY / AFFILIATION: Madi Novak DATE: 12/3/12 TIME: 08:50

Company:	Tracking #:	DATE/TIME:	Temp in OC	Samples on Ice?	Sample intact?	Trip Blank?
			Y/N	Y/N	Y/N	Y/N

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Lab Information:				Project Information:				Other Information:				Task:					
Lab: Unknown Laboratory		Site Code: Lake River Industrial Site		Project #		Address:		Send EDD to:		TAT		Total # of Samples: 97		2012_LR_SED		Event Complete?	
Address:		Site Address		City/State		City/State		CC Hardcopy to		Notes: F= Field Filtered, H= Hold							
Lab P/M:		City/State/Zip		P/M Name		PO #		Send EDD to		Rush							
Phone/Fax:		P/M Phone/Fax		P/M Email		CC Hardcopy to		CC Hardcopy to									
P/M email																	
Lab Quote #:																	
ITEM #	Field Sample No. / Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes								
12	LRS-LR-108-3	SUB_S O-SED	C	12/03/2012 11:25	3		X		Archive								
13	LRS-LR-108-4	SUB_S O-SED	C	12/03/2012 11:30	3		X		1613B - Dioxin/Furan								
14	LRS-LR-108-5	SUB_S O-SED	C	12/03/2012 11:35	3		X		Total Organic Carbon - COE 9060								
15	LRS-LR-109-2	SUB_S O-SED	C	12/02/2012 15:10	3		X										
16	LRS-LR-109-3	SUB_S O-SED	G	12/02/2012 15:15	3		X										
17	LRS-LR-109-4	SUB_S O-SED	G	12/02/2012 15:20	3		X										
18	LRS-LR-109-5	SUB_S O-SED	C	12/02/2012 15:25	3		X										
19	LRS-LR-110-2	SUB_S O-SED	C	12/03/2012 10:30	3		X										
20	LRS-LR-110-3	SUB_S O-SED	C	12/03/2012 10:35	3		X										
21	LRS-LR-110-4	SUB_S O-SED	C	12/03/2012 10:40	3		X										
22	LRS-LR-110-5	SUB_S O-SED	C	12/03/2012 10:45	3		X										

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Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: Task: Total # of Samples: 97 2012_LR_SED Event Complete?

Address:	Site Code:	Lake River Industrial Site	Send Invoice to:	
Project #	Site Address	City/State:	Phone #:	
City/State:	State, Zip	PO #	Send EDD to	
City/State:	City/State:	CC Hardcopy to	CC Hardcopy to	
Lab PIV:	PIV Name	PIV Email:		
Phone/Fax: /	PIV Name			
PIV email	PIV Name			
Lab Quote #:	PIV Email:			

ITEM #	Field Sample No. / Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush
23	LRS-LR-119-2	SUB_S O-SED	C	12/03/2012 14:30	3		Archive				
24	LRS-LR-119-3	SUB_S O-SED	C	12/03/2012 14:35	3		1613B - Dioxin/Furan				
25	LRS-LR-119-4	SUB_S O-SED	C	12/03/2012 14:40	3		Total Organic Carbon - COE 9060				
26	LRS-LR-119-5	SUB_S O-SED	C	12/03/2012 14:45	3						
27	LRS-LR-120-2	SUB_S O-SED	G	12/03/2012 12:20	3						
28	LRS-LR-120-3	SUB_S O-SED	G	12/03/2012 12:25	3						
29	LRS-LR-120-4	SUB_S O-SED	C	12/03/2012 12:30	3						
30	LRS-LR-120-5	SUB_S O-SED	C	12/03/2012 12:35	3						
31	LRS-LR-122-2	SUB_S O-SED	C	12/03/2012 15:22	3						
32	LRS-LR-122-3	SUB_S O-SED	C	12/03/2012 15:22	3						
33	LRS-LR-122-4	SUB_S O-SED	C	12/03/2012 15:22	3						

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Project Information: Other Information:

Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Address:	City/State:	Phone #:
Address:	Project #	Site Address	City/State:	Phone #:
Lab PIV: /	City:	State, Zip	PO #	
Phone/Fax: /	PIV Name	Send EDD to	CC Hardcopy to	
PIV email	Phone/Fax:	CC Hardcopy to	CC Hardcopy to	
Lab Quote #:	PIV Email:			

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush	Event Complete?
34	LRS-LR-122-5	SUB_S O-SED	C	12/03/2012 15:22	3		X	Archive				
35	LRS-LR-122	SUB_S O-SED	C	12/04/2012 11:27	3		X	1613B - Dioxin/Furan				
36	LRS-LR-124-2	SUB_S O-SED	C	12/03/2012 09:50	3		X	Total Organic Carbon - COE 9060				
37	LRS-LR-124-3	SUB_S O-SED	C	12/03/2012 10:00	3		X					
38	LRS-LR-124-4	SUB_S O-SED	G	12/03/2012 10:05	3		X					
39	LRS-LR-124-5	SUB_S O-SED	G	12/03/2012 10:10	3		X					
40	LRS-LR-125-2	SUB_S O-SED	C	12/02/2012 13:10	3		X					
41	LRS-LR-125-3	SUB_S O-SED	C	12/02/2012 13:15	3		X					
42	LRS-LR-125-4	SUB_S O-SED	C	12/02/2012 13:20	3		X					
43	LRS-LR-126-2	SUB_S O-SED	C	12/02/2012 12:40	3		X					
44	LRS-LR-126-3	SUB_S O-SED	C	12/02/2012 12:45	3		X					

Task: 2012_LR_SED
Total # of Samples: 97
Notes: F= Field Filtered, H= Hold
Rush

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

36242

Lab Information: Unknown Laboratory **Project Information:** Site Code: Lake River Industrial Site **Other Information:** Send Invoice to:

Address:	Project #	Site Address	City	State	Zip	Send Invoice to:	Address:	City/State:	Phone #:
Lab P.M.:	City	State	Zip	PO #	Send EDD to	CC Hardcopy to	CC Hardcopy to		
Phone/Fax: /	PM Name	PM Email:	PM Email:						
Lab Quote #:									

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Notes: F= Field Filtered, H= Hold	Rush
46	L.RIS-LR-126-4	SUB_S O-SED	C	12/02/2012 12:47	3		Archive			X		
46	L.RIS-LR-126-5	SUB_S O-SED	C	12/02/2012 12:50	3		1613B - Dioxin/Furan			X		
46	L.RIS-LR-126	SOIL- SED	C	12/04/2012 08:56	3		Total Organic Carbon - COE 9060			X		
47	L.RIS-LR-129-2	SUB_S O-SED	C	12/02/2012 13:50	3					X		
48	L.RIS-LR-129-3	SUB_S O-SED	G	12/02/2012 13:55	3					X		
48	L.RIS-LR-129-4	SUB_S O-SED	G	12/02/2012 14:00	3					X		
49	L.RIS-LR-129-5	SUB_S O-SED	C	12/02/2012 14:05	3					X		
51	L.RIS-LR-129	SOIL- SED	C	12/04/2012 10:10	3					X		
52	L.RIS-LR-130-2	SUB_S O-SED	C	12/02/2012 14:40	3					X		
53	L.RIS-LR-130-FD	QAQC		12/02/2012 14:40	3					X		
54	L.RIS-LR-130-3	SUB_S O-SED		12/02/2012 14:45	3					X		

Task:	2012_LR_SED
Total # of Samples:	97
Event Complete?	

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Lab: Unknown Laboratory **Project Information:** Site Code: Lake River Industrial Site **Other Information:** Send Invoice to: Task: Total # of Samples: 97 2012_LR_SED Event Complete?

Address: Project # Lake River Industrial Site Address: City/State: Phone #:

Lab P.M.: City/ State, Zip PO # Send EDD to CC Hardcopy to CC Hardcopy to

Phone/Fax: / PM Name Phone/Fax: PM Email: Lab Quote #:

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Notes: F=Field Filtered, H=Hold	Rush
56	LRS-LR-130-4	SUB_S O-SED	C	12/02/2012 14:50	3		Archive			X		
57	LRS-LR-130-5	SUB_S O-SED	C	12/02/2012 14:55	3		1613B - Dioxin/Furan			X		
58	LRS-LR-130	SOIL-SED	C	12/04/2012 10:24	3		Total Organic Carbon - COE 9060			X		
59	LRS-LR-130-FD-1	QAQC	C	12/04/2012 10:24	3					X		
60	LRS-LR-131-2	SUB_S O-SED	G	12/02/2012 16:30	3					X		
61	LRS-LR-131-3	SUB_S O-SED	G	12/02/2012 16:35	3					X		
62	LRS-LR-131-4	SUB_S O-SED	C	12/02/2012 16:40	3					X		
63	LRS-LR-131	SOIL-SED	C	12/04/2012 11:15	3					X		
64	LRS-LR-132-2	SUB_S O-SED	C	12/03/2012 14:00	3					X		
65	LRS-LR-132-3	SUB_S O-SED	C	12/03/2012 14:05	3					X		
66	LRS-LR-132-4	SUB_S O-SED	C	12/03/2012 14:10	3					X		

36242

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to:

Address:	Site Code:	Lake River Industrial Site	Send Invoice to:	
Project #	Site Address:		Address:	
City:	State:	Zip:	City/State:	Phone #:
Lab PVI:	PVI Name		PO #	
Phone/Fax:	Phone/Fax:		Send EDD to	
PVI email:	PVI Email:		CC Hardcopy to	
Lab Quote #:			CC Hardcopy to	

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis		Preservative	Lab Notes					
							Archive	1613B - Dioxin/Furan	Total Organic Carbon - COE 9060	TAT	Notes: F= Field Filtered , H= Hold	Rush			
67	LRS-LR-132-5	SUB_S O-SED	C	12/03/2012 14:15	3		X								
68	LRS-LR-132	SOL-SED	C	12/04/2012 12:06	3		X								
69	LRS-LR-133-2	SUB_S O-SED	C	12/03/2012 15:15	3		X	X							
70	LRS-LR-133-3	SUB_S O-SED	C	12/03/2012 15:20	3		X								
71	LRS-LR-133-4	SUB_S O-SED	G	12/03/2012 15:25	3		X								
72	LRS-LR-133-5	SUB_S O-SED	G	12/03/2012 15:30	3		X								
73	LRS-LR-133	SOL-SED	C	12/04/2012 12:49	3		X								
74	LRS-LR-134-2	SUB_S O-SED	C	12/02/2012 10:20	3		X	X							
75	LRS-LR-134-3	SUB_S O-SED	C	12/02/2012 10:28	3		X								
76	LRS-LR-134-4	SUB_S O-SED	C	12/02/2012 10:30	3		X								
77	LRS-LR-134-5	SUB_S O-SED	C	12/02/2012 10:35	3		X								

Task: 2012_LR_SED
Total # of Samples: 97
Event Complete?

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: Address: City/State: Phone #:

Address: Project # Site Address City State, Zip PO # Send EDD to CC Hardcopy to CC Hardcopy to

Phone/Fax: / P/M Name P/M Phone/Fax: P/M Email:

Lab P/M: City State, Zip PO # Send EDD to CC Hardcopy to CC Hardcopy to

Phone/Fax: / P/M Name P/M Phone/Fax: P/M Email:

Lab Quote #:

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush	Event Complete?
78	LRS-LR-134	SOIL-SED	C	12/04/2012 13:10	3		Archive					
79	LRS-LR-135-2	SUB_S O-SED	C	12/03/2012 15:45	3		1613B - Dioxin/Furan					
80	LRS-LR-135-3	SUB_S O-SED	C	12/03/2012 15:50	3		Total Organic Carbon - COE 9060					
81	LRS-LR-135-4	SUB_S O-SED	C	12/03/2012 15:55	3							
82	LRS-LR-135-5	SUB_S O-SED	G	12/03/2012 16:00	3							
83	LRS-LR-135	SOIL-SED	G	12/04/2012 13:01	3							
84	LRS-LR-136-2	SUB_S O-SED	C	12/02/2012 16:50	3							
85	LRS-LR-136-3	SUB_S O-SED	C	12/02/2012 16:55	3							
86	LRS-LR-136-4	SUB_S O-SED	C	12/02/2012 17:00	3							
87	LRS-LR-136-5	SUB_S O-SED	C	12/02/2012 17:05	3							
88	LRS-LR-136	SOIL-SED	C	12/04/2012 10:39	3							

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

362242

Lab Information: **Project Information:** **Other Information:**

Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Send Invoice to:	Address:	City/State:	Phone #:
Address:	Project #:	City/State:	City/State:	City/State:	Phone #:
Site Address:	Site Address:	City/State:	City/State:	City/State:	Phone #:
Lab P.M.:	City:	State:	Zip:	PO #:	
Phone/Fax: /	PM Name:	Send EDD to:	OC Hardcopy to:	OC Hardcopy to:	
PM Email:	Phone/Fax:	OC Hardcopy to:	OC Hardcopy to:	OC Hardcopy to:	
Lab Quote #:	PM Email:				

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush	Event Complete?
88	LRS-LR-137-2	SUB_S O-SED	C	12/02/2012 12:10	3		X	Archive				
89	LRS-LR-137-3	SUB_S O-SED	C	12/02/2012 12:15	3		X	1613B - Dioxin/Furan				
90	LRS-LR-137-4	SUB_S O-SED	C	12/02/2012 12:17	3		X	Total Organic Carbon - COE 9060				
91	LRS-LR-137-5	SUB_S O-SED	C	12/02/2012 12:20	3		X					
92	LRS-LR-137	SOIL-SED	G	12/04/2012 09:14	3		X					
93	LRS-LR-RB-20121202	QAQC	G	12/02/2012 17:00	2		X					
94	LRS-LR-RB-20121203	QAQC	C	12/03/2012 17:30	2		X					
95	LRS-LR-RB-20121204	QAQC	C	12/04/2012 17:35	1		X					
96	LRS-LR-PS-SRM	SOIL-SED	C	11/26/2012 10:00	2		X					
97												

Task: Total # of Samples: 97 2012_LR_SED Event Complete?

Notes: F= Field Filtered , H= Hold

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-6

Login Number: 36242

List Number: 1

Creator: Riley, Nicole

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Not requested on COC.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-36242-7

Client Project/Site: Port of Ridgefield

For:

Maul Foster & Alongi Inc
2001 NW 19th Avenue, Suite 200
Portland, Oregon 97239

Attn: Ms. Madi Novak

Pamela R. Johnson

Authorized for release by:
2/25/2013 3:11:26 PM

Pam Johnson
Project Manager I
pamr.johnson@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

Job ID: 580-36242-7

Laboratory: TestAmerica Seattle

Narrative

Comments

No additional comments.

Receipt

The samples were received on 12/7/2012 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 8 coolers at receipt time were 2.6° C, 2.9° C, 3.4° C, 4.3° C, 4.5° C, 4.6° C, 5.9° C and 6.0° C.

Dioxin - Method 1613B

Ion abundance ratios are outside criteria for sample LRIS-LR-PS-SRM (580-36242-97). Quantitation is based on the theoretical ion abundance ratio; therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC). The affected analytes have been flagged.

No other analytical or quality issues were noted.

General Chemistry

No analytical or quality issues were noted.

Dioxin Prep

No analytical or quality issues were noted.

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Definitions/Glossary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The isomer is qualified as positively identified, but at an estimated quantity because the quantitation is based on the theoretical ratio for these samples.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

Client Sample ID: LRIS-LR-110-5

Lab Sample ID: 580-36242-22

Date Collected: 12/03/12 10:45

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 64.4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	2.4		0.62	0.044	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
2,3,7,8-TCDF	3.7		0.62	0.069	pg/g	*	02/08/13 13:50	02/11/13 23:40	1
1,2,3,7,8-PeCDD	6.8		3.1	0.23	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
1,2,3,7,8-PeCDF	8.6		3.1	0.16	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
2,3,4,7,8-PeCDF	8.3		3.1	0.17	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
1,2,3,4,7,8-HxCDD	14	B	3.1	0.095	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
1,2,3,6,7,8-HxCDD	98		3.1	0.11	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
1,2,3,7,8,9-HxCDD	48		3.1	0.093	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
1,2,3,4,7,8-HxCDF	39		3.1	0.21	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
1,2,3,6,7,8-HxCDF	19		3.1	0.22	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
1,2,3,7,8,9-HxCDF	1.8	J	3.1	0.23	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
2,3,4,6,7,8-HxCDF	9.1		3.1	0.21	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
1,2,3,4,6,7,8-HpCDD	2100		31	12	pg/g	*	02/08/13 13:50	02/13/13 13:17	10
1,2,3,4,6,7,8-HpCDF	160	B	3.1	0.45	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
1,2,3,4,7,8,9-HpCDF	9.3		3.1	0.52	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
OCDD	14000	B	62	23	pg/g	*	02/08/13 13:50	02/13/13 13:17	10
OCDF	180	B	6.2	0.15	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
Total TCDD	88	q	0.62	0.044	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
Total TCDF	66	q	0.62	0.13	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
Total PeCDD	180	q	3.1	0.23	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
Total PeCDF	160	q	3.1	0.16	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
Total HxCDD	740	B	3.1	0.10	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
Total HxCDF	590		3.1	0.22	pg/g	*	02/08/13 13:50	02/11/13 20:01	1
Total HpCDD	4400	B	31	12	pg/g	*	02/08/13 13:50	02/13/13 13:17	10
Total HpCDF	520	B	3.1	0.48	pg/g	*	02/08/13 13:50	02/11/13 20:01	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	78		25 - 164	02/08/13 13:50	02/11/13 20:01	1
13C-2,3,7,8-TCDD	73		25 - 164	02/08/13 13:50	02/11/13 23:40	1
13C-2,3,7,8-TCDF	84		24 - 169	02/08/13 13:50	02/11/13 20:01	1
13C-2,3,7,8-TCDF	70		24 - 169	02/08/13 13:50	02/11/13 23:40	1
13C-1,2,3,7,8-PeCDD	79		25 - 181	02/08/13 13:50	02/11/13 20:01	1
13C-1,2,3,7,8-PeCDF	80		24 - 185	02/08/13 13:50	02/11/13 20:01	1
13C-2,3,4,7,8-PeCDF	87		21 - 178	02/08/13 13:50	02/11/13 20:01	1
13C-1,2,3,4,7,8-HxCDD	98		32 - 141	02/08/13 13:50	02/11/13 20:01	1
13C-1,2,3,6,7,8-HxCDD	77		28 - 130	02/08/13 13:50	02/11/13 20:01	1
13C-1,2,3,4,7,8-HxCDF	88		26 - 152	02/08/13 13:50	02/11/13 20:01	1
13C-1,2,3,6,7,8-HxCDF	83		26 - 123	02/08/13 13:50	02/11/13 20:01	1
13C-1,2,3,7,8,9-HxCDF	80		29 - 147	02/08/13 13:50	02/11/13 20:01	1
13C-2,3,4,6,7,8-HxCDF	83		28 - 136	02/08/13 13:50	02/11/13 20:01	1
13C-1,2,3,4,6,7,8-HpCDD	69		23 - 140	02/08/13 13:50	02/11/13 20:01	1
13C-1,2,3,4,6,7,8-HpCDD	44		23 - 140	02/08/13 13:50	02/13/13 13:17	10
13C-1,2,3,4,6,7,8-HpCDF	75		28 - 143	02/08/13 13:50	02/11/13 20:01	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	02/08/13 13:50	02/11/13 20:01	1
13C-OCDD	79		17 - 157	02/08/13 13:50	02/11/13 20:01	1
13C-OCDD	52		17 - 157	02/08/13 13:50	02/13/13 13:17	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	104		35 - 197	02/08/13 13:50	02/11/13 20:01	1
37Cl4-2,3,7,8-TCDD	83		35 - 197	02/08/13 13:50	02/11/13 23:40	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

Client Sample ID: LRIS-LR-110-5

Lab Sample ID: 580-36242-22

Date Collected: 12/03/12 10:45

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 64.4

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	96		35 - 197	02/08/13 13:50	02/13/13 13:17	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	13000		2000	610	mg/Kg			02/06/13 15:05	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	64		0.10	0.10	%			02/12/13 12:22	1
Percent Moisture	36		0.10	0.10	%			02/12/13 12:22	1

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

Client Sample ID: LRIS-LR-124-4

Lab Sample ID: 580-36242-38

Date Collected: 12/03/12 10:05

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 67.9

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.079	J q	0.59	0.025	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
2,3,7,8-TCDF	0.39	J	0.59	0.034	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
1,2,3,7,8-PeCDD	ND		2.9	0.065	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
1,2,3,7,8-PeCDF	0.23	J q	2.9	0.050	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
2,3,4,7,8-PeCDF	0.39	J q	2.9	0.056	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
1,2,3,4,7,8-HxCDD	ND		2.9	0.025	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
1,2,3,6,7,8-HxCDD	1.3	J q	2.9	0.025	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
1,2,3,7,8,9-HxCDD	0.35	J q	2.9	0.023	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
1,2,3,4,7,8-HxCDF	1.2	J	2.9	0.033	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
1,2,3,6,7,8-HxCDF	0.65	J	2.9	0.034	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
1,2,3,7,8,9-HxCDF	ND		2.9	0.036	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
2,3,4,6,7,8-HxCDF	0.58	J q	2.9	0.033	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
1,2,3,4,6,7,8-HpCDD	26		2.9	0.080	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
1,2,3,4,6,7,8-HpCDF	4.1	B	2.9	0.046	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
1,2,3,4,7,8,9-HpCDF	ND		2.9	0.057	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
OCDD	280	B	5.9	0.20	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
OCDF	3.3	J B	5.9	0.050	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
Total TCDD	1.2	q	0.59	0.025	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
Total TCDF	3.8	q	0.59	0.034	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
Total PeCDD	1.2	J q	2.9	0.065	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
Total PeCDF	6.8	q	2.9	0.053	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
Total HxCDD	7.6	B q	2.9	0.024	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
Total HxCDF	13	q	2.9	0.034	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
Total HpCDD	61	B	2.9	0.080	pg/g	*	02/08/13 13:50	02/11/13 20:45	1
Total HpCDF	11	B	2.9	0.052	pg/g	*	02/08/13 13:50	02/11/13 20:45	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	93		25 - 164	02/08/13 13:50	02/11/13 20:45	1
13C-2,3,7,8-TCDF	100		24 - 169	02/08/13 13:50	02/11/13 20:45	1
13C-1,2,3,7,8-PeCDD	93		25 - 181	02/08/13 13:50	02/11/13 20:45	1
13C-1,2,3,7,8-PeCDF	94		24 - 185	02/08/13 13:50	02/11/13 20:45	1
13C-2,3,4,7,8-PeCDF	102		21 - 178	02/08/13 13:50	02/11/13 20:45	1
13C-1,2,3,4,7,8-HxCDD	111		32 - 141	02/08/13 13:50	02/11/13 20:45	1
13C-1,2,3,6,7,8-HxCDD	93		28 - 130	02/08/13 13:50	02/11/13 20:45	1
13C-1,2,3,4,7,8-HxCDF	99		26 - 152	02/08/13 13:50	02/11/13 20:45	1
13C-1,2,3,6,7,8-HxCDF	97		26 - 123	02/08/13 13:50	02/11/13 20:45	1
13C-1,2,3,7,8,9-HxCDF	96		29 - 147	02/08/13 13:50	02/11/13 20:45	1
13C-2,3,4,6,7,8-HxCDF	97		28 - 136	02/08/13 13:50	02/11/13 20:45	1
13C-1,2,3,4,6,7,8-HpCDD	82		23 - 140	02/08/13 13:50	02/11/13 20:45	1
13C-1,2,3,4,6,7,8-HpCDF	85		28 - 143	02/08/13 13:50	02/11/13 20:45	1
13C-1,2,3,4,7,8,9-HpCDF	98		26 - 138	02/08/13 13:50	02/11/13 20:45	1
13C-OCDD	86		17 - 157	02/08/13 13:50	02/11/13 20:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	116		35 - 197	02/08/13 13:50	02/11/13 20:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	5600		2000	610	mg/Kg			02/06/13 15:20	1

TestAmerica Seattle

Client Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

Client Sample ID: LRIS-LR-124-4

Lab Sample ID: 580-36242-38

Date Collected: 12/03/12 10:05

Matrix: Solid

Date Received: 12/07/12 08:50

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	68		0.10	0.10	%			02/12/13 12:22	1
Percent Moisture	32		0.10	0.10	%			02/12/13 12:22	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

Client Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

Client Sample ID: LRIS-LR-PS-SRM

Lab Sample ID: 580-36242-97

Date Collected: 11/26/12 10:00

Matrix: Solid

Date Received: 12/07/12 08:50

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	1.0		0.40	0.026	pg/g		02/08/13 13:50	02/11/13 21:28	1
2,3,7,8-TCDF	0.61		0.40	0.039	pg/g		02/08/13 13:50	02/12/13 00:17	1
1,2,3,7,8-PeCDD	0.86	J	2.0	0.072	pg/g		02/08/13 13:50	02/11/13 21:28	1
1,2,3,7,8-PeCDF	0.99	J	2.0	0.038	pg/g		02/08/13 13:50	02/11/13 21:28	1
2,3,4,7,8-PeCDF	0.76	J	2.0	0.038	pg/g		02/08/13 13:50	02/11/13 21:28	1
1,2,3,4,7,8-HxCDD	1.4	J B	2.0	0.033	pg/g		02/08/13 13:50	02/11/13 21:28	1
1,2,3,6,7,8-HxCDD	3.9		2.0	0.037	pg/g		02/08/13 13:50	02/11/13 21:28	1
1,2,3,7,8,9-HxCDD	3.0		2.0	0.031	pg/g		02/08/13 13:50	02/11/13 21:28	1
1,2,3,4,7,8-HxCDF	3.4		2.0	0.039	pg/g		02/08/13 13:50	02/11/13 21:28	1
1,2,3,6,7,8-HxCDF	1.1	J q	2.0	0.038	pg/g		02/08/13 13:50	02/11/13 21:28	1
1,2,3,7,8,9-HxCDF	ND		2.0	0.044	pg/g		02/08/13 13:50	02/11/13 21:28	1
2,3,4,6,7,8-HxCDF	1.5	J	2.0	0.040	pg/g		02/08/13 13:50	02/11/13 21:28	1
1,2,3,4,6,7,8-HpCDD	100		2.0	0.12	pg/g		02/08/13 13:50	02/11/13 21:28	1
1,2,3,4,6,7,8-HpCDF	20	B	2.0	0.093	pg/g		02/08/13 13:50	02/11/13 21:28	1
1,2,3,4,7,8,9-HpCDF	1.3	J	2.0	0.11	pg/g		02/08/13 13:50	02/11/13 21:28	1
OCDD	800	B	4.0	0.24	pg/g		02/08/13 13:50	02/11/13 21:28	1
OCDF	70	B	4.0	0.062	pg/g		02/08/13 13:50	02/11/13 21:28	1
Total TCDD	4.5	q	0.40	0.026	pg/g		02/08/13 13:50	02/11/13 21:28	1
Total TCDF	9.4	q	0.40	0.023	pg/g		02/08/13 13:50	02/11/13 21:28	1
Total PeCDD	5.4	q	2.0	0.072	pg/g		02/08/13 13:50	02/11/13 21:28	1
Total PeCDF	10	q	2.0	0.038	pg/g		02/08/13 13:50	02/11/13 21:28	1
Total HxCDD	32	B	2.0	0.034	pg/g		02/08/13 13:50	02/11/13 21:28	1
Total HxCDF	34	q	2.0	0.040	pg/g		02/08/13 13:50	02/11/13 21:28	1
Total HpCDD	250	B	2.0	0.12	pg/g		02/08/13 13:50	02/11/13 21:28	1
Total HpCDF	68	B	2.0	0.10	pg/g		02/08/13 13:50	02/11/13 21:28	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	91		25 - 164	02/08/13 13:50	02/11/13 21:28	1
13C-2,3,7,8-TCDF	99		24 - 169	02/08/13 13:50	02/11/13 21:28	1
13C-2,3,7,8-TCDF	81		24 - 169	02/08/13 13:50	02/12/13 00:17	1
13C-1,2,3,7,8-PeCDD	95		25 - 181	02/08/13 13:50	02/11/13 21:28	1
13C-1,2,3,7,8-PeCDF	94		24 - 185	02/08/13 13:50	02/11/13 21:28	1
13C-2,3,4,7,8-PeCDF	104		21 - 178	02/08/13 13:50	02/11/13 21:28	1
13C-1,2,3,4,7,8-HxCDD	101		32 - 141	02/08/13 13:50	02/11/13 21:28	1
13C-1,2,3,6,7,8-HxCDD	96		28 - 130	02/08/13 13:50	02/11/13 21:28	1
13C-1,2,3,4,7,8-HxCDF	99		26 - 152	02/08/13 13:50	02/11/13 21:28	1
13C-1,2,3,6,7,8-HxCDF	94		26 - 123	02/08/13 13:50	02/11/13 21:28	1
13C-1,2,3,7,8,9-HxCDF	91		29 - 147	02/08/13 13:50	02/11/13 21:28	1
13C-2,3,4,6,7,8-HxCDF	94		28 - 136	02/08/13 13:50	02/11/13 21:28	1
13C-1,2,3,4,6,7,8-HpCDD	80		23 - 140	02/08/13 13:50	02/11/13 21:28	1
13C-1,2,3,4,6,7,8-HpCDF	83		28 - 143	02/08/13 13:50	02/11/13 21:28	1
13C-1,2,3,4,7,8,9-HpCDF	94		26 - 138	02/08/13 13:50	02/11/13 21:28	1
13C-OCDD	89		17 - 157	02/08/13 13:50	02/11/13 21:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	115		35 - 197	02/08/13 13:50	02/11/13 21:28	1
37Cl4-2,3,7,8-TCDD	90		35 - 197	02/08/13 13:50	02/12/13 00:17	1

QC Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-10098/1-A

Matrix: Solid

Analysis Batch: 10273

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 10098

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.50	0.016	pg/g		02/08/13 13:50	02/11/13 17:09	1
2,3,7,8-TCDF	ND		0.50	0.011	pg/g		02/08/13 13:50	02/11/13 17:09	1
1,2,3,7,8-PeCDD	ND		2.5	0.022	pg/g		02/08/13 13:50	02/11/13 17:09	1
1,2,3,7,8-PeCDF	ND		2.5	0.013	pg/g		02/08/13 13:50	02/11/13 17:09	1
2,3,4,7,8-PeCDF	ND		2.5	0.015	pg/g		02/08/13 13:50	02/11/13 17:09	1
1,2,3,4,7,8-HxCDD	0.0451	J q	2.5	0.0091	pg/g		02/08/13 13:50	02/11/13 17:09	1
1,2,3,6,7,8-HxCDD	ND		2.5	0.0094	pg/g		02/08/13 13:50	02/11/13 17:09	1
1,2,3,7,8,9-HxCDD	ND		2.5	0.0083	pg/g		02/08/13 13:50	02/11/13 17:09	1
1,2,3,4,7,8-HxCDF	ND		2.5	0.0087	pg/g		02/08/13 13:50	02/11/13 17:09	1
1,2,3,6,7,8-HxCDF	ND		2.5	0.042	pg/g		02/08/13 13:50	02/11/13 17:09	1
1,2,3,7,8,9-HxCDF	ND		2.5	0.025	pg/g		02/08/13 13:50	02/11/13 17:09	1
2,3,4,6,7,8-HxCDF	ND		2.5	0.015	pg/g		02/08/13 13:50	02/11/13 17:09	1
1,2,3,4,6,7,8-HpCDD	ND		2.5	0.016	pg/g		02/08/13 13:50	02/11/13 17:09	1
1,2,3,4,6,7,8-HpCDF	0.0698	J	2.5	0.012	pg/g		02/08/13 13:50	02/11/13 17:09	1
1,2,3,4,7,8,9-HpCDF	ND		2.5	0.017	pg/g		02/08/13 13:50	02/11/13 17:09	1
OCDD	0.161	J q	5.0	0.024	pg/g		02/08/13 13:50	02/11/13 17:09	1
OCDF	0.250	J	5.0	0.026	pg/g		02/08/13 13:50	02/11/13 17:09	1
Total TCDD	ND		0.50	0.042	pg/g		02/08/13 13:50	02/11/13 17:09	1
Total TCDF	ND		0.50	0.011	pg/g		02/08/13 13:50	02/11/13 17:09	1
Total PeCDD	ND		2.5	0.022	pg/g		02/08/13 13:50	02/11/13 17:09	1
Total PeCDF	ND		2.5	0.015	pg/g		02/08/13 13:50	02/11/13 17:09	1
Total HxCDD	0.0451	J q	2.5	0.0090	pg/g		02/08/13 13:50	02/11/13 17:09	1
Total HxCDF	ND		2.5	0.042	pg/g		02/08/13 13:50	02/11/13 17:09	1
Total HpCDD	0.0678	J q	2.5	0.016	pg/g		02/08/13 13:50	02/11/13 17:09	1
Total HpCDF	0.0698	J	2.5	0.015	pg/g		02/08/13 13:50	02/11/13 17:09	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	74		25 - 164	02/08/13 13:50	02/11/13 17:09	1
13C-2,3,7,8-TCDF	79		24 - 169	02/08/13 13:50	02/11/13 17:09	1
13C-1,2,3,7,8-PeCDD	72		25 - 181	02/08/13 13:50	02/11/13 17:09	1
13C-1,2,3,7,8-PeCDF	75		24 - 185	02/08/13 13:50	02/11/13 17:09	1
13C-2,3,4,7,8-PeCDF	80		21 - 178	02/08/13 13:50	02/11/13 17:09	1
13C-1,2,3,4,7,8-HxCDD	85		32 - 141	02/08/13 13:50	02/11/13 17:09	1
13C-1,2,3,6,7,8-HxCDD	76		28 - 130	02/08/13 13:50	02/11/13 17:09	1
13C-1,2,3,4,7,8-HxCDF	81		26 - 152	02/08/13 13:50	02/11/13 17:09	1
13C-1,2,3,6,7,8-HxCDF	78		26 - 123	02/08/13 13:50	02/11/13 17:09	1
13C-1,2,3,7,8,9-HxCDF	77		29 - 147	02/08/13 13:50	02/11/13 17:09	1
13C-2,3,4,6,7,8-HxCDF	78		28 - 136	02/08/13 13:50	02/11/13 17:09	1
13C-1,2,3,4,6,7,8-HpCDD	67		23 - 140	02/08/13 13:50	02/11/13 17:09	1
13C-1,2,3,4,6,7,8-HpCDF	74		28 - 143	02/08/13 13:50	02/11/13 17:09	1
13C-1,2,3,4,7,8,9-HpCDF	80		26 - 138	02/08/13 13:50	02/11/13 17:09	1
13C-OCDD	73		17 - 157	02/08/13 13:50	02/11/13 17:09	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	100		35 - 197	02/08/13 13:50	02/11/13 17:09	1

TestAmerica Seattle

QC Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-10098/2-A

Matrix: Solid

Analysis Batch: 10273

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 10098

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	20.0	23.2		pg/g		116	67 - 158
2,3,7,8-TCDF	20.0	20.8		pg/g		104	75 - 158
1,2,3,7,8-PeCDD	100	104		pg/g		104	70 - 142
1,2,3,7,8-PeCDF	100	111		pg/g		111	80 - 134
2,3,4,7,8-PeCDF	100	101		pg/g		101	68 - 160
1,2,3,4,7,8-HxCDD	100	97.4		pg/g		97	70 - 164
1,2,3,6,7,8-HxCDD	100	102		pg/g		102	76 - 134
1,2,3,7,8,9-HxCDD	100	99.8		pg/g		100	64 - 162
1,2,3,4,7,8-HxCDF	100	101		pg/g		101	72 - 134
1,2,3,6,7,8-HxCDF	100	111		pg/g		111	84 - 130
1,2,3,7,8,9-HxCDF	100	109		pg/g		109	78 - 130
2,3,4,6,7,8-HxCDF	100	110		pg/g		110	70 - 156
1,2,3,4,6,7,8-HpCDD	100	108		pg/g		108	70 - 140
1,2,3,4,6,7,8-HpCDF	100	101		pg/g		101	82 - 122
1,2,3,4,7,8,9-HpCDF	100	90.6		pg/g		91	78 - 138
OCDD	200	205		pg/g		103	78 - 144
OCDF	200	220		pg/g		110	63 - 170

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C-2,3,7,8-TCDD	78		20 - 175
13C-2,3,7,8-TCDF	84		22 - 152
13C-1,2,3,7,8-PeCDD	79		21 - 227
13C-1,2,3,7,8-PeCDF	80		21 - 192
13C-2,3,4,7,8-PeCDF	87		13 - 328
13C-1,2,3,4,7,8-HxCDD	93		21 - 193
13C-1,2,3,6,7,8-HxCDD	81		25 - 163
13C-1,2,3,4,7,8-HxCDF	87		19 - 202
13C-1,2,3,6,7,8-HxCDF	79		21 - 159
13C-1,2,3,7,8,9-HxCDF	81		17 - 205
13C-2,3,4,6,7,8-HxCDF	82		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	69		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	75		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	82		20 - 186
13C-OCDD	76		13 - 199

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
37Cl4-2,3,7,8-TCDD	106		35 - 197

Lab Sample ID: LCSD 320-10098/3-A

Matrix: Solid

Analysis Batch: 10273

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 10098

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
								RPD	Limit
2,3,7,8-TCDD	20.0	22.9		pg/g		115	67 - 158	1	50
2,3,7,8-TCDF	20.0	21.8		pg/g		109	75 - 158	5	50
1,2,3,7,8-PeCDD	100	101		pg/g		101	70 - 142	2	50
1,2,3,7,8-PeCDF	100	111		pg/g		111	80 - 134	1	50
2,3,4,7,8-PeCDF	100	101		pg/g		101	68 - 160	0	50

TestAmerica Seattle

QC Sample Results

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-10098/3-A

Matrix: Solid

Analysis Batch: 10273

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 10098

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD	
							Limits	RPD	RPD	Limit
1,2,3,4,7,8-HxCDD	100	101		pg/g		101	70 - 164	4	50	
1,2,3,6,7,8-HxCDD	100	105		pg/g		105	76 - 134	2	50	
1,2,3,7,8,9-HxCDD	100	103		pg/g		103	64 - 162	3	50	
1,2,3,4,7,8-HxCDF	100	103		pg/g		103	72 - 134	2	50	
1,2,3,6,7,8-HxCDF	100	111		pg/g		111	84 - 130	0	50	
1,2,3,7,8,9-HxCDF	100	112		pg/g		112	78 - 130	2	50	
2,3,4,6,7,8-HxCDF	100	109		pg/g		109	70 - 156	1	50	
1,2,3,4,6,7,8-HpCDD	100	108		pg/g		108	70 - 140	0	50	
1,2,3,4,6,7,8-HpCDF	100	101		pg/g		101	82 - 122	0	50	
1,2,3,4,7,8,9-HpCDF	100	91.1		pg/g		91	78 - 138	1	50	
OCDD	200	205		pg/g		103	78 - 144	0	50	
OCDF	200	221		pg/g		110	63 - 170	0	50	

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C-2,3,7,8-TCDD	81		20 - 175
13C-2,3,7,8-TCDF	89		22 - 152
13C-1,2,3,7,8-PeCDD	83		21 - 227
13C-1,2,3,7,8-PeCDF	82		21 - 192
13C-2,3,4,7,8-PeCDF	88		13 - 328
13C-1,2,3,4,7,8-HxCDD	89		21 - 193
13C-1,2,3,6,7,8-HxCDD	87		25 - 163
13C-1,2,3,4,7,8-HxCDF	90		19 - 202
13C-1,2,3,6,7,8-HxCDF	86		21 - 159
13C-1,2,3,7,8,9-HxCDF	84		17 - 205
13C-2,3,4,6,7,8-HxCDF	87		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	73		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	81		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	88		20 - 186
13C-OCDD	81		13 - 199

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
37Cl4-2,3,7,8-TCDD	108		35 - 197

Method: 9060_PSEP - TOC (Puget Sound)

Lab Sample ID: MB 580-129662/3

Matrix: Solid

Analysis Batch: 129662

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Organic Carbon	ND		2000	610	mg/Kg			02/06/13 14:59	1

Lab Sample ID: LCS 580-129662/4

Matrix: Solid

Analysis Batch: 129662

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
							Limits	RPD
Total Organic Carbon	2850	2870		mg/Kg		101	27.8 - 170	

TestAmerica Seattle

QC Sample Results

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

Method: 9060_PSEP - TOC (Puget Sound) (Continued)

Lab Sample ID: LCSD 580-129662/5

Matrix: Solid

Analysis Batch: 129662

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	2850	2840		mg/Kg		100	27.8 - 170	1	35

Lab Sample ID: 580-36242-22 MS

Matrix: Solid

Analysis Batch: 129662

Client Sample ID: LRIS-LR-110-5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	13000		115000	122000		mg/Kg		94	50 - 140

Lab Sample ID: 580-36242-22 MSD

Matrix: Solid

Analysis Batch: 129662

Client Sample ID: LRIS-LR-110-5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	13000		116000	122000		mg/Kg		94	50 - 140	0	35

Lab Sample ID: 580-36242-22 DU

Matrix: Solid

Analysis Batch: 129662

Client Sample ID: LRIS-LR-110-5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	13000		13200		mg/Kg		3	50

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-36242-22 DU

Matrix: Solid

Analysis Batch: 130029

Client Sample ID: LRIS-LR-110-5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Solids	64		62		%		4	20
Percent Moisture	36		38		%		7	20

Lab Chronicle

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

Client Sample ID: LRIS-LR-110-5

Lab Sample ID: 580-36242-22

Date Collected: 12/03/12 10:45

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 64.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			10098	02/08/13 13:50	NM	TAL WSC
Total/NA	Analysis	1613B		1	10273	02/11/13 20:01	MG	TAL WSC
Total/NA	Analysis	1613B		1	10282	02/11/13 23:40	MG	TAL WSC
Total/NA	Analysis	1613B		10	10474	02/13/13 13:17	MG	TAL WSC
Total/NA	Analysis	9060_PSEP		1	129662	02/06/13 15:05	RB	TAL SEA
Total/NA	Analysis	D 2216		1	130029	02/12/13 12:22	RS	TAL SEA

Client Sample ID: LRIS-LR-124-4

Lab Sample ID: 580-36242-38

Date Collected: 12/03/12 10:05

Matrix: Solid

Date Received: 12/07/12 08:50

Percent Solids: 67.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			10098	02/08/13 13:50	NM	TAL WSC
Total/NA	Analysis	1613B		1	10273	02/11/13 20:45	MG	TAL WSC
Total/NA	Analysis	9060_PSEP		1	129662	02/06/13 15:20	RB	TAL SEA
Total/NA	Analysis	D 2216		1	130029	02/12/13 12:22	RS	TAL SEA

Client Sample ID: LRIS-LR-PS-SRM

Lab Sample ID: 580-36242-97

Date Collected: 11/26/12 10:00

Matrix: Solid

Date Received: 12/07/12 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	HRMS-Sox			10098	02/08/13 13:50	NM	TAL WSC
Total/NA	Analysis	1613B		1	10273	02/11/13 21:28	MG	TAL WSC
Total/NA	Analysis	1613B		1	10282	02/12/13 00:17	MG	TAL WSC

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

TAL WSC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Certification Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-04-13
California	NELAP	9	01115CA	01-31-14
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-13
USDA	Federal		P330-11-00222	05-20-14

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-14
Alaska (UST)	State Program	10	UST-055	12-18-13
Arizona	State Program	9	AZ0708	08-11-13
Arkansas DEQ	State Program	6	88-0691	06-17-13
California	NELAP	9	1119CA	01-31-14
Colorado	State Program	8	N/A	08-31-13
Connecticut	State Program	1	PH-0691	06-30-13
Florida	NELAP	4	E87570	06-30-13
Guam	State Program	9	N/A	08-31-13
Hawaii	State Program	9	N/A	01-31-14
Illinois	NELAP	5	200060	03-17-14
Kansas	NELAP	7	E-10375	10-31-13
Louisiana	NELAP	6	30612	06-30-13
Michigan	State Program	5	9947	01-31-14
Nevada	State Program	9	CA44	07-31-13
New Jersey	NELAP	2	CA005	06-30-13
New York	NELAP	2	11666	04-01-13
Northern Mariana Islands	State Program	9	MP0007	02-01-14
Oregon	NELAP	10	CA200005	03-28-14
Pennsylvania	NELAP	3	68-01272	03-31-13
South Carolina	State Program	4	87014	06-30-13
Texas	NELAP	6	T104704399-08-TX	05-31-13
US Fish & Wildlife	Federal		LE148388-0	12-31-13
USDA	Federal		P330-11-00436	12-30-14
USEPA UCMR	Federal	1	CA00044	11-06-14
Utah	NELAP	8	QUAN1	01-31-14
Washington	State Program	10	C581	05-05-13
West Virginia	State Program	3	9930C	12-31-13
West Virginia DEP	State Program	3	334	07-31-13
Wyoming	State Program	8	8TMS-Q	01-31-14

Sample Summary

Client: Maul Foster & Alongi Inc
Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-36242-22	LRIS-LR-110-5	Solid	12/03/12 10:45	12/07/12 08:50
580-36242-38	LRIS-LR-124-4	Solid	12/03/12 10:05	12/07/12 08:50
580-36242-97	LRIS-LR-PS-SRM	Solid	11/26/12 10:00	12/07/12 08:50

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Lab Information: Lab: Test America
Address: 5735 8th Street E, Tacoma, WA 98424
City: Tacoma
State: WA
Zip: 98424

Project Information: Site Code: Lake River Industrial Site
Project # 9003.01.40
Site Address: 111 W. Division St
City/State: Tukwila, WA
PO #
Send EDD to: Eric Navajo
CC Hardcopy to: Erik Navajo, Madi Novak
Lab Notes: TAT Regular Rush

Other Information: Send Invoice to: Laurie Olin, Madi Novak
Address: 911 1st St
City/State: Tukwila, WA
Phone #
Send EDD to: Eric Navajo
CC Hardcopy to: Erik Navajo, Madi Novak

Lab P.M.: Pam Johnson
Phone/Fax: /
PM email: /
Lab Quote #:

ITEM #	Field Sample No. / Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	Task:	Total # of Samples: 97	Notes: F= Field Filtered, H= Hold	Event Complete?
1	LRS-LR-103-2	SUB_S O-SED	C	12/03/2012 13:30	3		ARCHIVE			X			
2	LRS-LR-103-3	SUB_S O-SED	C	12/03/2012 13:35	3					X			
3	LRS-LR-103-4	SUB_S O-SED	C	12/03/2012 13:40	3					X			
4	LRS-LR-103-5	SUB_S O-SED	C	12/03/2012 13:45	3					X			
5	LRS-LR-103	SOIL-SED	G	12/04/2012 11:55	3					X	X	X	
6	LRS-LR-106-2	SUB_S O-SED	G	12/02/2012 17:25	3					X			
7	LRS-LR-106-3	SUB_S O-SED	C	12/02/2012 17:30	3					X			
8	LRS-LR-106-4	SUB_S O-SED	C	12/02/2012 17:35	3					X			
9	LRS-LR-106-5	SUB_S O-SED	C	12/02/2012 17:40	3					X			
10	LRS-LR-106	SOIL-SED	C	12/04/2012 11:42	3					X	X	X	
11	LRS-LR-108-2	SUB_S O-SED	C	12/03/2012 11:20	3					X			

Additional Comments/Special Instructions:

REINQUISHED BY / AFFILIATION: ERIC NAVAJO / MFA
DATE: 12/12/12
TIME: 08:50
ACCEPTED BY / AFFILIATION: Erik Navajo / MFA
DATE: 12/12/12
TIME: 08:50

Company:	Tracking #:	DATE/TIME:	Temp in OC	Samples on Ice?	Sample intact?	Trip Blank?

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Lab Information:			Project Information:			Other Information:		
Lab:	Unknown Laboratory	Site Code:	Lake River Industrial Site	Address:		Send Invoice to:		
Address:		Project #:		City/State:		City/State:		Phone #:
Lab P.M.:		City:	State, Zip:	PO #:		Send EDD to:		
Phone/Fax:	/	P.M. Name:		CC Hardcopy to:		CC Hardcopy to:		
P.M. email:		Phone/Fax:		CC Hardcopy to:				
Lab Quote #:		P.M. Email:						

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush	Event Complete?
12	LRS-LR-108-3	SUB_S O-SED	C	12/03/2012 11:25	3		X		Notes: F= Field Filtered , H= Hold			
13	LRS-LR-108-4	SUB_S O-SED	C	12/03/2012 11:30	3		X					
14	LRS-LR-108-5	SUB_S O-SED	C	12/03/2012 11:35	3		X					
15	LRS-LR-109-2	SUB_S O-SED	C	12/02/2012 15:10	3		X					
16	LRS-LR-109-3	SUB_S O-SED	G	12/02/2012 15:15	3		X	X				
17	LRS-LR-109-4	SUB_S O-SED	G	12/02/2012 15:20	3		X					
18	LRS-LR-109-5	SUB_S O-SED	C	12/02/2012 15:25	3		X					
19	LRS-LR-110-2	SUB_S O-SED	C	12/03/2012 10:30	3		X					
20	LRS-LR-110-3	SUB_S O-SED	C	12/03/2012 10:35	3		X	X				
21	LRS-LR-110-4	SUB_S O-SED	C	12/03/2012 10:40	3		X					
22	LRS-LR-110-5	SUB_S O-SED	C	12/03/2012 10:45	3		X					

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Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: Task: Total # of Samples: 97 2012_LR_SED Event Complete?

Address:	Site Code:	Lake River Industrial Site	Send Invoice to:	
Project #	Site Address	City/State:	City/State:	Phone #:
Lab PIV:	City:	State, Zip	PO #	
Phone/Fax: /	PIV Name	Send EDD to	CC Hardcopy to	
PIV email	Phone/Fax:	CC Hardcopy to	CC Hardcopy to	
Lab Quote #:	PIV Email:			

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush
23	LRS-LR-119-2	SUB_S O-SED	C	12/03/2012 14:30	3		Archive				
24	LRS-LR-119-3	SUB_S O-SED	C	12/03/2012 14:35	3		1613B - Dioxin/Furan				
25	LRS-LR-119-4	SUB_S O-SED	C	12/03/2012 14:40	3		Total Organic Carbon - COE 9060				
26	LRS-LR-119-5	SUB_S O-SED	C	12/03/2012 14:45	3						
27	LRS-LR-120-2	SUB_S O-SED	G	12/03/2012 12:20	3						
28	LRS-LR-120-3	SUB_S O-SED	G	12/03/2012 12:25	3						
29	LRS-LR-120-4	SUB_S O-SED	C	12/03/2012 12:30	3						
30	LRS-LR-120-5	SUB_S O-SED	C	12/03/2012 12:35	3						
31	LRS-LR-122-2	SUB_S O-SED	C	12/03/2012 15:22	3						
32	LRS-LR-122-3	SUB_S O-SED	C	12/03/2012 15:22	3						
33	LRS-LR-122-4	SUB_S O-SED	C	12/03/2012 15:22	3						

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Lab Information: Project Information: Other Information:

Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Address:	City/State:	Phone #:
Address:	Project #	Site Address	City/State:	Phone #:
Lab PIV:	City:	State, Zip	PO #	
Phone/Fax:	PIV Name	Send EDD to	CC Hardcopy to	
PIV email	Phone/Fax:	CC Hardcopy to	CC Hardcopy to	
Lab Quote #:	PIV Email:			

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Notes: F= Field Filtered , H= Hold	Rush	Event Complete?
34	LRS-LR-122-5	SUB_S O-SED	C	12/03/2012 15:22	3		X	Archive					
35	LRS-LR-122	SUB_S O-SED	C	12/04/2012 11:27	3		X	1613B - Dioxin/Furan					
36	LRS-LR-124-2	SUB_S O-SED	C	12/03/2012 09:50	3		X	Total Organic Carbon - COE 9060					
37	LRS-LR-124-3	SUB_S O-SED	C	12/03/2012 10:00	3		X						
38	LRS-LR-124-4	SUB_S O-SED	G	12/03/2012 10:05	3		X						
39	LRS-LR-124-5	SUB_S O-SED	G	12/03/2012 10:10	3		X						
40	LRS-LR-125-2	SUB_S O-SED	C	12/02/2012 13:10	3		X						
41	LRS-LR-125-3	SUB_S O-SED	C	12/02/2012 13:15	3		X						
42	LRS-LR-125-4	SUB_S O-SED	C	12/02/2012 13:20	3		X						
43	LRS-LR-126-2	SUB_S O-SED	C	12/02/2012 12:40	3		X						
44	LRS-LR-126-3	SUB_S O-SED	C	12/02/2012 12:45	3		X						

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36242

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to:

Lab:	Unknown Laboratory	Site Code:	Lake River Industrial Site	Send Invoice to:	
Address:		Project #:		City/State:	
		Site Address:		PO #:	
Lab PM:		City:		State, Zip:	
Phone/Fax: /		PM Name:		Send EDD to:	
PM email:		Phone/Fax:		CC Hardcopy to:	
Lab Quote #:		PM Email:		CC Hardcopy to:	

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Notes: F= Field Filtered, H= Hold	Rush
46	LRS-LR-126-4	SUB_S O-SED	C	12/02/2012 12:47	3		Archive			X		
46	LRS-LR-126-5	SUB_S O-SED	C	12/02/2012 12:50	3		1613B - Dioxin/Furan			X		
47	LRS-LR-126	SOIL- SED	C	12/04/2012 08:56	3		Total Organic Carbon - COE 9060			X		
48	LRS-LR-129-2	SUB_S O-SED	C	12/02/2012 13:50	3					X		
49	LRS-LR-129-3	SUB_S O-SED	G	12/02/2012 13:55	3					X		
49	LRS-LR-129-4	SUB_S O-SED	G	12/02/2012 14:00	3					X		
50	LRS-LR-129-5	SUB_S O-SED	C	12/02/2012 14:05	3					X		
51	LRS-LR-129	SOIL- SED	C	12/04/2012 10:10	3					X		
52	LRS-LR-130-2	SUB_S O-SED	C	12/02/2012 14:40	3					X		
53	LRS-LR-130-FD	QAQC		12/02/2012 14:40	3					X		
54	LRS-LR-130-3	SUB_S O-SED		12/02/2012 14:45	3					X		

Task:	2012_LR_SED
Total # of Samples:	97
Event Complete?	

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Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: **Task:** TAT Total # of Samples: 97 2012_LR_SED Event Complete?

Address: Site Code: Lake River Industrial Site Address: Send Invoice to: Notes: F=Field Filtered, H=Hold Rush TAT

Site Address City/State Phone #:

City State Zip PO # Send EDD to Preservative

Phone/Fax: / PM Name Phone/Fax: CC Hardcopy to CC Hardcopy to Lab Notes

Lab PM: PM email Lab Quote #:

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Archive	1613B - Dioxin/Furan	Total Organic Carbon - COE 9060						
56	LRS-LR-130-4	SUB_S O-SED	C	12/02/2012 14:50	3		X	X	X							
57	LRS-LR-130-5	SUB_S O-SED	C	12/02/2012 14:55	3		X	X	X							
58	LRS-LR-130	SOIL-SED	C	12/04/2012 10:24	3		X	X	X							
59	LRS-LR-130-FD-1	QAQC	C	12/04/2012 10:24	3		X	X	X							
60	LRS-LR-131-2	SUB_S O-SED	G	12/02/2012 16:30	3		X	X	X							
61	LRS-LR-131-3	SUB_S O-SED	G	12/02/2012 16:35	3		X	X	X							
62	LRS-LR-131-4	SUB_S O-SED	C	12/02/2012 16:40	3		X	X	X							
63	LRS-LR-131	SOIL-SED	C	12/04/2012 11:15	3		X	X	X							
64	LRS-LR-132-2	SUB_S O-SED	C	12/03/2012 14:00	3		X	X	X							
65	LRS-LR-132-3	SUB_S O-SED	C	12/03/2012 14:05	3		X	X	X							
66	LRS-LR-132-4	SUB_S O-SED	C	12/03/2012 14:10	3		X	X	X							

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information:		Project Information:			Other Information:		
Lab:	Unknown Laboratory	Site Code:	Lake River Industrial Site	Send Invoice to:			
Address:		Project #:		Address:		Phone #:	
		Site Address:		City/State:			
Lab PVI:		City:	State, Zip	PO #:			
Phone/Fax:		PVI Name:		Send EDD to:			
PVI email:		Phone/Fax:		CC Hardcopy to:			
Lab Quote #:		PVI Email:		CC Hardcopy to:			

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush
67	LRS-LR-132-5	SUB_S O-SED	C	12/03/2012 14:15	3		X				
68	LRS-LR-132	SOL- SED	C	12/04/2012 12:06	3		X				
69	LRS-LR-133-2	SUB_S O-SED	C	12/03/2012 15:15	3		X	X			
70	LRS-LR-133-3	SUB_S O-SED	C	12/03/2012 15:20	3		X				
71	LRS-LR-133-4	SUB_S O-SED	G	12/03/2012 15:25	3		X				
72	LRS-LR-133-5	SUB_S O-SED	G	12/03/2012 15:30	3		X				
73	LRS-LR-133	SOL- SED	C	12/04/2012 12:49	3		X				
74	LRS-LR-134-2	SUB_S O-SED	C	12/02/2012 10:20	3		X	X			
75	LRS-LR-134-3	SUB_S O-SED	C	12/02/2012 10:28	3		X				
76	LRS-LR-134-4	SUB_S O-SED	C	12/02/2012 10:30	3		X				
77	LRS-LR-134-5	SUB_S O-SED	C	12/02/2012 10:35	3		X				

Task:	2012_LR_SED
Total # of Samples:	97
Event Complete?	

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Lab Information:			Project Information:			Other Information:			
Lab: Unknown Laboratory	Site Code: Lake River Industrial Site	Send Invoice to:	Address:	City/State:	Phone #:	Lab Notes:	Task: Total # of Samples: 97		
Address:	Project #	Site Address	City/State:	City/State:	PO #:	Notes: F= Field Filtered, H= Hold	2012_LR_SED Event Complete?		
Lab PIV:	City:	State, Zip	City/State:	City/State:	Send EDD to		TAT Rush		
Phone/Fax: /	PIV Name		City/State:	City/State:	CC Hardcopy to				
PIV Email:	Phone/Fax:		City/State:	City/State:	CC Hardcopy to				
Lab Quote #:	PIV Email:		City/State:	City/State:					
ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes
78	LRS-LR-134	SOIL-SED	C	12/04/2012 13:10	3		Archive		
79	LRS-LR-135-2	SUB_S O-SED	C	12/03/2012 15:45	3		1613B - Dioxin/Furan		
80	LRS-LR-135-3	SUB_S O-SED	C	12/03/2012 15:50	3		Total Organic Carbon - COE 9060		
81	LRS-LR-135-4	SUB_S O-SED	C	12/03/2012 15:55	3				
82	LRS-LR-135-5	SUB_S O-SED	G	12/03/2012 16:00	3				
83	LRS-LR-135	SOIL-SED	G	12/04/2012 13:01	3				
84	LRS-LR-136-2	SUB_S O-SED	C	12/02/2012 16:50	3				
85	LRS-LR-136-3	SUB_S O-SED	C	12/02/2012 16:55	3				
86	LRS-LR-136-4	SUB_S O-SED	C	12/02/2012 17:00	3				
87	LRS-LR-136-5	SUB_S O-SED	C	12/02/2012 17:05	3				
88	LRS-LR-136	SOIL-SED	C	12/04/2012 10:39	3				

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

362242

Lab Information: Unknown Laboratory **Project Information:** Lake River Industrial Site **Other Information:** Send Invoice to: _____

Lab P/M:	City:	State:	Zip:	PO #:	Send EDD to:	Address:	City/State:	Phone #:
Phone/Fax:	PM Name:	State:	Zip:	Send EDD to:	CC Hardcopy to:	Address:	City/State:	Phone #:
PM Email:	Phone/Fax:	State:	Zip:	CC Hardcopy to:	CC Hardcopy to:	Address:	City/State:	Phone #:
Lab Quote #:	PM Email:	State:	Zip:	CC Hardcopy to:	CC Hardcopy to:	Address:	City/State:	Phone #:

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Preservative	Lab Notes	TAT	Rush	Event Complete?
88	LRS-LR-137-2	SUB_S O-SED	C	12/02/2012 12:10	3		Archive					
89	LRS-LR-137-3	SUB_S O-SED	C	12/02/2012 12:15	3		1613B - Dioxin/Furan					
90	LRS-LR-137-4	SUB_S O-SED	C	12/02/2012 12:17	3		Total Organic Carbon - COE 9060					
91	LRS-LR-137-5	SUB_S O-SED	C	12/02/2012 12:20	3							
92	LRS-LR-137	SOIL-SED	G	12/04/2012 09:14	3							
93	LRS-LR-RB-20121202	QAQC	G	12/02/2012 17:00	2							
94	LRS-LR-RB-20121203	QAQC	C	12/03/2012 17:30	2							
95	LRS-LR-RB-20121204	QAQC	C	12/04/2012 17:35	1							
96	LRS-LR-PS-SRM	SOIL-SED	C	11/26/2012 10:00	2							
97												

Task: Total # of Samples: 97 2012_LR_SED Event Complete?

Notes: F= Field Filtered , H= Hold

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-7

Login Number: 36242

List Number: 1

Creator: Riley, Nicole

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Not requested on COC.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-7

Login Number: 36242

List Number: 1

Creator: Mantri, Anil

List Source: TestAmerica Sacramento

List Creation: 12/11/12 01:42 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	-0.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	False	Received extra samples not listed on COC.# 94 & 95
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-7

Login Number: 36242

List Number: 2

Creator: Cortes, Cesar C

List Source: TestAmerica Sacramento

List Creation: 01/10/13 02:54 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-7

Login Number: 36242

List Number: 3

Creator: Tecson, Jeffrey

List Source: TestAmerica Sacramento

List Creation: 01/16/13 11:09 AM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	622805, 622806
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	545176167352
Cooler Temperature is acceptable.	True	0.8
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-7

Login Number: 36242

List Number: 4

Creator: Tecson, Jeffrey

List Source: TestAmerica Sacramento

List Creation: 01/17/13 01:52 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	622807
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	0.4
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Maul Foster & Alongi Inc

Job Number: 580-36242-7

Login Number: 36242

List Number: 5

Creator: Cortes, Cesar C

List Source: TestAmerica Sacramento

List Creation: 02/07/13 07:27 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Isotope Dilution Summary

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF1 (24-185)	PeCDF2 (21-178)	HxCDD1 (32-141)	HxCDD2 (28-130)	HxCDF1 (26-152)
580-36242-22	LRIS-LR-110-5	78	84	79	80	87	98	77	88
580-36242-22	LRIS-LR-110-5	73	70						
580-36242-22	LRIS-LR-110-5								
580-36242-38	LRIS-LR-124-4	93	100	93	94	102	111	93	99
580-36242-97	LRIS-LR-PS-SRM	91	99	95	94	104	101	96	99
580-36242-97	LRIS-LR-PS-SRM		81						
MB 320-10098/1-A	Method Blank	74	79	72	75	80	85	76	81

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HxCDF2 (26-123)	HxCDF4 (29-147)	HxCDF3 (28-136)	HpCDD (23-140)	HpCDF1 (28-143)	HpCDF2 (26-138)	OCDD (17-157)	HxCDF1 (26-152)
580-36242-22	LRIS-LR-110-5	83	80	83	69	75	81	79	88
580-36242-22	LRIS-LR-110-5								
580-36242-22	LRIS-LR-110-5				44			52	
580-36242-38	LRIS-LR-124-4	97	96	97	82	85	98	86	99
580-36242-97	LRIS-LR-PS-SRM	94	91	94	80	83	94	89	99
580-36242-97	LRIS-LR-PS-SRM								
MB 320-10098/1-A	Method Blank	78	77	78	67	74	80	73	81

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HxCDF2 (21-159)	HxCDF2 (26-123)	HxCDF4 (17-205)	HxCDF4 (29-147)	HxCDF3 (22-176)	HxCDF3 (28-136)	HpCDD (23-140)	HpCDD (26-166)
580-36242-22	LRIS-LR-110-5		83		80		83	69	
580-36242-22	LRIS-LR-110-5								
580-36242-22	LRIS-LR-110-5							44	
580-36242-38	LRIS-LR-124-4		97		96		97	82	
580-36242-97	LRIS-LR-PS-SRM		94		91		94	80	
580-36242-97	LRIS-LR-PS-SRM								
MB 320-10098/1-A	Method Blank		78		77		78	67	

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	HpCDF1 (21-158)	HpCDF1 (28-143)	HpCDF2 (20-186)	HpCDF2 (26-138)	OCDD (13-199)	OCDD (17-157)
580-36242-22	LRIS-LR-110-5		75		81		79
580-36242-22	LRIS-LR-110-5						
580-36242-22	LRIS-LR-110-5						52
580-36242-38	LRIS-LR-124-4		85		98		86
580-36242-97	LRIS-LR-PS-SRM		83		94		89
580-36242-97	LRIS-LR-PS-SRM						
MB 320-10098/1-A	Method Blank		74		80		73

Surrogate Legend

- TCDD = 13C-2,3,7,8-TCDD
- TCDF = 13C-2,3,7,8-TCDF
- PeCDD = 13C-1,2,3,7,8-PeCDD
- PeCDF1 = 13C-1,2,3,7,8-PeCDF
- PeCDF2 = 13C-2,3,4,7,8-PeCDF
- HxCDD1 = 13C-1,2,3,4,7,8-HxCDD
- HxCDD2 = 13C-1,2,3,6,7,8-HxCDD
- HxCDF1 = 13C-1,2,3,4,7,8-HxCDF
- HxCDF2 = 13C-1,2,3,6,7,8-HxCDF
- HxCDF4 = 13C-1,2,3,7,8,9-HxCDF

Isotope Dilution Summary

Client: Maul Foster & Alongi Inc
 Project/Site: Port of Ridgefield

TestAmerica Job ID: 580-36242-7

HxCDF3 = 13C-2,3,4,6,7,8-HxCDF
 HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
 HpCDF1 = 13C-1,2,3,4,6,7,8-HpCDF
 HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
 OCDD = 13C-OCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Solid

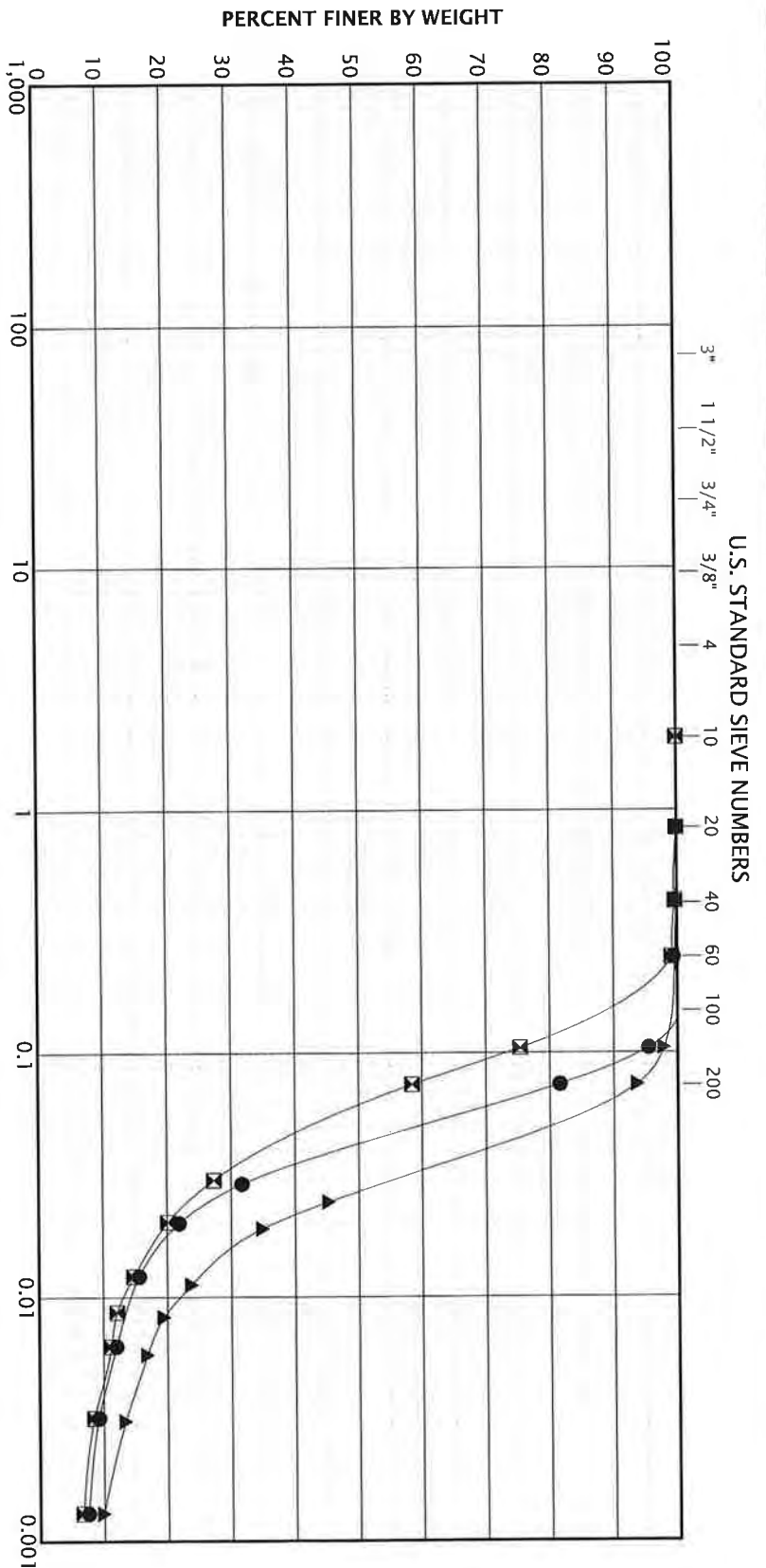
Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF1 (21-192)	PeCDF2 (13-328)	HxCDD1 (21-193)	HxCDD2 (25-163)	HxCDF1 (19-202)
LCS 320-10098/2-A	Lab Control Sample	78	84	79	80	87	93	81	87
LCSD 320-10098/3-A	Lab Control Sample Dup	81	89	83	82	88	89	87	90

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)						
		HxCDF2 (21-159)	HxCDF4 (17-205)	HxCDF3 (22-176)	HpCDD (26-166)	HpCDF1 (21-158)	HpCDF2 (20-186)	OCDD (13-199)
LCS 320-10098/2-A	Lab Control Sample	79	81	82	69	75	82	76
LCSD 320-10098/3-A	Lab Control Sample Dup	86	84	87	73	81	88	81

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
 TCDF = 13C-2,3,7,8-TCDF
 PeCDD = 13C-1,2,3,7,8-PeCDD
 PeCDF1 = 13C-1,2,3,7,8-PeCDF
 PeCDF2 = 13C-2,3,4,7,8-PeCDF
 HxCDD1 = 13C-1,2,3,4,7,8-HxCDD
 HxCDD2 = 13C-1,2,3,6,7,8-HxCDD
 HxCDF1 = 13C-1,2,3,4,7,8-HxCDF
 HxCDF2 = 13C-1,2,3,6,7,8-HxCDF
 HxCDF4 = 13C-1,2,3,7,8,9-HxCDF
 HxCDF3 = 13C-2,3,4,6,7,8-HxCDF
 HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
 HpCDF1 = 13C-1,2,3,4,6,7,8-HpCDF
 HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
 OCDD = 13C-OCDD



SAMPLE INFORMATION			MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SIEVE			ATTERBERG LIMITS		
EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	ELEVATION (FEET)			GRAVEL (PERCENT)	SAND (PERCENT)	P200 (PERCENT)	LIQUID LIMIT (PERCENT)	PLASTIC LIMIT (PERCENT)	PLASTICITY INDEX (PERCENT)
LRIS-LR-103	1.0				0	18	82	NP	NP	NP
LRIS-LR-103	1.5		54	65						
LRIS-LR-105	1.0				0	41	58	NP	NP	NP
LRIS-LR-105	1.5		64	61						
LRIS-LR-109	0.5				0	6	94	NP	NP	NP
LRIS-LR-109	1.0		53	65						
LRIS-LR-119	0.5				0	36	64	NP	NP	NP
LRIS-LR-119	1.0		84	49						
LRIS-LR-120	0.5				0	15	85	NP	NP	NP
LRIS-LR-120	1.0		62	60						
LRIS-LR-126	1.5				1	27	72	NP	NP	NP
LRIS-LR-126	2.0		61	69						

LAB SUMMARY MFAINC-11-01-LRIS_LR103,105,109,119,120,126.GPJ GEODESIGN.GDT PRINT DATE: 1/3/13-KDY



MFAINC-11-01

SUMMARY OF LABORATORY DATA

DECEMBER 2012

LAKE RIVER LABORATORY TESTING
RIDGEFIELD, WA

FIGURE 3

TOTAL SOLIDS

TOTAL SOLIDS - EPA - Puget Sound

WORK ORDER NO. **6048**

PROJECT NO:	MFAInc-11-01	TESTED BY:	mab	DATE:	12.20.12
PROJECT NAME:	Lake River Industrial Site	CHECKED BY:	kdy	DATE:	1.2.13
SOURCE:	Ridgefield, WA				

THERMOMETER ID **10** SCALE ID **243** OVEN ID **185** FURNACE ID **1**

SAMPLE LOCATION AND DESCRIPTION

SAMPLE NO	EXPLORATION	DEPTH (FT)	SOIL DESCRIPTION
119	LRIS-LR-119	0.5	Dark gray sandy SILT
120	LRIS-LR-120	0.5	Dark gray SILT with sand
126	LRIS-LR-126	1.5	Dark gray/black SILT with organics and sand

TOTAL SOLIDS

SAMPLE NUMBER	119	120	126	
DRYING CONTAINER ID	C3	C2	C6	
DRYING CONTAINER + LID TARE (B)	111.07	114.77	132.83	
WEIGHT OF WET SOIL + TARE + LID (C)	151.78	160	190.69	
WEIGHT OF DRY SOIL + TARE + LID (A)	135.63	142.94	159.46	
WEIGHT OF MOISTURE	16.15	17.06	31.23	
MOISTURE CONTENT, (%)	65.8	60.6	117.3	
PERCENT SOLIDS, (%)	60.3	62.3	46.0	

DEVIATIONS/REMARKS:

[Redacted area]

TOTAL SOLIDS

TOTAL SOLIDS - EPA - Puget Sound

WORK ORDER NO. **6048**

PROJECT NO:	MFAInc-11-01	TESTED BY:	mab	DATE:	12.20.12
PROJECT NAME:	Lake River Industrial Site	CHECKED BY:	kdy	DATE:	1.2.13
SOURCE:	Ridgefield, WA				

THERMOMETER ID **10** SCALE ID **243** OVEN ID **185** FURNACE ID **1**

SAMPLE LOCATION AND DESCRIPTION

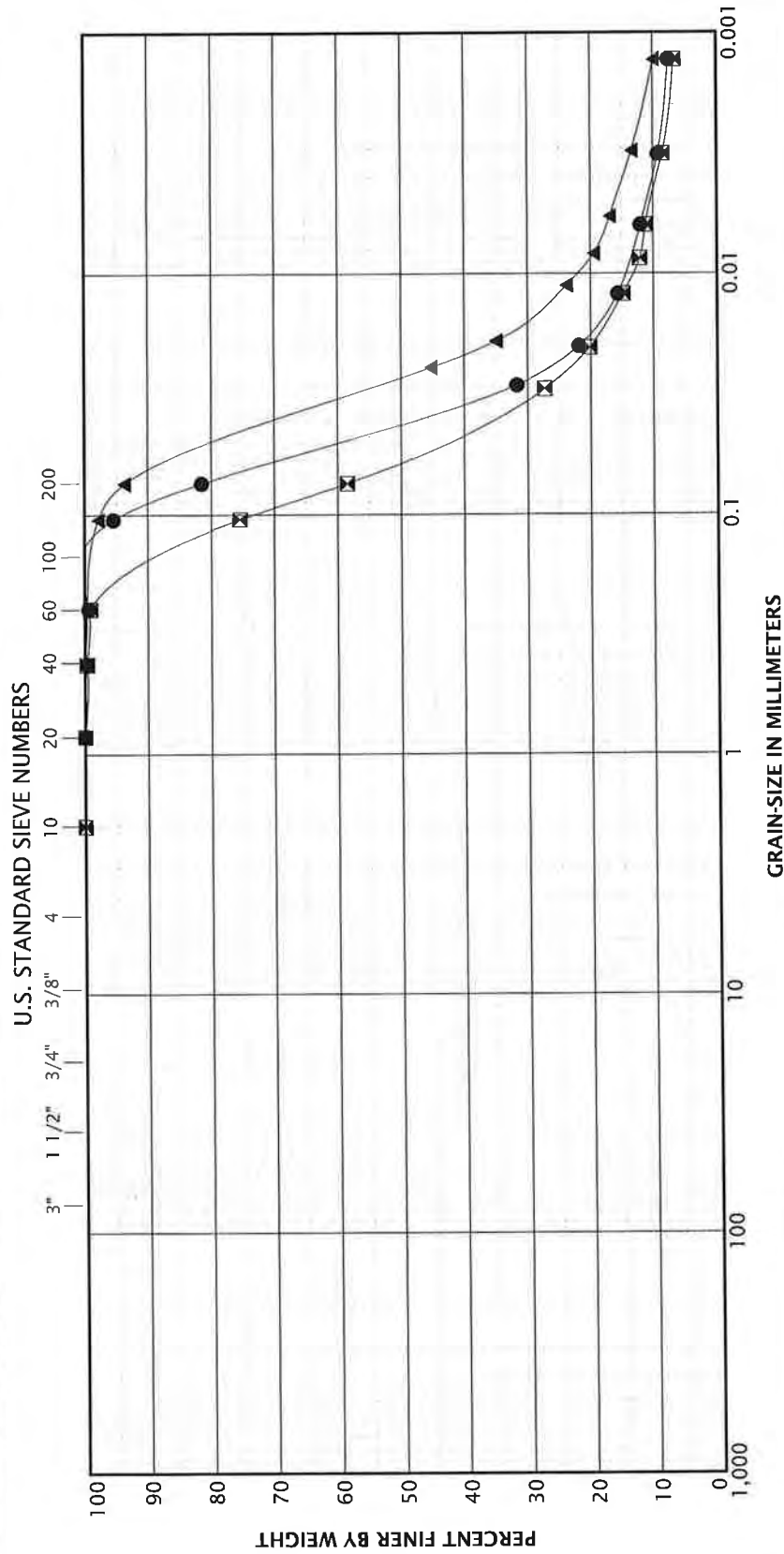
SAMPLE NO	EXPLORATION	DEPTH (FT)	SOIL DESCRIPTION
103	LRIS-LR-103	1.0	Dark gray SILT with sand
105	LRIS-LR-105	1.0	Dark gray sandy SILT
109	LRIS-LR-109	1.0	Dark gray SILT

TOTAL SOLIDS

SAMPLE NUMBER	103	105	109	
DRYING CONTAINER ID	C5	C4	C1	
DRYING CONTAINER + LID TARE (B)	135.60	129.03	138.72	
WEIGHT OF WET SOIL + TARE + LID (C)	191.90	182.84	207.05	
WEIGHT OF DRY SOIL + TARE + LID (A)	172.05	165.18	179.97	
WEIGHT OF MOISTURE	19.85	17.66	27.08	
MOISTURE CONTENT, (%)	54.5	48.9	65.6	
PERCENT SOLIDS, (%)	64.7	67.2	60.4	

DEVIATIONS/REMARKS:

[Redacted area]



BOULDERS	COBBLES	GRAVEL		SAND			FINES		CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	SILT	

KEY	EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	MOISTURE CONTENT (PERCENT)	D60	D50	D30	D10	D5	GRAVEL (PERCENT)	SAND (PERCENT)	SILT (PERCENT)	CLAY (PERCENT)
●	LRIS-LR-103	0.0	2	0.05	0.04	0.03	0.00			18	70	11
◻	LRIS-LR-105	0.0	2	0.08	0.06	0.03	0.00			41	48	10
▲	LRIS-LR-109	0.0	3	0.03	0.03	0.02	0.00			6	78	16

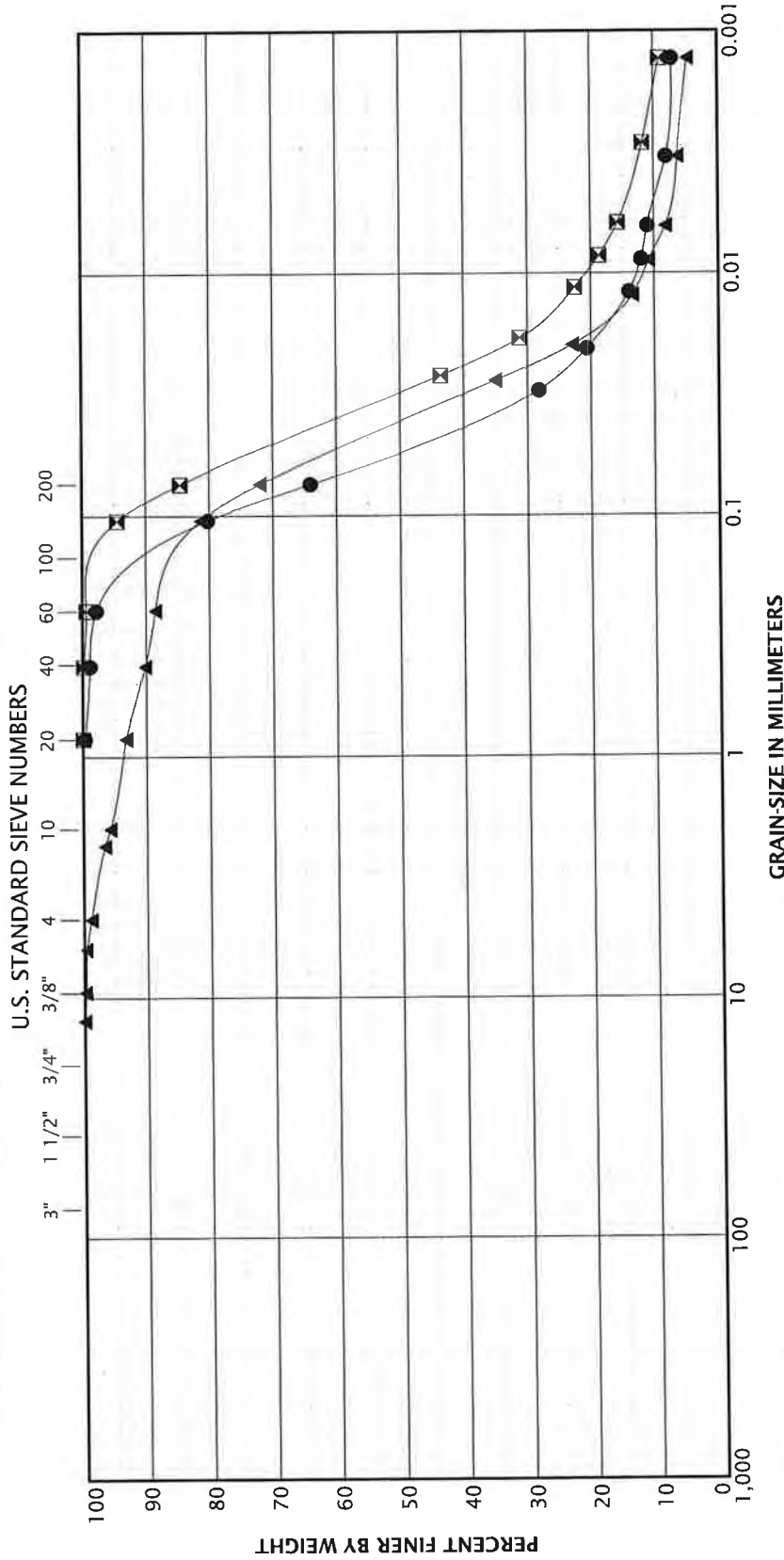
GRAIN-SIZE TEST RESULTS

MFAINC-11-01

LAKE RIVER LABORATORY TESTING
RIDGEFIELD, WA

DECEMBER 2012

FIGURE 1



BOULDERS	COBBLES	GRAVEL		SAND			FINES					
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY				

KEY	EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	MOISTURE CONTENT (PERCENT)	D60	D50	D30	D10	D5	GRAVEL (PERCENT)	SAND (PERCENT)	SILT (PERCENT)	CLAY (PERCENT)
●	LRIS-LR-119	0.0	2	0.07	0.05	0.03	0.01			36	54	10
⊠	LRIS-LR-120	0.0	2	0.04	0.03	0.02	0.00			15	70	15
▲	LRIS-LR-126	0.0	5	0.05	0.04	0.02	0.01	0.00	1	27	64	8

GRAIN-SIZE TEST RESULTS

MFAINC-11-01

DECEMBER 2012

LAKE RIVER LABORATORY TESTING
RIDGEFIELD, WA




15575 SW Sequoia Parkway, Suite 100
Portland OR 97224
Off: 503 968 8787 Fax: 503 968 3068

FIGURE 2

SAMPLE INFORMATION			MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SIEVE			ATTERBERG LIMITS		
EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	ELEVATION (FEET)			GRAVEL (PERCENT)	SAND (PERCENT)	P200 (PERCENT)	LIQUID LIMIT (PERCENT)	PLASTIC LIMIT (PERCENT)	PLASTICITY INDEX (PERCENT)
LRIS-LR-103	0.0		54	65	0	18	82	NP	NP	NP
LRIS-LR-105	0.0		64	61	0	41	58	NP	NP	NP
LRIS-LR-109	0.0		53	65	0	6	94	NP	NP	NP
LRIS-LR-119	0.0		84	49	0	36	64	NP	NP	NP
LRIS-LR-120	0.0		62	60	0	15	85	NP	NP	NP
LRIS-LR-126	0.0		61	69	1	27	72	NP	NP	NP

LAB SUMMARY MFAINC-11-01-LRIS-LR103,105,109,119,120,126.GPJ GEODESIGN.GDT PRINT DATE: 1/2/13:KDY

 15575 SW Sequoia Parkway - Suite 100 Portland OR 97224 Off 503.968.8787 Fax 503.968.3068	MFAINC-11-01	SUMMARY OF LABORATORY DATA	
	DECEMBER 2012	LAKE RIVER LABORATORY TESTING RIDGEFIELD, WA	FIGURE 3

COEFFICIENT OF PERMEABILITY

Constant Head Method Falling Head Method

Work order number: **6048.2**

PROJECT NO: **MFAInc-11-01** TESTED BY: **mab** DATE: **1/8/2013**
 PROJECT NAME: **Lake River Industrial Site** CHECKED BY: **smd** DATE: **1/17/2013**
 EXPLORATION: **LRIS-LR-103** DEPTH: **2.0 ft** SAMPLE NO: **103**
 DESCRIPTION: **Dark gray sandy Silt (ML)**

SCALE ID: **243** THERMOMETER ID: **10** OVEN ID: **185**
 RAMMER ID: **N/A** PERMEAMETER ID: **321.1** SIEVE ID: **N/A**

SAMPLE MEASUREMENTS	Diameter, cm	6.35
	Height (L), cm	14.07
	Area (A), cm ²	31.65
	Volume, cm ³	445.36
	Mass, g	638.40
	Wet Density, lb/ft ³	89.5
	Dry Density, lb/ft ³	58.9

MOISTURE CONTENT	Tare ID	J12
	Tare mass, g	248.86
	Wet Soil and tare mass, g	853.53
	Dry Soil and tare mass, g	646.66
	Water mass, g	206.87
	Dry Soil mass, g	397.8
	Water Content, %	52.0

CONSTANT HEAD TEST

$h = 62.3$ cm $h/L = 4.4$

	1	2	3	4	5	6
t, s	6960	8280	7020	58980		
Q, cm^3	3.23	2.51	1.68	11.03		
$T, °C$	22.3	22.4	22.0	21.9		
$k_T, cm/s$	3.3E-06	2.2E-06	1.7E-06	1.3E-06		

$Avg. k_T = \frac{1.6E-06}{Where, k_T = QL/Aht}$ cm/s $Avg. \alpha = 0.9525$ (See Table-Reverse) $Avg. k_{20} = \frac{1.5E-06}{Where, k_{20} = \alpha k_T}$ cm/s

DEVIATIONS

COEFFICIENT OF PERMEABILITY

Constant Head Method Falling Head Method

Work order number: **6048.2**

PROJECT NO: **MFAInc-11-01** TESTED BY: **mab** DATE: **1/14/2013**
 PROJECT NAME: **Lake River Industrial Site** CHECKED BY: **smd** DATE: **1/18/2013**
 EXPLORATION: **LRIS-LR-105** DEPTH: **2.0 ft** SAMPLE NO: **105**
 DESCRIPTION: **Dark gray sandy Silt (ML)**

SCALE ID: **243** THERMOMETER ID: **10** OVEN ID: **185**
 RAMMER ID: **N/A** PERMEAMETER ID: **321.1** SIEVE ID: **N/A**

SAMPLE MEASUREMENTS	Diameter, cm	6.35
	Height (L), cm	12.04
	Area (A), cm ²	31.65
	Volume, cm ³	381.10
	Mass, g	642.10
	Wet Density, lb/ft ³	105.2
	Dry Density, lb/ft ³	67.1

MOISTURE CONTENT	Tare ID	J24
	Tare mass, g	206.57
	Wet Soil and tare mass, g	805.42
	Dry Soil and tare mass, g	588.68
	Water mass, g	216.74
	Dry Soil mass, g	382.11
	Water Content, %	56.7

CONSTANT HEAD TEST

$h = 62.3$ cm $h/L = 5.2$

	1	2	3	4	5	6
t, s	13620	17100	57900	15960		
Q, cm^3	1.57	1.72	4.85	1.37		
$T, °C$	22.1	20.8	21.1	21.7		
$k_T, cm/s$	7.0E-07	6.1E-07	5.1E-07	5.2E-07		

Avg. $k_T = \frac{5.6E-07}{\text{Where, } k_T = QL/Aht}$ cm/s Avg. $\alpha = 0.9738$ (See Table-Reverse) Avg. $k_{20} = \frac{5.4E-07}{\text{Where, } k_{20} = \alpha k_T}$ cm/s

DEVIATIONS

COEFFICIENT OF PERMEABILITY

Constant Head Method Falling Head Method

Work order number: **6048.2**

PROJECT NO: **MFAInc-11-01** TESTED BY: **mab** DATE: **1/17/2013**
 PROJECT NAME: **Lake River Industrial Site** CHECKED BY: **smd** DATE: **1/18/2013**
 EXPLORATION: **LRIS-LR-109** DEPTH: **1.5 ft** SAMPLE NO: **109**
 DESCRIPTION: **Dark gray SAND with silt (SP-SM)**

SCALE ID: **243** THERMOMETER ID: **10** OVEN ID: **185**
 RAMMER ID: **N/A** PERMEAMETER ID: **321.1** SIEVE ID: **N/A**

SAMPLE MEASUREMENTS	Diameter, cm	6.35
	Height (L), cm	11.35
	Area (A), cm ²	31.65
	Volume, cm ³	359.26
	Mass, g	630.90
	Wet Density, lb/ft ³	109.6
	Dry Density, lb/ft ³	78.5

MOISTURE CONTENT	Tare ID	Z28
	Tare mass, g	169.52
	Wet Soil and tare mass, g	767.85
	Dry Soil and tare mass, g	598.17
	Water mass, g	169.68
	Dry Soil mass, g	428.65
	Water Content, %	39.6

CONSTANT HEAD TEST

$h = 62.3$ cm $h/L = 5.5$

	1	2	3	4	5	6
t, s	917	9240	4940	4116		
Q, cm^3	5.62	31.52	16.00	13.11		
$T, °C$	21.0	21.5	21.7	21.9		
$k_T, cm/s$	3.5E-05	2.0E-05	1.9E-05	1.8E-05		

$Avg. k_T = \frac{2.0E-05}{\text{Where, } k_T = QL/Aht}$ cm/s $Avg. \alpha = 0.9612$ (See Table-Reverse) $Avg. k_{20} = \frac{1.9E-05}{\text{Where, } k_{20} = \alpha k_T}$ cm/s

DEVIATIONS

COEFFICIENT OF PERMEABILITY

Constant Head Method Falling Head Method

Work order number: **6048.2**

PROJECT NO: **MFAInc-11-01** TESTED BY: **mab** DATE: **1/4/2013**
 PROJECT NAME: **Lake River Industrial Site** CHECKED BY: **smd** DATE: **1/17/2013**
 EXPLORATION: **LRIS-LR-119** DEPTH: **1.5 ft** SAMPLE NO: **119**
 DESCRIPTION: **Dark gray silty Sand (SM)**

SCALE ID: **243/228** THERMOMETER ID: **10** OVEN ID: **185**
 RAMMER ID: **N/A** PERMEAMETER ID: **321.1** SIEVE ID: **N/A**

SAMPLE MEASUREMENTS	Diameter, cm	6.35
	Height (L), cm	10.88
	Area (A), cm ²	31.65
	Volume, cm ³	344.39
	Mass, g	576.8
	Wet Density, lb/ft ³	104.6
	Dry Density, lb/ft ³	65.4

MOISTURE CONTENT	Tare ID	J12
	Tare mass, g	248.85
	Wet Soil and tare mass, g	795.50
	Dry Soil and tare mass, g	590.78
	Water mass, g	204.72
	Dry Soil mass, g	341.93
	Water Content, %	59.9

CONSTANT HEAD TEST

$h = 62.3$ cm $h/L = 5.7$

	1	2	3	4	5	6
t, s	957	1114	1875	1892	60540	
Q, cm^3	0.54	0.64	0.93	0.91	20.17	
$T, °C$	21.6	21.2	21.5	21.2	20.0	
$k_T, cm/s$	3.1E-06	3.2E-06	2.7E-06	2.7E-06	1.8E-06	

$Avg. k_T = \frac{1.9E-06}{Where, k_T = QL/Aht}$ cm/s $Avg. \alpha = 0.9974$ (See Table-Reverse) $Avg. k_{20} = \frac{1.9E-06}{Where, k_{20} = \alpha k_T}$ cm/s

DEVIATIONS

COEFFICIENT OF PERMEABILITY

Constant Head Method Falling Head Method

Work order number: **6048.2**

PROJECT NO: **MFAInc-11-01** TESTED BY: **mab** DATE: **1/7/2013**
 PROJECT NAME: **Lake River Industrial Site** CHECKED BY: **smd** DATE: **1/17/2013**
 EXPLORATION: **LRIS-LR-120** DEPTH: **1.5 ft** SAMPLE NO: **120**
 DESCRIPTION: **Dark gray Silt with sand (ML)**

SCALE ID: **228/243** THERMOMETER ID: **10** OVEN ID: **185**
 RAMMER ID: **N/A** PERMEAMETER ID: **321.1** SIEVE ID: **N/A**

SAMPLE MEASUREMENTS	Diameter, cm	6.35
	Height (L), cm	12.44
	Area (A), cm ²	31.65
	Volume, cm ³	393.77
	Mass, g	624.20
	Wet Density, lb/ft ³	99.0
	Dry Density, lb/ft ³	59.3

MOISTURE CONTENT	Tare ID	J14
	Tare mass, g	249.07
	Wet Soil and tare mass, g	821.45
	Dry Soil and tare mass, g	592.03
	Water mass, g	229.42
	Dry Soil mass, g	342.96
	Water Content, %	66.9

CONSTANT HEAD TEST

$h = 62.3$ cm $h/L = 5.0$

	1	2	3	4	5	6
t, s	92040	5220	3900	4140	6600	
Q, cm^3	21.14	0.82	0.55	0.58	0.97	
$T, °C$	22.0	23.2	23.8	25.1	23.3	
$k_T, cm/s$	1.4E-06	9.9E-07	8.9E-07	8.8E-07	9.3E-07	

$Avg. k_T = \frac{1.4E-06}{Where, k_T = QL/Aht}$ cm/s $Avg. \alpha = 0.9678$ (See Table-Reverse) $Avg. k_{20} = \frac{1.3E-06}{Where, k_{20} = \alpha k_T}$ cm/s

DEVIATIONS

WATER TEMPERATURE/VISCOSITY TABLE

TEMPERATURE C°	ABSOLUTE-DYNAMIC VISCOSITY POISE	VISCOSITY CORRECTION α
16	0.01118	1.10584
17	0.01092	1.08012
18	0.01065	1.05341
19	0.01038	1.02671
20	0.01011	1.00000
21	0.00985	0.97428
22	0.00963	0.95252
23	0.00941	0.93076
24	0.00920	0.90999
25	0.00898	0.88823
26	0.00877	0.86746
27	0.00857	0.84768
28	0.00839	0.82987
29	0.00821	0.81207
30	0.00803	0.79426

APPENDIX F

DATA VALIDATION MEMORANDUM



DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

PROJECT NO. 9003.01.40 | FEBRUARY 26, 2013 | PORT OF RIDGEFIELD

This report provides the results of the review of analytical results for sediment samples collected by Maul Foster & Alongi, Inc. (MFA) in Lake River, Washington, offshore of the Port of Ridgefield-owned Lake River Industrial Site. The samples were collected in December 2012.

Test America (TA) performed the analyses. TA report numbers 580-36242-1, 580-36242-2REV1, 580-36242-3REV1, 580-36242-4, 580-36242-5, 580-36242-6 and 580-36242-7 were reviewed. The analyses performed are listed below.

Analysis	Reference
Total organic carbon	USEPA Method 9060
Dioxins and furans	USEPA Method 1613b

USEPA = U.S. Environmental Protection Agency.

DATA QUALIFICATIONS

Analytical results were evaluated according to applicable sections of USEPA procedures (USEPA, 2005, 2008), appropriate laboratory, method-specific guidelines (TA, 2012; USEPA, 1986) and the dioxin rules memorandum (MFA, 2012) developed by MFA and approved by the Washington State Department of Ecology.

Data validation procedures were modified, as appropriate, to accommodate quality-control requirements for methods not specifically addressed by the functional guidelines (i.e., total organic carbon).

Method 1613B results that were reported as an estimated maximum potential concentration (EMPC) were given a “U” qualifier (non-detect) at the reported EMPC value.

The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

HOLDING TIMES, PRESERVATION, AND SAMPLE STORAGE

Holding Times

Total organic carbon analysis was conducted past the recommended holding time for samples associated with reports 580-36242-4 and 580-36242-6. Holding time exceedances were minor, thus no data were qualified. All other extractions and analyses were performed within the recommended holding time criteria.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

BLANKS

Method Blanks

Laboratory method blank analyses were performed at the required frequencies. For purposes of data qualification, the method blanks were associated with all samples prepared in the analytical batch. Various method blank results associated with the dioxin/furan analyses exhibited a blank detection between the estimated detection limit and the reporting limit (RL) for various compounds. No actions were taken when the sample result was greater than five times the blank result or had already been qualified as non-detect because of laboratory qualification as an EMPC. Sample results that were not greater than five times the method blank detections resulted in the following qualifications:

Sample	Analyte	Original Result (pg/g)	Qualified Result (pg/g)
LRIS-LR-131	Total TCDD	0.5 JB	0.5 U
LRIS-LR-RB-20121202	OCDD	3.8 JB	3.8 U
LRIS-LR-RB-20121203	OCDD	4.0 JB	4.0 U
LRIS-LR-106-2	1,2,3,4,6,7,8-HpCDD	0.25 JB	0.25 U
LRIS-LR-106-2	1,2,3,4,6,7,8-HpCDF	0.052 JB	0.052 U
LRIS-LR-106-2	Total HpCDD	0.69 JB	0.69 U
LRIS-LR-106-2	Total HpCDF	0.052 JB	0.052 U
LRIS-LR-122-3	1,2,3,4,7,8,9-HpCDF	0.38 JB	0.38 U
LRIS-LR-125-3	1,2,3,4,7,8,9-HpCDF	0.52 JB	0.52 U
LRIS-LR-132-5	1,2,3,6,7,8-HxCDD	0.11 JB	0.11 U
LRIS-LR-132-5	1,2,3,7,8,9-HxCDD	0.092 JB	0.092 U
LRIS-LR-132-5	1,2,3,4,7,8-HxCDF	0.071 JB	0.071 U
LRIS-LR-132-5	1,2,3,6,7,8-HxCDF	0.059 JB	0.059 U
LRIS-LR-132-5	1,2,3,4,6,7,8-HpCDF	0.23 JB	0.23 U

J = Result is an estimate

B = Compound was found in the blank and sample.

pg/g = picograms per gram.

U = non-detect.

Trip Blanks

Trip blanks were not required for this sampling event.

Equipment Rinsate Blanks

Equipment rinsate blanks were collected for this sampling event. There were minor detections for OCDD and OCDF; however, no qualifications were made based on the rinsate blank results, as all associated sample results were either significantly higher or, because of method blank contamination, were previously qualified as not detected.

SURROGATE RECOVERY RESULTS

The samples were spiked with surrogate compounds to evaluate laboratory performance on individual samples. All surrogate recoveries were within acceptance limits.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

MS/MSD results are used to evaluate laboratory precision and accuracy. All MS/MSD samples were extracted and analyzed at the required frequency for Method 9060. MS/MSD samples are not required for Method 1613b. All recoveries were within acceptance limits for percent recovery and relative percent differences (RPDs).

LABORATORY DUPLICATE RESULTS

Duplicate results are used to evaluate laboratory precision. Duplicate samples were extracted and analyzed at the required frequency for Method 9060. Duplicate samples are not required for Method 1613b. All duplicate RPDs were within acceptance limits.

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RESULTS

An LCS/LCSD is spiked with target analytes to provide information on laboratory precision and accuracy. The LCS/LCSD samples were extracted and analyzed at the required frequency. All LCS/LCSD analytes were within acceptance limits for percent recovery.

FIELD DUPLICATE SAMPLE

Field duplicate samples measure both field and laboratory precision. Two field duplicates were submitted for analysis (LRIS-LR-130-FD-1 and LRIS-LR-130-FD), meeting the project-specific criteria.

MFA uses acceptance criteria of less than 100 percent RPD for results that are less than five times the RL, or less than 50 percent RPD for results that are greater than five times the RL. Non-detect data, data qualified as EMPCs, and/or data already qualified as estimates (J) are not qualified based on the RPD calculated for field duplicate results. Only field duplicate pairs were qualified based on RPD exceedances. Primary and field duplicate results and RPDs are summarized in the following table:

Sample	Field Duplicate	Analyte	Sample Result (pg/g)	Field Duplicate Result (pg/g)	Relative Percent Difference
LRIS-LR-130-2	LRIS-LR-130-FD	1,2,3,4,6,7,8-HpCDD	27 J	72 J	90.9
LRIS-LR-130-2	LRIS-LR-130-FD	1,2,3,4,6,7,8-HpCDF	3.2	7.1	75.7
LRIS-LR-130-2	LRIS-LR-130-FD	1,2,3,4,7,8,9-HpCDF	0.053 U	0.19 U	112.7
LRIS-LR-130-2	LRIS-LR-130-FD	1,2,3,4,7,8-HxCDD	0.3 U	0.54 J	57.1
LRIS-LR-130-2	LRIS-LR-130-FD	1,2,3,4,7,8-HxCDF	0.28 U	0.57 U	68.2
LRIS-LR-130-2	LRIS-LR-130-FD	1,2,3,6,7,8-HxCDD	1.4 J	3.6	88
LRIS-LR-130-2	LRIS-LR-130-FD	1,2,3,6,7,8-HxCDF	0.19 J	0.35 J	59.2
LRIS-LR-130-2	LRIS-LR-130-FD	1,2,3,7,8,9-HxCDD	0.61 J	0.96 J	44.5
LRIS-LR-130-2	LRIS-LR-130-FD	1,2,3,7,8,9-HxCDF	0.026 U	0.091 U	111.1
LRIS-LR-130-2	LRIS-LR-130-FD	1,2,3,7,8-PeCDD	0.056 U	0.19 U	108.9
LRIS-LR-130-2	LRIS-LR-130-FD	1,2,3,7,8-PeCDF	0.044 U	0.18 U	121.4
LRIS-LR-130-2	LRIS-LR-130-FD	2,3,4,6,7,8-HxCDF	0.3 J	0.72 J	82.3
LRIS-LR-130-2	LRIS-LR-130-FD	2,3,4,7,8-PeCDF	0.098 J	0.2 U	68.4
LRIS-LR-130-2	LRIS-LR-130-FD	2,3,7,8-TCDD	0.16 U	0.16 U	0
LRIS-LR-130-2	LRIS-LR-130-FD	2,3,7,8-TCDF	0.32 U	0.12 J	90.9
LRIS-LR-130-2	LRIS-LR-130-FD	OCDD	270	660	83.8
LRIS-LR-130-2	LRIS-LR-130-FD	OCDF	6.8	14	69.2
LRIS-LR-130-2	LRIS-LR-130-FD	Total HpCDDs	49	140	96.2
LRIS-LR-130-2	LRIS-LR-130-FD	Total HpCDFs	9.6	24	85.7
LRIS-LR-130-2	LRIS-LR-130-FD	Total HxCDDs	7.4 U	15	67.8
LRIS-LR-130-2	LRIS-LR-130-FD	Total HxCDFs	6.1 U	15 U	84.3
LRIS-LR-130-2	LRIS-LR-130-FD	Total PeCDDs	0.4 U	0.19 U	71.1
LRIS-LR-130-2	LRIS-LR-130-FD	Total PeCDFs	1.1 U	1.1 J	0
LRIS-LR-130-2	LRIS-LR-130-FD	Total TCDDs	0.39 U	0.16 U	83.6
LRIS-LR-130-2	LRIS-LR-130-FD	Total TCDFs	0.66 U	0.12 U	138.4
LRIS-LR-130	LRIS-LR-130-FD-1	1,2,3,4,6,7,8-HpCDD	25 J	19 J	27.2
LRIS-LR-130	LRIS-LR-130-FD-1	1,2,3,4,6,7,8-HpCDF	2.9 U	2.9 J	0
LRIS-LR-130	LRIS-LR-130-FD-1	1,2,3,4,7,8,9-HpCDF	0.083 U	0.056 U	38.8
LRIS-LR-130	LRIS-LR-130-FD-1	1,2,3,4,7,8-HxCDD	0.19 J	0.23 U	19
LRIS-LR-130	LRIS-LR-130-FD-1	1,2,3,4,7,8-HxCDF	0.68 J	0.47 J	36.5

Sample	Field Duplicate	Analyte	Sample Result (pg/g)	Field Duplicate Result (pg/g)	Relative Percent Difference
LRIS-LR-130	LRIS-LR-130-FD-1	1,2,3,6,7,8-HxCDD	1.2 U	1 J	18.1
LRIS-LR-130	LRIS-LR-130-FD-1	1,2,3,6,7,8-HxCDF	0.27 J	0.22 J	20.4
LRIS-LR-130	LRIS-LR-130-FD-1	1,2,3,7,8,9-HxCDD	0.54 J	0.42 U	25
LRIS-LR-130	LRIS-LR-130-FD-1	1,2,3,7,8,9-HxCDF	0.035 U	0.025 U	33.3
LRIS-LR-130	LRIS-LR-130-FD-1	1,2,3,7,8-PeCDD	0.074 U	0.051 U	36.8
LRIS-LR-130	LRIS-LR-130-FD-1	1,2,3,7,8-PeCDF	0.11 U	0.15 J	30.7
LRIS-LR-130	LRIS-LR-130-FD-1	2,3,4,6,7,8-HxCDF	0.24 J	0.25 J	4
LRIS-LR-130	LRIS-LR-130-FD-1	2,3,4,7,8-PeCDF	0.073 U	0.15 J	69
LRIS-LR-130	LRIS-LR-130-FD-1	2,3,7,8-TCDD	0.044 U	0.029 U	41
LRIS-LR-130	LRIS-LR-130-FD-1	2,3,7,8-TCDF	0.24 U	0.3 J	22.2
LRIS-LR-130	LRIS-LR-130-FD-1	OCDD	250	170	38
LRIS-LR-130	LRIS-LR-130-FD-1	OCDF	13	7.2	57.4
LRIS-LR-130	LRIS-LR-130-FD-1	Total HpCDDs	47	41	13.6
LRIS-LR-130	LRIS-LR-130-FD-1	Total HpCDFs	12 U	9.1	27.4
LRIS-LR-130	LRIS-LR-130-FD-1	Total HxCDDs	6.5 U	6 U	8
LRIS-LR-130	LRIS-LR-130-FD-1	Total HxCDFs	6.3	5.1	21
LRIS-LR-130	LRIS-LR-130-FD-1	Total PeCDDs	0.074 U	0.17 J	78.6
LRIS-LR-130	LRIS-LR-130-FD-1	Total PeCDFs	0.76 J	1 U	27.2
LRIS-LR-130	LRIS-LR-130-FD-1	Total TCDDs	0.38 U	0.12 U	104
LRIS-LR-130	LRIS-LR-130-FD-1	Total TCDFs	0.83 U	0.99 U	17.4

pg/g = picograms per gram.

J = estimated.

U = non-detect.

Sample results that failed to meet RPD criteria for field duplicate pairs were qualified as estimates (J).

Sediment Reference Material

A sediment reference material (SRM) is used to help assess laboratory measurement accuracy and monitor laboratory performance when analyzing for chlorinated dioxins and furans. A Puget Sound SRM was prepared and analyzed by USEPA Method 1613b for each analytical batch. Sample results associated with SRM results that fell outside the acceptance limits set forth by the U.S. Army Corps of Engineers (COE, 2012) were qualified as estimates (J). Various results were qualified in each delivery group. Only detected concentrations were qualified as a result of SRM criteria exceedances. The following table lists SRM criteria exceedances:

SRM Prep Date	Laboratory Report	Exceeding Analyte
12/14/2012	580-36242-2REV1	1,2,3,4,7,8,9-HpCDF
12/14/2012	580-36242-2REV1	1,2,3,7,8-PeCDF
12/14/2012	580-36242-2REV1	2,3,4,6,7,8-HxCDF
12/14/2012	580-36242-2REV1	2,3,4,7,8-PeCDF
12/14/2012	580-36242-2REV1	2,3,7,8-TCDF
12/12/2012	580-36242-2REV1	1,2,3,4,6,7,8-HpCDD
12/12/2012	580-36242-2REV1	1,2,3,4,7,8,9-HpCDF
12/12/2012	580-36242-2REV1	1,2,3,7,8-PeCDF
12/12/2012	580-36242-2REV1	2,3,7,8-TCDD
12/12/2012	580-36242-2REV1	2,3,7,8-TCDF
1/11/2013	580-36242-3REV1	1,2,3,4,6,7,8-HpCDF
1/11/2013	580-36242-3REV1	1,2,3,4,7,8,9-HpCDF
1/11/2013	580-36242-3REV1	1,2,3,4,7,8-HxCDF
1/11/2013	580-36242-3REV1	1,2,3,6,7,8-HxCDF
1/11/2013	580-36242-3REV1	2,3,4,6,7,8-HxCDF
1/11/2013	580-36242-3REV1	2,3,7,8-TCDD
1/11/2013	580-36242-3REV1	2,3,7,8-TCDF
1/17/2013	580-36242-5	1,2,3,7,8,9-HxCDF
1/17/2013	580-36242-5	2,3,7,8-TCDF
1/17/2013	580-36242-5	OCDF
2/8/2013	580-36242-7	1,2,3,7,8,9-HxCDF

Sample results associated with SRM exceedances were flagged as estimates (J) if detected.

REPORTING LIMITS

TA used routine RLs and estimated detection limits for non-detect results, except for samples requiring dilutions because of high analyte concentrations and/or matrix interferences.

DATA PACKAGE

The data packages were reviewed for transcription errors, omissions, and anomalies. None were found.

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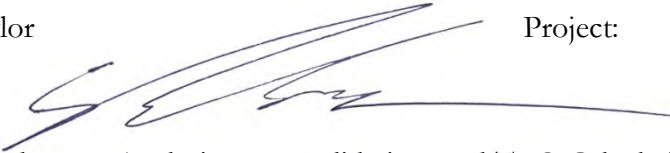
APPENDIX G

DIOXIN AND FURAN ANALYSIS, DATA VALIDATION,
AND TEQ CALCULATION RULES





MEMORANDUM

To: File Date: September 28, 2012
From: Erik Naylor Project: 9003.01.40

RE: Dioxin and Furan Analysis, Data Validation, and TEQ Calculation Rules

The term dioxin is used to refer to a family of toxic chemicals that share a similar chemical structure and a common mechanism of toxic action. While there are 210 dioxin congeners, typically only the 17 most toxic congeners are reported by laboratories. The reported concentrations of the 17 dioxin congeners typically are validated to assess usability and then a toxicity equivalent concentration (TEQ) is calculated from the reported results to evaluate the toxicity of these compounds as a whole. The purpose of this memo is to provide an approach for dioxin data validation and TEQ calculation for the former Pacific Wood Treating site. Further, analytical method recommendations and requirements for laboratory deliverables are provided to enable consistent data validation and TEQ calculation using data from a variety of laboratories.

Critical to consistent data use is consistent use of terminology. Terms used in this memorandum are defined below.

- Method Detection Limit (MDL)—The minimum concentration of a compound that can be measured and reported with 99 percent confidence that the value is greater than zero according to the Washington State Department of Ecology's (Ecology), Model Toxics Control Act (MTCA) (Ecology, 2007).
- Estimated Detection Limit (EDL)—The sample- and analyte-specific EDL is an estimate made by the laboratory of the concentration of a given analyte that would have to be present to produce a signal with a peak height of at least 2.5 times the background noise signal level (U.S. Environmental Protection Agency [USEPA], 2005).
- Practical Quantitation Limit (PQL)—The lowest concentration that can be reliably measured within specified limits of precision, accuracy, representativeness, completeness, and comparability during routine laboratory operating conditions, using Ecology-approved methods (Ecology, 2007). This value is usually the lowest concentration used to calibrate the instrument after being adjusted for sample volume, sample extract volume, cleanups performed, and injection volume. PQLs should be no greater than 10 times the MDL (Ecology, 2007) and no greater than what is established by the USEPA in 40 Code of Federal Regulations (CFR) 136, 40 CFR 141-143, or 40 CFR 260-270.

- Estimated Maximum Potential Concentration (EMPC)—An EMPC is a value calculated for a reported analyte when the signal-to-noise ratio is at least 2.5:1 for both quantitation ions, but the ion abundance ratio criteria used for analyte confirmation are not met (USEPA, 2005). An EMPC value represents the maximum possible result of an analyte that could not be positively identified. The inability to positively identify the analyte could be a result of matrix interference, a coeluting compound, or low response.
- Toxic Equivalency Factor (TEF)—The factor by which each congener is multiplied in order to calculate its toxicity relative to 2,3,7,8-TCDD (Ecology, 2007). These values are summed to calculate the TEQ. TEFs depend on the endpoint being examined (i.e., birds, fish, mammals).
- TEQs—Concentrations of each congener are adjusted and summed to reflect their potency relative to 2,3,7,8-TCDD, one of the most toxic congeners. The TEQ is the sum of congener results multiplied by their specific TEF (Ecology, 2007).

ANALYTICAL METHODS

Dioxins are analyzed generally by USEPA Method 1613B or 8290, using a high-resolution gas chromatograph paired with a high-resolution mass spectrometer. A laboratory's PQL is usually the same for both methods. While the methods are very similar, Method 1613B is preferred, as it requires more rigorous quality assurance and quality control (QA/QC) through the use of six more internal standards than Method 8290. Because analytical technology and methodology have advanced rapidly since the methods were written, many laboratories combine elements of both methods to obtain the best results possible (Hoffman, E., and D. Fox 2010). Often the preparation and analyses are run using Method 1613B (for the additional QA/QC), while the calculations will be performed by Method 8290 (in order to obtain the sample- and analyte-specific EDLs). Method 1613B with calculated EDLs is the preferred method.

LABORATORY DELIVERABLES

It is important to work closely with the laboratory performing the dioxin analyses because different laboratories report data in different ways. The following items should be requested to ensure that the analytical report and electronic data deliverable (EDD) will contain all of the requisite information to validate the data and calculate TEQs:

- EDLs¹ and PQLs should be included in the final analytical report. EDLs, MDLs, and PQLs should all be included in the EDD.
- Results should be reported to the sample- and analyte-specific EDL. Results below the PQL but above the EDL will be qualified as estimates (J).

¹ Note that USEPA Method 1613B does not provide for the calculation of EDLs; therefore, the laboratory must use the calculation approach provided in Method 8290 to report the required limits.

- EMPC results should be reported at the EMPC value (EMPC values will be assigned a “U” qualifier [the analyte was not detected at or above the concentration qualified] at the time of validation).

TEQ concentrations will not be requested from the laboratory. If the laboratory provides TEQ concentrations, they will not be used because the data have not been validated. TEQs should be calculated only after the data are validated.

VALIDATION

Dioxin data are validated much like other organic data, but there are a few issues that do not typically arise in other organic data sets. In addition to standard validation procedures (USEPA 2005), the following scenarios should be addressed in the fashion described below, consistent with other Ecology sites (Ecology and Environment and G. L. Glass, 2011):

- EMPC reported values should be assigned a U qualifier at the reported EMPC value.
- EMPC values that appear to be significantly elevated should be investigated further with the laboratory and may be assigned an R qualifier (unusable) when applicable.
- Non-detected results should be assigned a U qualifier and reported at the EDL value.

Further dioxin validation guidelines can be found in the National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review (USEPA 2005). Data must be validated before TEQs are calculated.

TEQS

To express the overall toxicity of the 17 reported dioxins, the concentration of each congener is adjusted based on its toxicity relative to the most toxic congener, 2,3,7,8-TCDD, and then all 17 are added together. The adjustment factors, the TEFs, are provided by the 2005 World Health Organization. TEQs are commonly calculated by one of the following two methods:

- Non-detected values (U) are set as one half of the EDL. Values that are detected, even as estimates (J), should be used at face value. Multiply congener values by their corresponding TEF and then sum all of the products.
- Non-detected values (U) are set as 0. Values that are detected, even as estimates (J), should be used at face value. Multiply congener values by their corresponding TEF and then sum all of the products.

These methods result in two different TEQ values that can be shown as TEQ (U=1/2) and TEQ (U=0). TEQs should not be calculated to more significant figures than the original data. The table below illustrates these methods:

Dioxin	Result (ng/kg)	TEC ¹ (U=1/2) (ng/kg)	TEC ¹ (U=0) (ng/kg)	TEF Mammals
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	44	44	44	0.0003
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3000 J	3000	3000	0.0003
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	41	41	41	0.01
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	510	510	510	0.01
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	2.9 U	1.45	0	0.01
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	6.9 U	3.45	0	0.1
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	7.4	7.4	7.4	0.1
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.2 U	2.6	0	0.1
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	27	27	27	0.1
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	0.5 U	0.25	0	0.1
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	22	22	22	0.1
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3.4 U	1.7	0	0.03
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	3.2 U	1.6	0	1
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.4	2.4	2.4	0.1
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3 U	1.5	0	0.3
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1.4 U	0.7	0	0.1
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	0.23 U	0.115	0	1
Total Heptachlorodibenzofuran (HpCDF)	99	99	99	--
Total Heptachlorodibenzo-p-dioxin (HpCDD)	1,100	1100	1100	--
Total Hexachlorodibenzofuran (HxCDF)	97 J	97	97	--
Total Hexachlorodibenzo-p-dioxin (HxCDD)	250	250	250	--
Total Pentachlorodibenzofuran (PeCDF)	44	44	44	--
Total Pentachlorodibenzo-p-dioxin (PeCDD)	32 J	32	32	--
Total Tetrachlorodibenzofuran (TCDF)	19	19	19	--
Total Tetrachlorodibenzo-p-dioxin (TCDD)	8.2	8.2	8.2	--
TEQ (U=1/2)	15.2	--	--	--
TEQ (U=0)	12.3	--	--	--
NOTES: -- = no value. ng/kg = nanograms per kilogram. ¹ TEC is analyte-specific TEF adjusted concentration.				

The difference between TEQ (U=1/2) and TEQ (U=0) values gives data reviewers an idea of how much the EDL substitution affects the TEQ summation (Hoffman, E., and D. Fox 2010). While

MTCA does not specify using the TEQ (U=1/2) method, it is the method that has been historically used at the Port of Ridgefield and will continue to be used.

SUMMARY

- USEPA Method 1613B is recommended for dioxin analysis (with Method 8290 EDL calculations).
- The laboratory must report a PQL and EDL for each sample and each congener, and provide a PQL, EDL, and MDL for each sample and each congener in the EDD.
- Results should be reported to the sample- and analyte-specific EDL. Results below the PQL but above the EDL will be qualified as estimates (J).
- EMPC results should be reported at the EMPC value (EMPC values will be assigned a “U” qualifier at the time of validation). However, if the EMPC is significantly elevated, additional qualification may be appropriate.
- Non-detected results should be assigned a U qualifier and reported at the EDL value.
- Laboratory data must be validated before a TEQ is calculated.
- TEQs should be calculated as follows: non-detected values (U) are set as one half of the EDL. Values that are detected, even as estimates (J), should be used at face value. Multiply congener values by their corresponding TEF and then sum all of the products.

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APPENDIX H

INTERPOLATION EVALUATION



APPENDIX H—INTERPOLATION EVALUATION

To develop initial estimates of pre- and post-remedy dioxin surface-weighted average concentrations and preliminary remedial action areas, the remedial investigation and feasibility study relied on the use of the Thiessen Polygons (TP) (MFA, forthcoming). The TP method was selected because of its simplicity and because data density was insufficient for the application of interpolation methods. The TP method was appropriate for initial evaluation of remedial alternatives and comparison of costs associated with varying remedies. However, the TP method is less appropriate for delineating the precise boundary of remedial actions because it does not account for concentration gradation, as it assumes that all sediment within a polygon exhibits the same chemical concentration.

Pre-design data collection increased sediment data density such that more sophisticated and informative interpolation methods can be used. The interpolation methods predict sediment concentrations at a much finer resolution (e.g., for 1-by-1-foot [ft] cells) than TP (de Smith, Goodchild, and Longley, 2008), enabling more precise development of remedial prisms and pre- and post-remedial dioxin estimates. Note that all interpolation methods provide estimates of concentrations based on available data and therefore do not reflect actual concentrations. Commonly applied interpolation techniques, inverse-distance weighted method (IDW) and natural neighbor interpolation (NN), were evaluated to select the most appropriate method to delineate remedial action areas. The evaluation of interpolation methods and selection rationale is provided below.¹

IDW EVALUATION

IDW predicts cell values by calculating the weighted average of values available at known cells. Known values closest to the prediction cell have more influence (or weight) than those farther away. Weights are proportional to the inverse of the distance (between the known cell and the prediction cell) raised to the power value p . Lower p values more heavily weigh distant known cells and the converse is also true.

The search neighborhood parameters (search radius, shape, and minimum or maximum known data points) can also impact the resultant interpolation and act to limit the extent of the data used to determine the unknown cell values. The search radius is used to limit the distance from an unknown cell that the interpolation method can extend in search of known cells. The similarity of measured values to interpolated point values is expected to diminish with distance. The shape of the search radius is influenced by the available data and the surface to be created. If there is a discernable directional influence on the weighting of the data (e.g., due to river flow), or the data show directional attributes given what is known about the conceptual site model (CSM), the shape of the search radius may be modified

¹ Analysis extent for interpolations was clipped to the upshore extent of dredge feasibility; dredge boundaries near the shore were generally determined by projection of a 3:1 horizontal to vertical slope down from the shoreline inflection point to the required dredge depth, and ENR boundaries near the shore were determined by the point where the shore slope transitions to less than a 5:1 horizontal to vertical slope. Upshore extent may change slightly upon receipt of additional data (see report text for details).

from the default circular search shape to elliptical. When choosing the number of neighbors (minimum or maximum) used for interpolating the value of an unknown cell, it is important to consider enough points to yield a good prediction, and few enough points to be practical (de Smith, Goodchild, and Longley, 2008).

IDW interpolations were evaluated by varying values for the power and search neighborhood parameters. The resultant interpolations were reviewed to evaluate the model and predictions that were used to create the surface through quantifiers with statistical significance (Esri, 2001) and to select the interpolation surface expected to be most representative of actual site conditions. One important diagnostic tool is the root mean square error (RMSE). This cross validation tool in ArcGIS is used to compare a predicted value to a measured value at a known location by removing each measured value one at a time and then predicting its value using the data at the rest of the locations. The difference between the known and the predicted value is known as the root mean square prediction error. Through an iterative process, the cross validation tool calculates the root mean square prediction error using different power factors. Lower RMSE indicates that the interpolation better approximates measured values; therefore, IDW interpolations with lower RMSE, in general, better approximate actual conditions.

Data were natural log-transformed before evaluation; this is a standard feature in ArcGIS and is often used to achieve normality by reducing the influence of extreme and isolated values on the resulting contours (de Smith, Goodchild, and Longley, 2008). This transformation is particularly appropriate for the site, as data are skewed and extreme values often lie in close proximity (see Figure 4-1 in the report).

For IDW evaluation, a search radius of 200 ft was selected based on the spatial data density because known data points (i.e., sample locations) were generally within 200 ft of each other. The number of minimum neighbors (i.e., known locations) to include in interpolation was selected as 1 (i.e., at least one neighboring measured value was included in interpolation); changes to this parameter resulted in minor differences in resultant interpolations.

IDW interpolations were somewhat sensitive to power parameter variation (see Figure 1) when a circular search shape was used. A power factor of one results in the lowest RMSE, but generates discontinuous, jagged areas that are unlikely to be representative of actual conditions. Higher powers result in a smoothing of the surface but also increase the RMSE, indicating higher error in predicting known concentrations. Thus, an elliptical shape parameter was evaluated.

An elliptical search shape may better approximate actual site conditions, as sediment concentrations have a clear directional component. Sediment concentrations along the nearshore are more similar to each other than to concentrations in the midchannel; this pattern is consistent with the CSM of historical discharge from outfalls along the eastern shoreline (see Figure 4-1 in the report), and is consistent with limited mobility of dioxins, with some limited sediment transport north and south due to tidally driven river flow. An elliptical search shape is more likely to include sample concentrations to the north or south (approximately) of a prediction cell than those east or west of a prediction cell, therefore better accounting for the directionality observed in the dataset. The ellipse was oriented at 155 degrees (parallel to Lake River) with a major axis (running approximately north-south)

of 200 ft and a minor axis of 100 ft. Other major/minor axis lengths were also evaluated, but resulted in unrealistic interpolations.

The elliptical search shape resulted in a realistic (i.e., more continuous) surface interpolation that is consistent with the CSM, showing elevated concentrations occurring primarily in nearshore areas (see Figure 2). The RMSE was lowest for the power factor of one and was thus selected. A smoothing factor (0.5) was applied to further reduce “peaking” effects (see Figure 2). The smoothing factor reduces the likelihood that any one sample value will overly influence an estimated value for a given interpolation location. IDW is an exact interpolator, so where an interpolation location coincides with a sample location, a sharp “peak” or “valley” may result. Setting a smoothing factor > 0 reduces this peaking effect when it occurs.

In summary, an IDW (power factor=1 search radius=200 by 100 ft, shape=ellipse, minimum neighbors=1, smoothing factor=0.5) appeared to provide the most realistic interpolation and was carried forward for evaluation. This interpolation produces estimated surface concentrations that are most consistent with measured concentrations and the CSM, and results in smooth contouring that likely is the most representative of actual conditions.

NATURAL NEIGHBOR EVALUATION

NN calculates the value for each prediction cell by adding the cell location to the original set of locations and recalculating a set of TP (de Smith, Goodchild, and Longley, 2008); each cell's value is proportional to the average of the area of the original TP set covered by that cell's TP. It does not infer trends and will not produce peaks, pits, ridges, or valleys that are not already represented by the input samples. NN has the advantage over other spatial statistical algorithms of being fully defined, i.e., its algorithm does not rely on selection of parameters.² As with IDW, data were log-transformed to account for data skew.

INTERPOLATION COMPARISON

Resulting dioxin surface contours for TP, IDW, and NN are shown in Figure 3. TP results in a discontinuous surface with artificial peaks. IDW and NN generally predict similar extents of elevated concentrations in Lake River; a primary difference is that IDW predicts greater extent of elevated concentrations in the nearshore environment between OF-4 and OF-6. All three methods show significant overlap, reflecting sufficient data density to characterize extent of dioxin impacts at Lake River.

REMEDY DELINEATION

As discussed, IDW provides fine scale resolution that the TP method cannot provide, projects slightly greater extent of elevated dioxin concentrations than NN (and is therefore

² NN does not provide concentration estimates for areas beyond the polygon encompassing all measured data points; therefore “dummy points” equivalent to the nearest in-water sample were generated at +12 Columbia River Datum directly perpendicular to Lake River to provide estimates of the nearshore environment.

slightly more conservative), and is consistent with the CSM and measured site concentrations. Therefore, IDW is selected as the interpolation methodology for delineating remedial action areas.

Note that because interpolation methods project similar sediment concentrations, the differences between surface remedy areas based on different interpolation methods are minor (see Figure 4). The contour boundaries shown represent the extent of remedial actions to be conducted, i.e., enhanced natural recovery (ENR) for sediments between 5 nanograms per kilogram (ng/kg) and 30 ng/kg dioxin toxicity equivalent, and dredge and ENR for areas exceeding 30 ng/kg.

Figure 4-2 in the report shows distribution of dioxin extent in surface and subsurface, using the selected IDW interpolation. To delineate the remedial areas, one of three “values” was assigned to a 1-x-1-ft cell, based on the predicted dioxin concentration for each of the four interpolations shown in Figure 4-2 (surface, 1 to 2 ft, 2 to 3 ft, 3 to 4 ft):

- Concentrations in surface and subsurface greater than 30 ng/kg were assigned “Dredge.”
- Surface locations with concentrations between 5 and 30 ng/kg were assigned “ENR.”
- Concentrations from 0 to 5 ng/kg were assigned “No Action.”

A composite remedial action surface was then generated by assigning the maximum value (4-ft dredge depth being maximum [this includes 1 ft of overdredge], No Action being minimum) from each of the four interpolations at surface and subsurface. The composite remedial action surface was first generated on a 1-x-1-ft grid, and then on a 10-x-10-ft grid. Remedial actions were assigned to a 10-x-10-ft grid to approximate a scale at which remedial actions can be feasibly conducted, i.e., dredge bucket size may be 7 x 7 ft.³

The majority value from the 1-x-1-ft grids comprised by a 10-x-10-ft grid was transferred to the 10x10-ft grid. For example, if the majority of 1-x-1-ft cells in the 10-x-10-ft grid are projected to exceed 30 ng/kg, then a “Dredge” action is assigned to that grid.⁴ The resulting remedial areas are shown in Figure 4-3 in the report.

POST-REMEDY CONDITIONS

The estimated post-remedy conditions following dredging and ENR placement are described in the report. Figure 5 shows projected conditions following dredging but prior to ENR placement. Note that residuals may increase concentrations above those shown; however, ENR is expected to cover and dilute any residuals through mixing.

³ Further detail on equipment to be used (dredge bucket size and reach) may modify the appropriate grid size, and therefore the appropriate remedial action for a particular grid could change; however, the overall change is expected to be minimal.

⁴ An approach assigning the action according to the maximum value (rather than the majority value) for cells in the larger grid was also considered (maximum method). This method resulted in a few additional areas targeted for remedial action, primarily in the midchannel. Empirical data indicate low concentrations (i.e., below cleanup levels) in the mid-channel, thus the majority method was selected.

REFERENCES

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<http://www.esri.com/library/whitepapers/pdfs/geostat.pdf> (March 15, 2013). August.

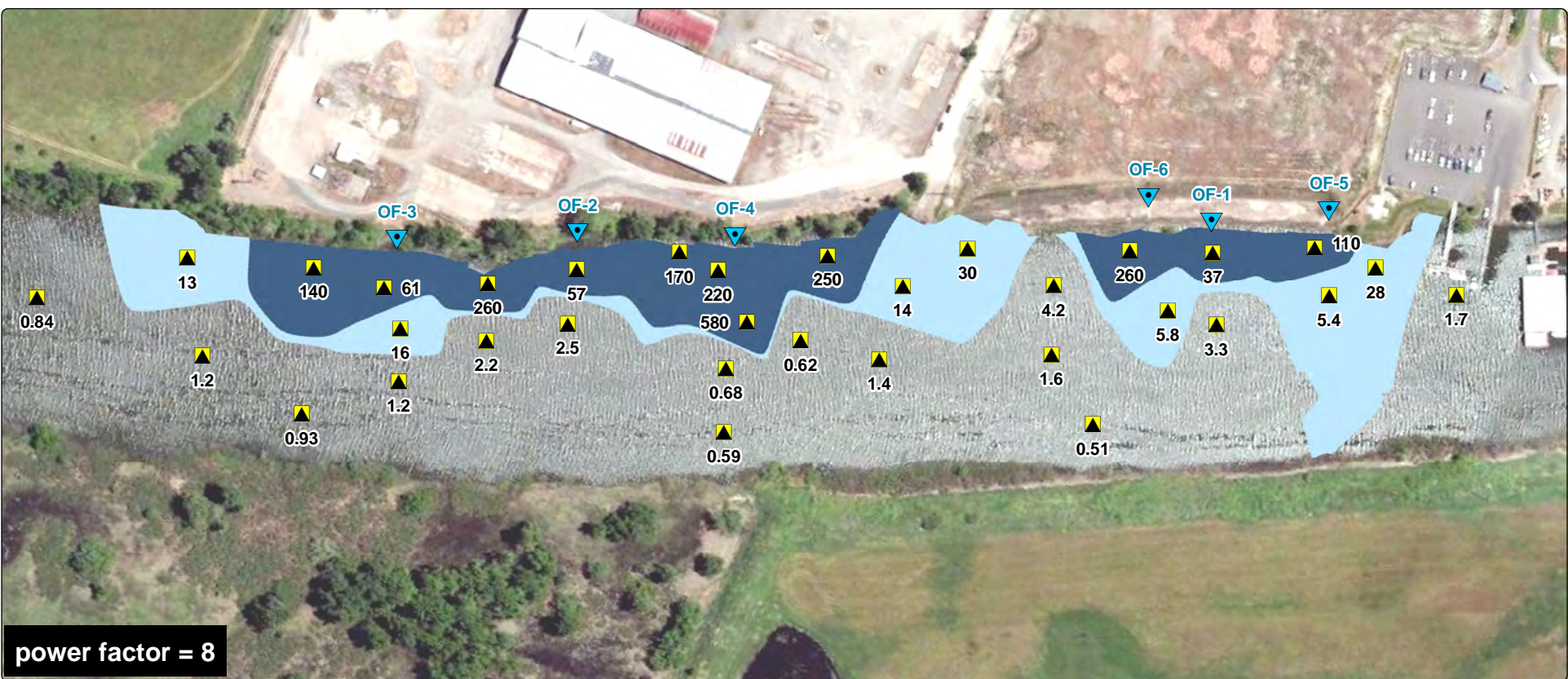
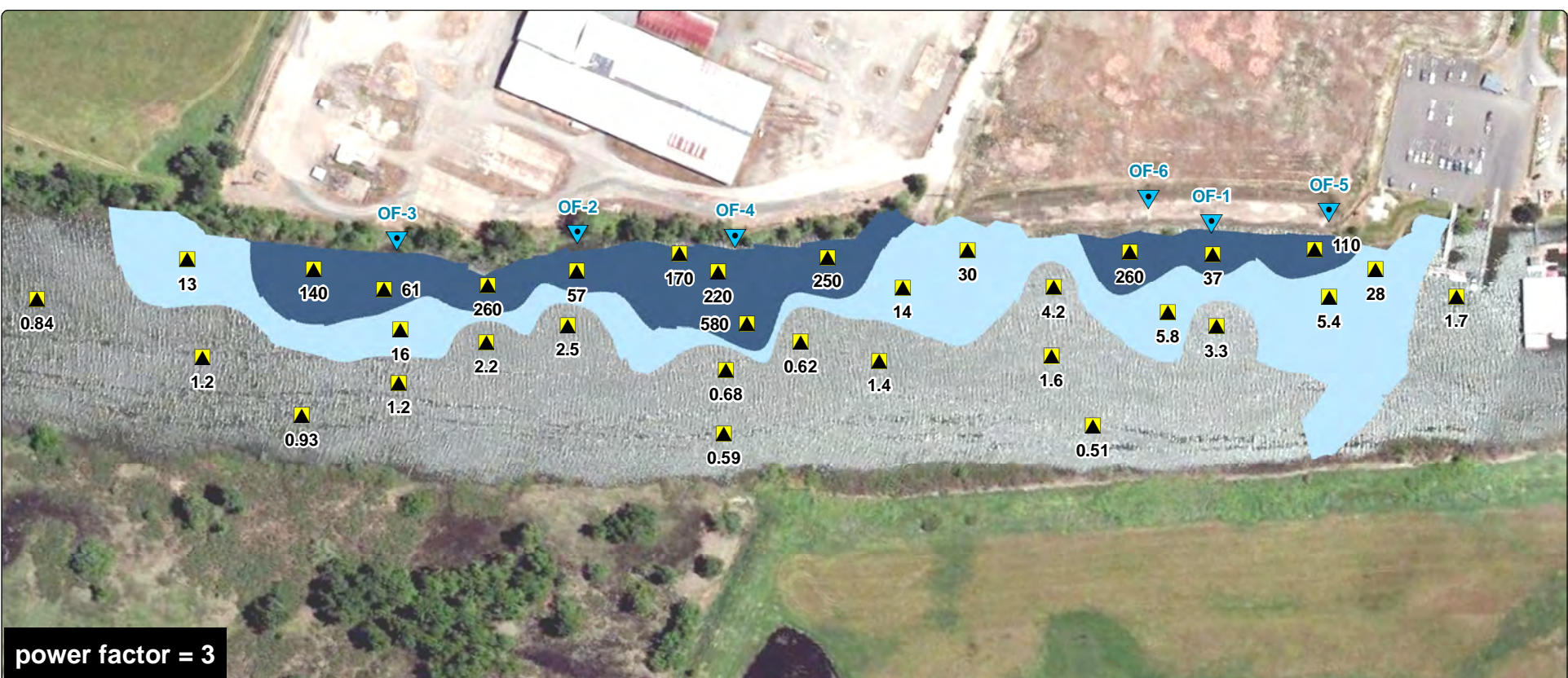
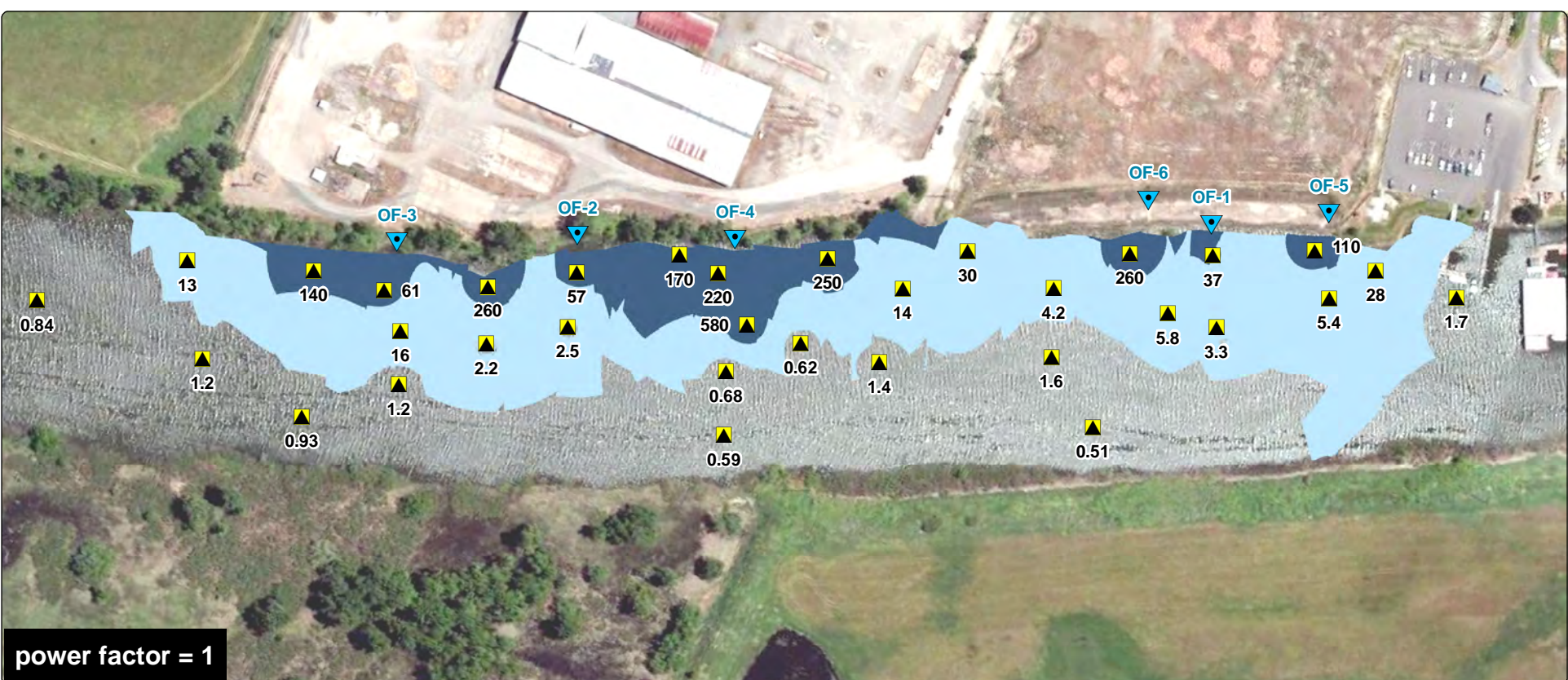
MFA. Forthcoming. Former PWT site remedial investigation and feasibility study. Prepared for the Port of Ridgefield. Maul Foster & Alongi, Inc., Vancouver, Washington.

de Smith, M., M. Goodchild., and P. Longley. 2008. Geospatial analysis: a comprehensive guide. Matador: Leicester, UK. Excerpt available from:
<http://www.spatialanalysisonline.com/output/>.

FIGURES



Path: X:\9003.01 Port of Ridgefield\400 Projects\06 Lake River Pre-Design\Report\Appendix\Fig1_Evaluation of Parameter Settings Using IDW Method with Circular Neighborhood.mxd
 Print Date: 5/1/2013
 Approved By: mmovak
 Produced By: rmaroon
 Project: 9003.01-40/06



Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps

- Notes:
1. ENR = Enhanced Natural Recovery.
 2. IDW = Inverse Distance Weighted.
 3. TEQ = Toxicity Equivalent.
 4. ng/kg = nanograms per kilogram.
 5. Dioxin TEQ values west of sampling extent were extrapolated to an assumed constant of 2.0 ng/kg.
 6. Analysis extent has been clipped to the upshore extent of dredge feasibility. Dredge boundaries near the shore were generally determined by projection of a 3:1 horizontal to vertical slope down from the shoreline inflection point to the required dredge depth. ENR boundaries near the shore were determined by the point where the shore slope transitions to less than a 5:1 horizontal to vertical slope.
 7. Sample concentrations were log-normalized prior to conducting interpolation because of a positively skewed histogram indicating the presence of a few very large concentrations.
 8. IDW parameters: 200-ft circular search neighborhood, minimum samples=1.

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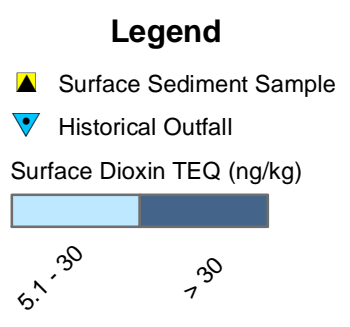
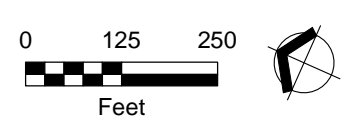
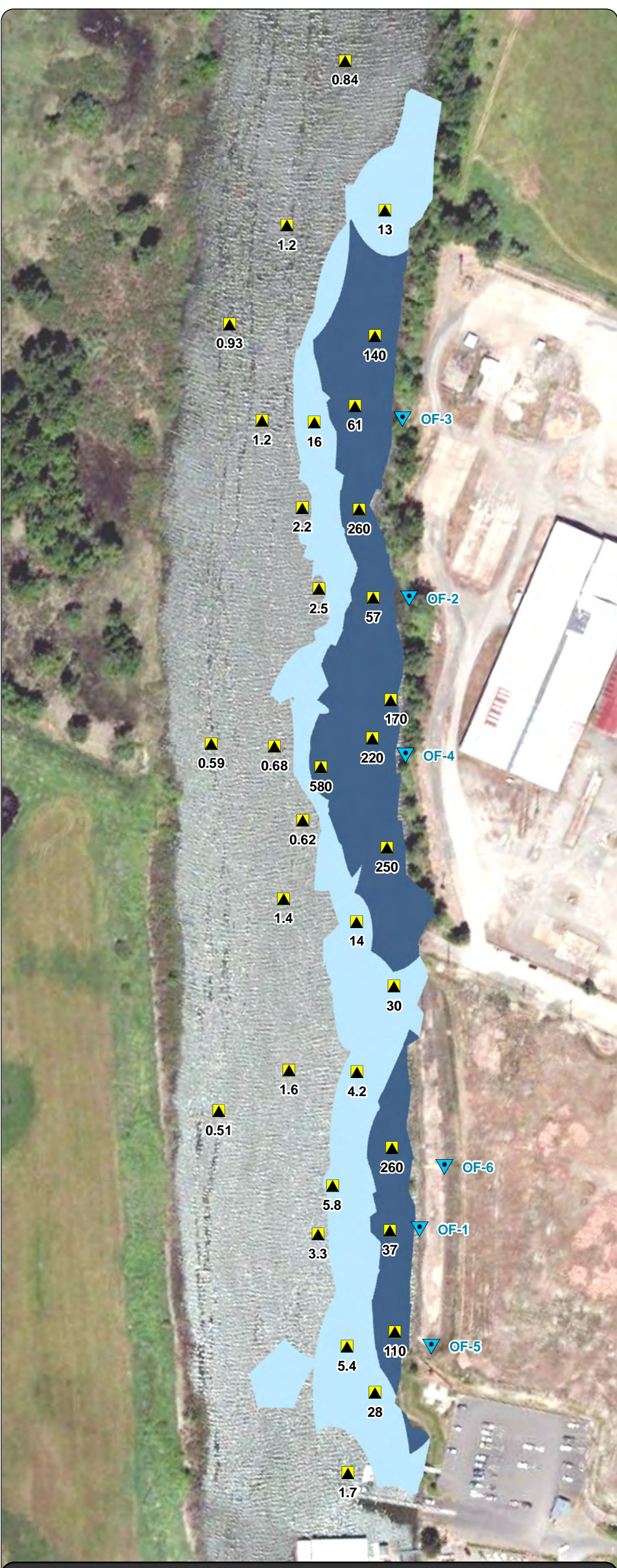
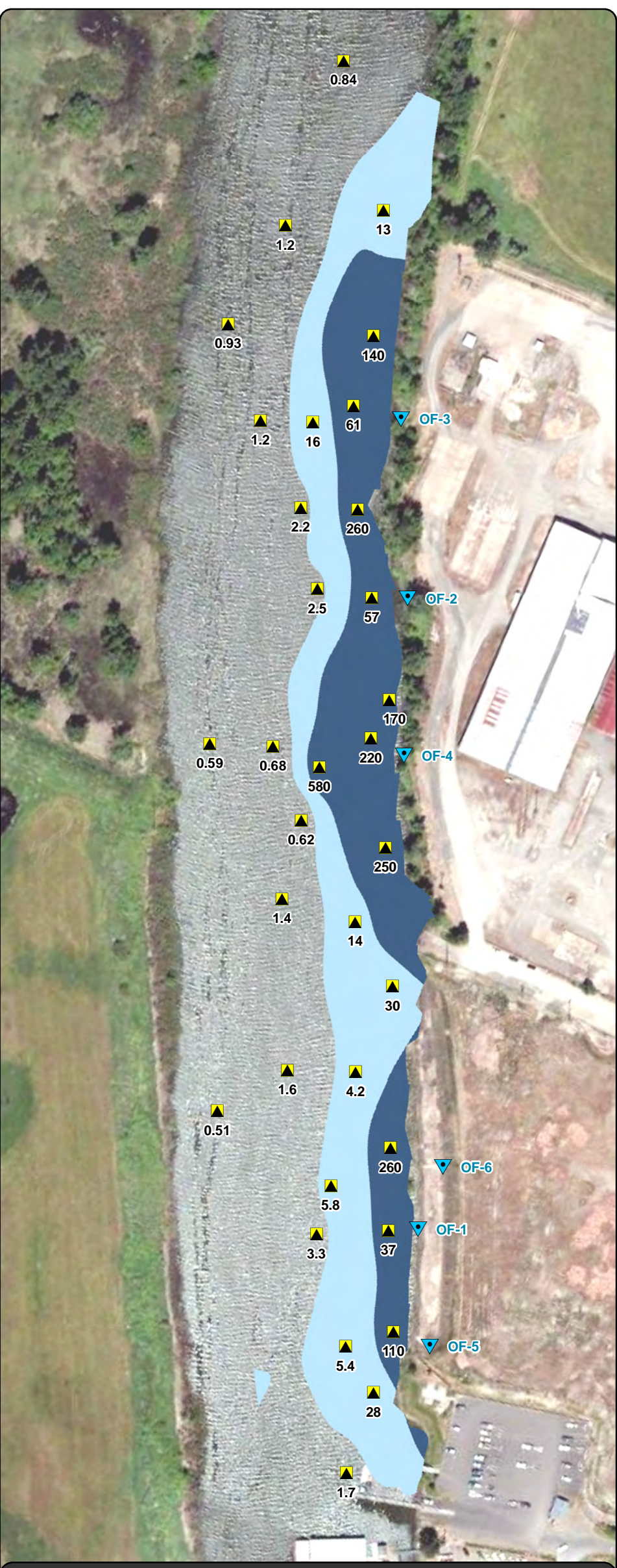


Figure 1
DISTRIBUTION OF DIOXIN IN SEDIMENT
 Evaluation of Parameter Settings using
 IDW Interpolation with 200-ft Radius
 Circular Search Neighborhood
 Former PWT Site
 Ridgefield, Washington





No Smoothing



Smoothing Factor = 0.5

Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps

- Notes:
1. ENR = Enhanced Natural Recovery.
 2. IDW = Inverse Distance Weighted.
 3. TEQ = Toxicity Equivalent.
 4. ng/kg = nanograms per kilogram.
 5. Surface Dioxin TEQ west of sample points was extrapolated to an assumed constant of 2.0 ng/kg.
 6. Analysis extent has been clipped to the upshore extent of dredge feasibility. Dredge boundaries near the shore were generally determined by projection of a 3:1 horizontal to vertical slope down from the shoreline inflection point to the required dredge depth. ENR boundaries near the shore were determined by the point where the shore slope transitions to less than a 5:1 horizontal to vertical slope.
 7. Sample concentrations were log-normalized prior to conducting interpolation because of a positively skewed histogram indicating the presence of a few very large concentrations.
 8. IDW parameters: Power=1, 200-ft x 100-ft elliptical search neighborhood at 155°, minimum samples=1, smoothing factor=0.5.

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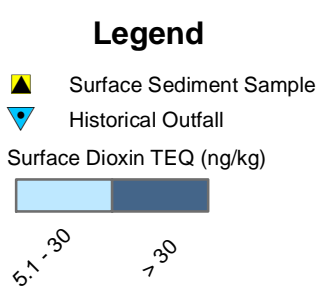
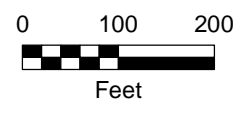
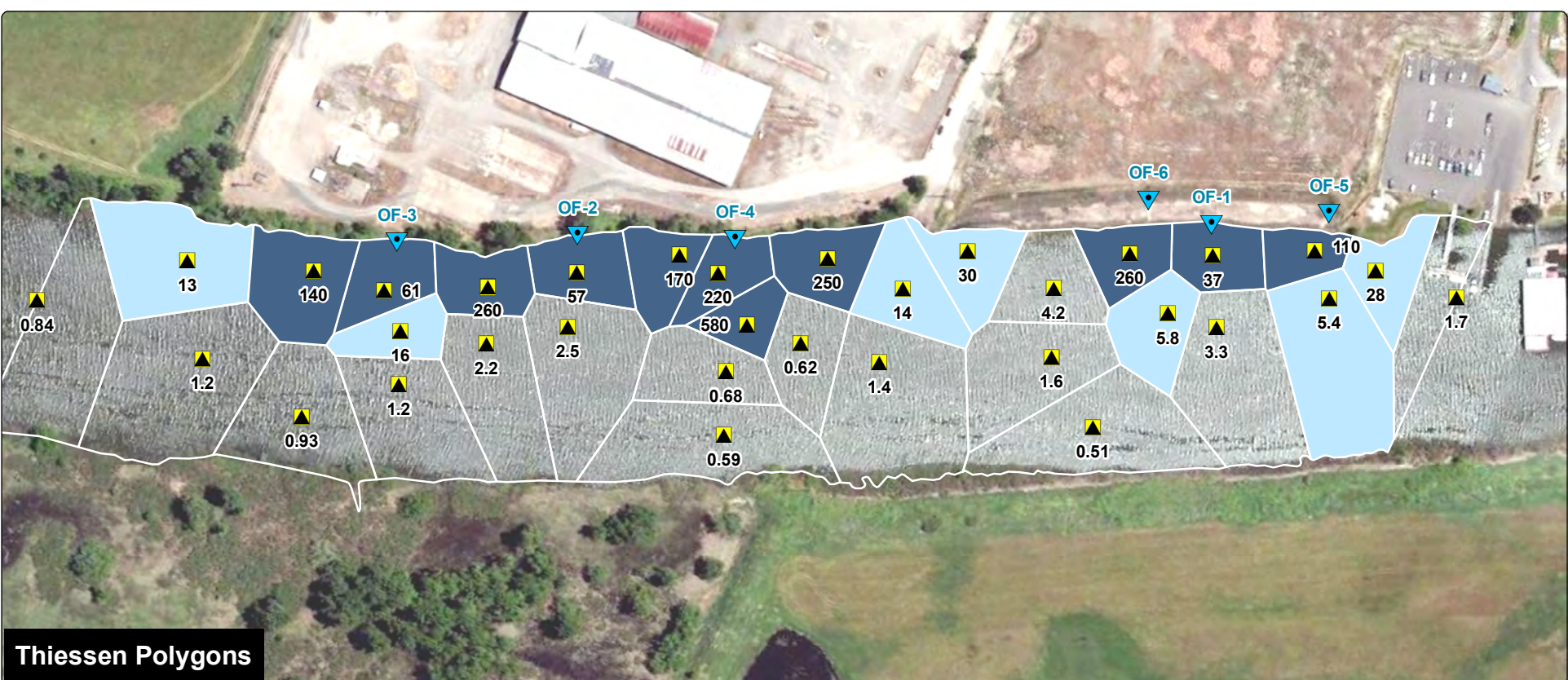


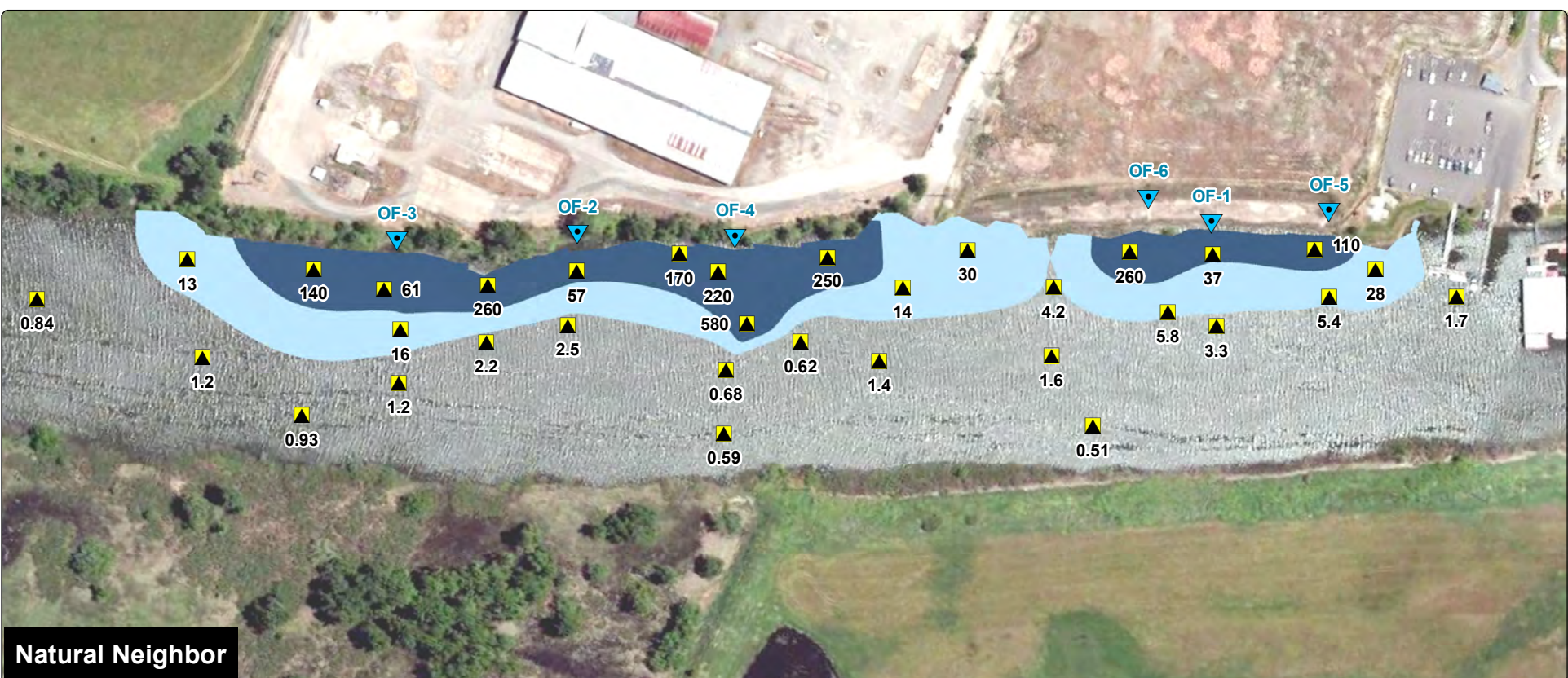
Figure 2
DISTRIBUTION OF DIOXIN IN SEDIMENT
Evaluation of Parameter Settings using
IDW Interpolation with 100-ft x 200-ft
Elliptical Search Neighborhood
Former PWT Site
Ridgefield, Washington



Path: X:\9003.01 Port of Ridgefield\40 Projects\06 Lake River Pre-Design\Report\Appendix\Fig3_Evaluation of Interpolation Methodology - Thiessen Polygons, Natural Neighbor, and IDW.mxd
 Approved By: mmovak
 Produced By: rmaroon
 Print Date: 5/1/2013
 Project: 9003.01-40/06



Thiessen Polygons



Natural Neighbor



IDW p=1, 200-ft x 100-ft, elliptical neighborhood, smoothed

Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps

- Notes:
1. ENR = Enhanced Natural Recovery.
 2. IDW = Inverse Distance Weighted.
 3. TEQ = Toxicity Equivalent.
 4. ng/kg = nanograms per kilogram.
 5. Dioxin TEQ values west of sampling extent were extrapolated to an assumed constant of 2.0 ng/kg.
 6. Analysis extent has been clipped to the upshore extent of dredge feasibility. Dredge boundaries near the shore were generally determined by projection of a 3:1 horizontal to vertical slope down from the shoreline inflection point to the required dredge depth. ENR boundaries near the shore were determined by the point where the shore slope transitions to less than a 5:1 horizontal to vertical slope.
 7. Sample concentrations were log-normalized prior to conducting interpolation because of a positively skewed histogram indicating the presence of a few very large concentrations.
 8. IDW parameters: Power=1, 200-ft x 100-ft elliptical search neighborhood at 155°, minimum samples=1, smoothing factor=0.5.


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Legend




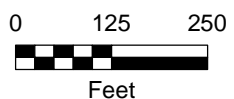
-  Surface Sediment Sample
-  Historical Outfall
- Surface Dioxin TEQ (ng/kg)
- 
- 5.1 - 30
- > 30

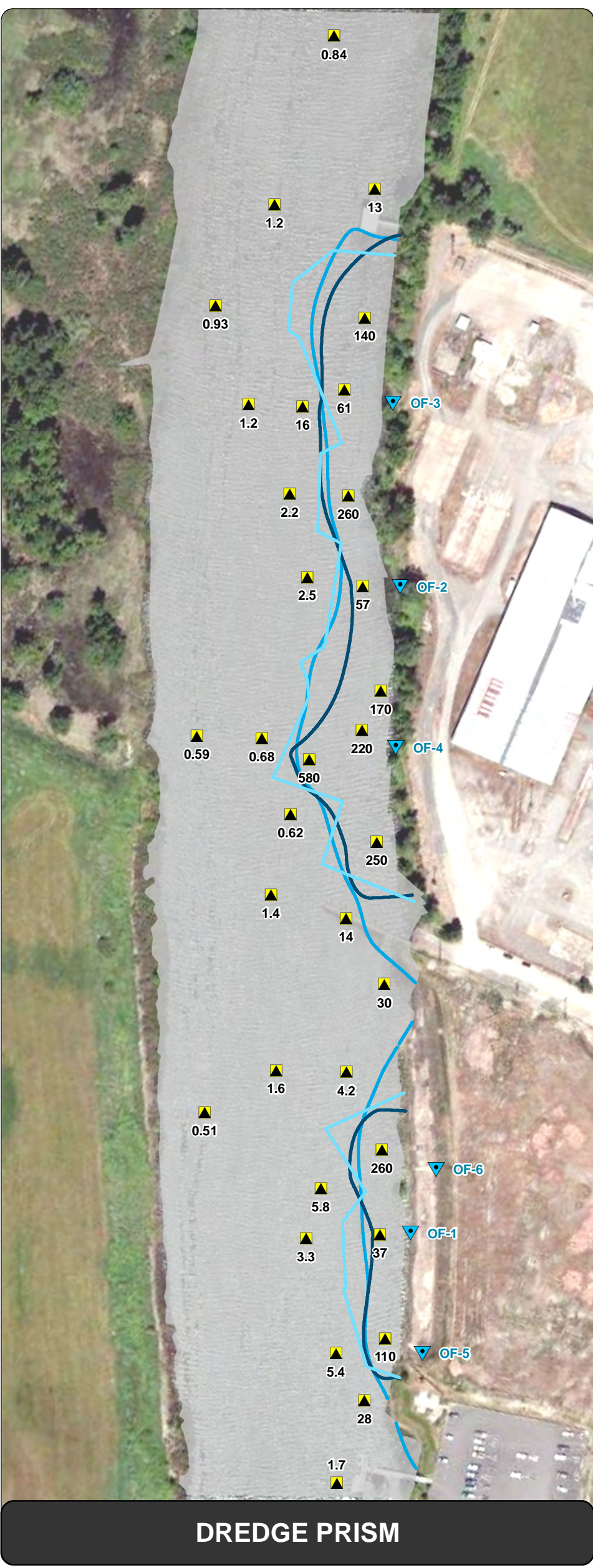
Figure 3
DISTRIBUTION OF DIOXIN IN SEDIMENT
Evaluation of Interpolation Methodology —
Thiessen Polygons, Natural Neighbor & IDW

Former PWT Site
 Ridgefield, Washington

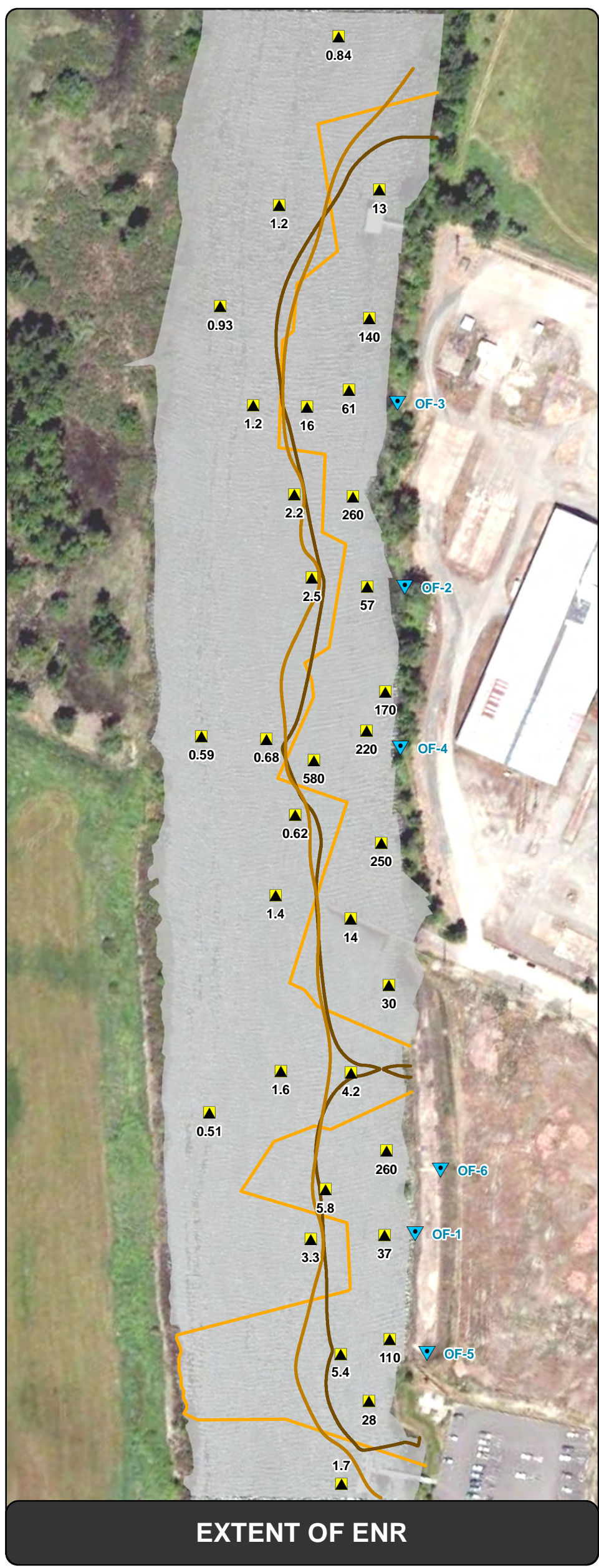


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Path: X:\9003.01 Port of Ridgefield\40P\Projects\06\Lake River Pre-Design\Report\Appendix\Fig4_Dredge Prism and ENR Delineation_Comparison of Extents based on Various Interpolation Methods.mxd
 Print Date: 5/1/2013
 Approved By: mmovak
 Produced By: rmaroon
 Project: 9003.01-40/06



DREDGE PRISM



EXTENT OF ENR

Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps

- Notes:
1. IDW = inverse distance weighted.
 2. TEQ = toxicity equivalent.
 3. ng/kg = nanograms per kilogram.
 4. Surface Dioxin TEQ west of sample points was extrapolated to an assumed constant of 2.0 ng/kg.
 5. Analysis extent has been clipped to the upshore extent of dredge feasibility. Dredge boundaries near the shore were generally determined by projection of a 3:1 horizontal to vertical slope down from the shoreline inflection point to the required dredge depth. ENR boundaries near the shore were determined by the point where the shore slope transitions to less than a 5:1 horizontal to vertical slope.
 6. Sample concentrations were log-normalized prior to conducting interpolation because of a positively skewed histogram indicating the presence of a few very large concentrations.
 7. IDW parameters: Power=1, 200-ft x 100-ft elliptical search neighborhood at 155°, minimum samples=1, smoothing factor=0.5.


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Legend









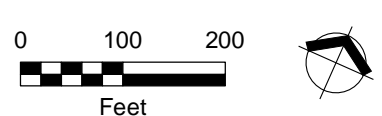
 Surface Sediment Sample	 Historical Outfall
Dredge Boundaries	
 Natural Neighbor	 Natural Neighbor
 Inverse Distance Weighted	 Inverse Distance Weighted
 Thiessen Polygons	 Thiessen Polygons

Figure 4
DREDGE PRISM AND ENR DELINEATION
Comparison of Extents based on Various Interpolation Methods
 Former PWT Site
 Ridgefield, Washington



Path: X:\9003.01 Port of Ridgefield\40 Projects\06 Lake River Pre-Design\Report\Appendix\Figs_5_Post-Remedy Distribution of Dioxin in Sediment Before ENR Treatment.mxd

Print Date: 5/2/2013

Approved By: mmovak

Produced By: rmaroon

Project: 9003.01-40/06



Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online/Bing Maps

- Notes:
1. ENR = Enhanced Natural Recovery.
 2. IDW = Inverse Distance Weighted.
 3. TEQ = Toxicity Equivalent.
 4. ng/kg = nanograms per kilogram.
 5. Analysis extent has been clipped to the upshore extent of dredge feasibility plus 20 feet bankward. Dredge boundaries near the shore were generally determined by projection of a 3:1 horizontal to vertical slope down from the shoreline inflection point to the required dredge depth. ENR boundaries near the shore were determined by the point where the shore slope transitions to less than a 5:1 horizontal to vertical slope.
 6. Post-remedy concentrations were log-normalized prior to conducting interpolation to maintain consistent methodology with the interpolation of the pre-remedy surface.
 7. IDW parameters: Power=1, 200-ft x 100-ft elliptical search neighborhood at 155°, minimum samples=1, smoothing factor=0.5.

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Figure 5
Post-Remedy Distribution
of Dioxin in Sediment
before ENR Treatment
 Former PWT Site
 Ridgefield, Washington

Legend

- ▲ Surface Sediment Sample
- ▼ Historical Outfall

Surface Dioxin TEQ (ng/kg)

5.1 - 30 > 30

0 100 200

Feet