INDEPENDENT CLEANUP PATHWAY REPORT

Kenton Foundry (Former) and Adjoining Railroad Spur (Former) Properties

650-668 North Tillamook Street

Portland, Oregon

ECSI #5758

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ACRONYMS AND ABBREVIATIONS

µg/kg	micrograms per kilogram
µg/SF	micrograms per square foot
ACM	asbestos-containing materials
Alpha	Alpha Environmental Services, Inc.
AMEC	AMEC Environment & Infrastructure, Inc.
BES	City of Portland Bureau of Environmental Services
bgs	below ground surface
City	City of Portland
CSO	combined sewer overflow
DEQ	Oregon Department of Environmental Quality
ECSI	Environmental Cleanup Site Information
EPA	United States Environmental Protection Agency
ESA	Environmental Site Assessment
°F	degrees Fahrenheit
ICP	Independent Cleanup Pathway
IRP	Interstate Renovation Project
JSCS	Portland Harbor Joint Source Control Strategy
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
msl	mean sea level
OSHA	U.S. Occupational Safety and Health Administration
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PWB	City of Portland Water Bureau
RBCs	Risk-Based Concentrations
RCRA	Resource Conservation and Recovery Act
Site	Kenton Foundry (Former) property and adjoining Railroad Spur (Former) property located at 650-668 North Tillamook Street in Portland, Oregon
SLVs	Screening Level Values
SVOC	semi-volatile organic compound
TPH	total petroleum hydrocarbons
TSCA	Toxics Substances Control Act
UST	underground storage tank
VOCs	volatile organic compounds

INDEPENDENT CLEANUP PATHWAY REPORT
Kenton Foundry (Former) and
Adjoining Railroad Spur (Former) Properties
Portland, Oregon

1.0 INTRODUCTION

This Independent Cleanup Pathway (ICP) Report documents independent investigation and remediation activities associated with redevelopment of the property located at 650-668 North Tillamook Street in Portland, Oregon (Figure 1). The subject property (hereafter referred to as the "Site") comprises the Kenton Foundry (Former) property and a portion of an adjoining former railroad spur area.

The Site is being redeveloped by the City of Portland Water Bureau (PWB) as part of the Interstate Renovation Project (IRP), which includes expansion and improvement of the PWB's Interstate Maintenance Facility. The first phase of the IRP development is currently underway; at the Site work has included removal of the onsite stormwater conveyance system, excavation and removal of at least the top 5.5 feet of soil across the Site, construction of a new 28,000-square foot building (a portion of which is located on the Site), and construction of Site stormwater infiltration facilities. The building will house staff offices and public meeting areas, craft workshops, and a materials and warehouse supplies storage area.

This report summarizes results of environmental investigations conducted at the Site; describes demolition and environmental remediation activities conducted to prepare the Site for redevelopment; documents management and disposal of waste generated during demolition and remediation activities; describes confirmation soil sampling procedures and results; and presents a conceptual site model and risk assessment to evaluate residual risk for the Site and evaluate current and likely future pathways for remaining contaminants at the Site to have a potentially adverse impact on the Willamette River.

Information presented in this report demonstrates that:

- Residual contaminant concentrations in Site soils do not pose unacceptable risks to human health or the environment.
- Significant groundwater contamination is not present at the Site.
- The Site does not represent a potential significant current or future source of contamination to the Willamette River.

- A Source Control Decision and No Further Action determination for the Site is warranted from the Oregon Department of Environmental Quality (DEQ) Cleanup Program.

2.0 SITE DESCRIPTION AND HISTORY

The Site is comprised of the following areas:

- The Kenton Foundry (Former) property with an address of 650-668 North Tillamook Street (tax lot 1N1E27CA 08900). This portion of the Site is 0.39 acre in size.
- A portion of a former railroad spur property (tax lot 1N1E27CD 00100) located adjacent to and south of the Kenton Foundry (Former) property. This portion of the Site is approximately 0.17 acre in size.

2.1 KENTON FOUNDRY (FORMER) SITE HISTORY

PWB acquired the Kenton Foundry (Former) property in May 2012 to expand the Interstate Maintenance Facility. The property originally was developed in the early 1920s and has housed a variety of commercial and industrial operations, including automotive operations, a tool and bit forge, a paint store, and most recently the Kenton Foundry. Foundry activities were suspended in 1997, and the former foundry remained inactive until the property was acquired by PWB. PWB has not conducted any operations on the property other than characterizing the nature and extent of contamination, removing contaminated materials, preparing the property for redevelopment, and redeveloping the property. Prior to the conduct of activities described herein, structures at the property included the foundry building, a small chemical storage shed, a separate office building, a large storage shed, and a covered storage area between the foundry building and large storage shed (Figure 2).

When PWB acquired the Kenton Foundry (Former) property, one stormwater catch basin was located near the center of the property, and a stormwater conveyance system connected the catch basin to a City of Portland (City) stormwater line under North Tillamook Street. The North Tillamook line historically discharged to the Willamette River via Outfall 43. In 2011, as part of the Combined Sewer Overflow (CSO) Abatement project and prior to City acquisition of the property, the City diverted the North Tillamook line to the Columbia Boulevard Wastewater Treatment Plant via the new East Side Tunnel. The layout of the property at the time of the PWB's acquisition, including approximate location of the on-site stormwater conveyance system, is shown on Figure 2. A record of this configuration is contained in a plumbing permit dated February 16, 1971 (see Appendix A).

2.2 RAILROAD SPUR PROPERTY (FORMER) SITE HISTORY

PWB acquired tax lot 1N1E27CD 00100 (i.e., the adjacent portion of the former railroad spur property) in March 1989. Railroad tracks were first constructed on the property some time prior to 1924. The only known property use prior to PWB's acquisition of the property was as a railroad spur. Historical records indicate that a platform, affiliated with historical operations at the adjacent Kenton Foundry (Former) property, was present in 1950 (see Appendix B). Aerial photographs indicate that the platform was partially removed by 1990, and completely removed by 2001. The platform presumably was used for loading/unloading rail cars. Following acquisition of the property by PWB in 1989, the railroad tracks were removed, and the area was paved with asphalt. Various materials used in PWB operations (e.g., pipes are being stored in the area in a 2001 aerial photograph) were stored on the property thereafter, until recent IRP construction activities were initiated.

2.3 REGULATORY HISTORY

The Kenton Foundry (Former) Property was entered into the DEQ's voluntary cleanup program in 2012, shortly after PWB's acquisition of the property (BES, 2012). The property was listed by the DEQ on its Environmental Cleanup Site Information (ECSI) database in 2012. Due to the presence of polychlorinated biphenyls (PCBs) in soil on portions of the Railroad Spur (Former) Property adjacent to the Foundry Property, and the schedule for excavation and redevelopment in both areas, the City decided to address remediation of the two properties together under one ECSI listing.

In addition, due to the concentrations of PCBs in the railroad spur portion of the Site, some soil removed from this area was subject to management and disposal under the Toxic Substances Control Act (TSCA) and reporting to the United States Environmental Protection Agency (EPA).

2.4 PREVIOUS INVESTIGATIONS

Multiple phases of environmental investigation have been completed at the Site, the first of which was performed by the City in September 2010. The investigations completed at the Site and their findings are summarized in Section 4.0.

3.0 ENVIRONMENTAL SETTING

The Site is located in an industrial area on the east side of the Willamette River, approximately 0.2 miles from the river at roughly River Mile 11.4. This section presents a brief summary of

environmental conditions at the Site, including climate, topography, surface water hydrology, geology, and hydrogeology.

3.1 CLIMATE INFORMATION

The average annual precipitation for the City is 36.0 inches. Annual average low and high temperatures are 45.7 degrees Fahrenheit (°F) and 63.3°F, respectively.[1]

3.2 TOPOGRAPHY

The elevation of the Site is approximately 57 feet above mean sea level (msl) and is flat. The land surface in the Site vicinity slopes gently upward toward the north and south. To the west, the land surface slopes down toward the Willamette River, which is located approximately 0.2 miles southwest of the Site. To the east, the land surface slopes upward toward a terrace with an elevation of approximately 140 feet above msl.

3.3 SURFACE WATER HYDROLOGY

Prior to the start of IRP construction activities, most of the Site was covered by impervious surfaces (e.g., buildings and asphalt pavement). At the time of PWB acquisition, the Kenton Foundry (Former) building roof drains and a single catch basin were connected to a City stormwater line under North Tillamook Street that had been routed to the City's combined sewer system. Unpaved areas were located south of the eastern half of the foundry building, and in the southeast corner of the property. It is presumed that precipitation infiltrated naturally in these areas.

The Railroad Spur (Former) property was completely paved with asphalt prior to the start of IRP construction activities. There is no onsite stormwater conveyance on this property; surface water flowed off of the property to the south into catch basins affiliated with the PWB Interstate Maintenance Facility stormwater management system. These Interstate Maintenance Facility catch basins conveyed stormwater east to a City storm line located under North Kerby Avenue. As with the storm line under North Tillamook Street, this line discharges to the Columbia Boulevard Wastewater Treatment Plant via the East Side CSO tunnel.

3.4 REGIONAL AND SITE GEOLOGY

This section describes the regional geologic setting and the local geology at the Site.

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[1] http://www.usclimatedata.com

3.4.1 Regional Geology

The Site is located within a geologic province known as the Portland Basin, which marks the northern terminus of the Willamette Lowland geologic province. Within the Portland Basin, Columbia River Basalt units lie more than 1,000 feet below the surface.

Starting during the Miocene and continuing through the Pliocene, the basin was filled by sediments of the ancestral Columbia and Willamette rivers. Named the Troutdale Formation, these deposits can be divided into two general parts: a lower gravel section containing pebbles and cobbles that were derived from the Columbia Basin and the Okanogan Highlands, and an upper section that contains vitric volcanic glass (hyaloclastic) sands. The hyaloclastic sands owe their origin to Cascade Range Simcoe Volcanics flowing into the Columbia River, explosively quenching, and then being redeposited downstream in the Portland Basin as sand. Deposition of the Troutdale Formation was followed by a period of Boring Lava volcanism 2.6 to 1.3 million years ago. This volcanism was associated with faulting and structural deformation of the Troutdale Formation and further depression of the Portland Basin.

Lastly, as the glacial Lake Missoula catastrophic floods burst out of the Columbia River Gorge 12,700 to 15,300 years ago, the waters ponded in the Portland Basin. Backwaters caused the deposition of well-sorted sand, clay, and gravel.

3.4.2 Site Geology

Subsurface soils at the Site consist primarily of fine-grained sands and silty sands with occasional gravel. Historical evidence (a 1909 Sanborn map of the Site indicates that the Site was a “deep gully partially filled with water”) indicates that subsurface soils underlying the Site consist of fill material placed sometime after 1909 during the Site’s original development.

3.5 HYDROGEOLOGY

Groundwater was encountered in Site soil borings at depths ranging from 19 feet to 32 feet below ground surface (bgs). Groundwater is presumed to flow to the west, toward the Willamette River.

4.0 PRE-CLEANUP SITE INVESTIGATIONS

4.1 ENVIRONMENTAL INVESTIGATIONS

Before acquiring the Kenton Foundry (Former) Property, PWB conducted a Phase I Environmental Site Assessment (ESA) in August 2010 (Northwest Geotech, Inc., 2010) and a subsequent

Phase II ESA in September 2010 (AMEC, 2011). Phase II ESA investigations included collection of surface and subsurface soil samples, groundwater samples, and sediment from the stormwater catch basin on the property. After acquiring the Kenton Foundry (Former) Property, PWB conducted additional investigation on both the Kenton Foundry (Former) and Railroad Spur (Former) properties between May 2012 and January 2013 to supplement the data collected during the Phase II ESA.

Supplemental investigations were needed to:

- Identify and delineate areas where targeted removal of contaminated soil was warranted prior to preparing the Site for redevelopment; and
- Characterize soils slated for removal during anticipated Site excavation and grading in order to assess appropriate disposal methods.

To achieve these objectives, PWB completed the following investigations relevant to the Site. Other investigations were conducted on the larger IRP site; IRP investigations which included data relevant to the Site are also listed below. Sampling locations affiliated with Site investigations conducted before remediation are shown on Figure 3; laboratory analytical data are summarized in Tables 1 through 5 (soil) and 6 through 10 (groundwater).

- **September 2010:** AMEC Environment & Infrastructure, Inc. (AMEC) collected soil samples on behalf of the City from 13 locations at the Kenton Foundry (Former) Property (B-1 through B-10 and D1, D2 [sediment located on top of concrete floor slab in chemical storage shed], and D3). AMEC also collected groundwater samples from three locations (B-5, B-6, and B-7), and a catch basin solids sample from the only catch basin on the Kenton Foundry (Former) Property.
- **January 2012:** AMEC collected soil samples across the Interstate Renovation Property, including nine locations related to the Site. Three soil samples were collected on the Railroad Spur (Former) Property (SB-16, SB-18, and SB-22). Six soil samples also were collected east of the Kenton Foundry (Former) Property (SB-23 through SB-26, SB-35, and SB-36).
- **May 2012:** AMEC collected soil samples from nine Kenton Foundry (Former) Property locations (B-11 through B-15 and B-18 through B-21) to fill Phase II ESA data gaps.
- **May – July 2012:** The City conducted a regulated building materials and residual waste survey for demolition of structures on the Kenton Foundry (Former) Property and preparation of the property for redevelopment (GeoDesign, 2013). Because the City planned to remove all structures and equipment from the property, the purpose of the survey was to identify any abatement and/or special handling requirements in advance of demolition and redevelopment activities.

- **November 2012:** AMEC collected soil samples from 25 Kenton Foundry (Former) Property locations (B-22 through B-46), and two Railroad Spur (Former) Property locations (B-48 and B-49).
- **January 2013:** AMEC collected soil samples from six Kenton Foundry (Former) Property locations (B-53, B-54, B-57, B-63, B-64, and B-65), and 10 Railroad Spur (Former) Property and vicinity locations (B-50 through B-52, B-55, B-56, and B-58 through B-62).

The above environmental investigations identified contamination in soil exceeding potentially applicable screening values. These screening value exceedances are summarized below, indicated in Tables 1 through 5, and illustrated in Figure 6. Soil testing data were used in developing a soil cleanup plan for the Site. This plan is described in Section 5.0. In Section 9.0, the results of a post-cleanup residual risk evaluation are presented.

Results of the screening level comparison identified the following findings.

- **Total PCBs:** Total PCBs were detected at concentrations exceeding the occupational worker direct contact RBC (560 micrograms per kilogram [µg/kg]) in 37 soil samples (Table 1). PCBs were detected at or above the construction worker RBC (4,400 µg/kg) in 24 soil samples. The majority of soil samples with RBC exceedances were collected in the depth interval 0 to 1.5 feet bgs. Approximately one-third of the soil samples in which PCBs exceeded the occupational or construction worker RBCs were collected in the depth interval 1.5 to 3 feet bgs. Two soil samples collected in the depth interval 3 to 5 feet bgs exceeded the occupational or construction worker RBCs for PCBs. A sediment sample collected from the stormwater catch basin on the Site contained 562 µg/kg total PCBs, which exceeds the Portland Harbor Joint Source Control Strategy (JSCS) screening level value (SLV) of 0.39 µg/kg.
- **Metals:** Arsenic, lead, and mercury were the only metals detected above the DEQ-published background levels and RBCs (Table 2). Arsenic was detected at concentrations exceeding the regional background level established by the DEQ (8.8 milligrams per kilogram [mg/kg]) in four soil samples. The DEQ background concentration is higher than the occupational RBC; all four samples were below the construction worker RBC. No soil sample containing arsenic at a concentration exceeding its regional background level was collected at a depth of greater than 2 feet bgs. Lead was detected at concentrations exceeding its occupational direct contact and construction worker RBCs (both 800 mg/kg) in 10 soil samples. No soil sample containing lead at a concentration exceeding potentially applicable RBCs was collected at a depth of greater than 2 feet bgs. Mercury was detected above the construction worker RBC (93 mg/kg) in nine soil samples. Mercury was detected at concentrations exceeding its occupational worker direct contact RBC (310 mg/kg) in six soil samples. Each mercury RBC exceedance was identified in soil samples collected at a maximum depth of 2 feet bgs.

Three soil/sediment sampling locations (B2, D2, and B-31) yielded leachable lead at a concentration exceeding the Resource Conservation and Recovery Act (RCRA) toxicity characteristic hazardous waste standard of 5 milligrams per liter (mg/L). These three samples were collected at depths no greater than 1.5 feet bgs.

The CB sediment sample exceeded JSCS SLVs for arsenic, cadmium, lead, mercury, selenium, silver, and zinc. The catch basin sediment sample also was analyzed for leachable lead, with a result of 7.03 mg/L, exceeding the RCRA hazardous waste standard of 5 mg/L.

- **Semivolatile organic compounds (SVOCs):** SVOCs were detected at concentrations exceeding occupational worker and/or construction worker RBCs as follows (Table 3):
  - Benzo(a)pyrene was detected at concentrations exceeding the occupational worker direct contact RBC (270 µg/kg) in six samples collected at a maximum depth of 1.5 feet bgs. Benzo(a)pyrene was detected above the construction worker RBC (21,000 µg/kg) in one sample collected within 1.5 feet bgs.
  - Benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene were detected at concentrations exceeding the occupational worker direct contact RBCs in one soil sample (D3) collected at a depth of 0.5 feet bgs.
  - Indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene, and bis(2-ethylhexyl)phthalate were detected above the JSCS SLVs in the catch basin sediment sample.
- **VOCs:** VOCs were not detected in soil or sediment samples at concentrations exceeding occupational or construction worker RBCs, or JSCS SLVs (Table 4).
- **Total petroleum hydrocarbons (TPH):** Diesel-range hydrocarbons (Table 5) were detected at a concentration exceeding the construction worker direct contact RBC (4,600 mg/kg) in five soil samples (B6 7.5-8.5, PFE-9', PWS-7', PWW-7', and Tank Bottom), all of which were related to the release associated with a diesel underground storage tank (UST) discovered during Site demolition activities (see Section 9.3). In addition to detections of diesel-range hydrocarbons exceeding RBCs, several relatively high concentrations of oil-range hydrocarbons were detected in seven soil/sediment samples (B2 0-1.5, B3 0-2, B3 3-4, B5 0-1.5, B8 0-1.5, CB, and D2). RBCs have not been established for oil-range hydrocarbons.

As described in Section 9.0, all Site soil within approximately 5.5 feet of the ground surface was excavated during Site redevelopment. As such, nearly all soil with exceedances of the applicable RBCs represented by the sampling data described above has been removed from the Site. Collection and results of soil confirmation samples are discussed in Section 9.0, and the results of a post-cleanup residual risk assessment are provided in Section 11.0.

4.2 GROUNDWATER INVESTIGATION SAMPLING FINDINGS

During investigation activities that preceded Site remediation/construction activities, three groundwater samples were collected at the Site from temporary direct-push borings B5, B6, and B7 (Figure 3). Groundwater was encountered at depths ranging from 19 to 32 feet bgs. Groundwater samples collected from these three borings were analyzed for PCBs, dissolved metals, VOCs, SVOCs, and TPH. It should be noted that due to the groundwater sampling method via direct-push (AMEC, 2011) and the use of total versus dissolved concentrations for most analytes, groundwater analytical results likely are biased high. Tables 6 through 10 show groundwater sample analytical results compared with potentially applicable RBCs, and indicate that no analyte concentrations exceeding potentially applicable RBCs were detected. A risk evaluation for groundwater is included in Section 11.0.

4.3 REGULATED BUILDING MATERIAL SAMPLING FINDINGS

The City contracted with GeoDesign, Inc., to conduct regulated building material sampling at the Site. The results of the regulated building material sampling are presented in a separate report (GeoDesign, 2013) and are summarized below.

4.3.1 Regulated Building Material Survey

Asbestos-containing materials (ACM) at the Site included floor tile, mastics, window putty, roofing patch material, chimney sealants, and Transite panels. Metalbestos chimneys were assumed to contain asbestos. In addition, Apex (the general contractor's health and safety consultant) collected samples of white insulation debris, which was determined to contain asbestos (Konell, 2013).

Results of the lead-based paint survey revealed that lead-based paint and other paints or coatings with lower concentrations of lead were present in the interior or exterior of the Site structures. The paints and coatings were mostly observed to be in poor to fair condition.

Mercury-containing building components, consisting of older thermostats and fluorescent light tubes, were present in the structures. Fluorescent light tubes, both intact and broken, were observed in the yard area of the Site. Fluorescent light fixture ballasts were observed at the Site in the structures as well as in the yard area. The ballasts were not labeled with regard to PCB content and were considered to be PCB containing. Two ballasts within the office were observed to be leaking.

4.3.2 Surface Wipe Samples for Lead and PCBs

Fourteen wipe samples were collected for analysis of lead. Thirteen of the fourteen wipe samples from surfaces of various equipment throughout the facility were reported to be contaminated with lead above the U.S. Occupational Safety and Health Administration (OSHA) housekeeping limit of 200 micrograms per square foot (µg/SF) for surfaces routinely contacted by workers.

A total of 32 wipe samples were collected for analysis of PCBs. Five of the 32 wipe samples collected from surfaces of various equipment located throughout the facility were reported to be contaminated with PCBs above the TSCA Cleanup Standard of 10 micrograms per 100 square centimeters (µg/100cm^2). The equipment reportedly containing surface contamination above the standard was limited to the storage building or the area just outside of this building.

4.3.3 Bulk Sample Analysis of PCBs

Four concrete core samples were collected from the Site for analysis of PCBs: two from the floors of the foundry building, one from a covered storage area between the foundry building and large storage shed, and one from the large storage building floor. One bulk sample was collected from the office building roof. The four concrete floor core samples and roofing sample were reported to contain PCBs at concentrations ranging from 0.11 to 21.36 mg/kg, which are below the TSCA hazardous waste limit of 50 mg/kg. The highest concentration was reported in the concrete core sample collected in the covered storage area. The concrete floors and roofing material were not required to be disposed under TSCA requirements; however, they warranted disposal as miscellaneous non-TSCA PCB debris at a facility permitted, licensed, or registered by the State of Oregon to manage non-hazardous wastes subject to TSCA requirements.

4.3.4 Hazard Categorization of Bulk Wastes

The hazard categorization of the residual wastes observed at the Site (e.g., in unmarked drums, pails, foundry processing equipment, or in loose piles) determined that the liquid wastes were not considered hazardous wastes. Three batches of residual solid waste were considered hazardous wastes based on their lead content:

- A loose pile of material outside in the yard south of the office,
- Granular material inside abrasive blasting equipment, and
- Sediment on a concrete floor slab.

4.3.5 Geophysical Survey

The City contracted Locates Down Under to complete a geophysical survey of the Site. Based on the results of the survey, no evidence of undocumented USTs was observed in the Foundry yard or

the sidewalk adjacent to the Site. Despite the negative results from the geophysical survey, a heating oil UST was discovered during Site construction grading activities, as discussed in Section 9.3.

5.0 SITE CLEANUP PLAN

Based upon the results of soil/sediment/groundwater testing and the hazardous building materials and residual waste survey described in Section 4.0, a cleanup plan was developed and implemented for the Site. The cleanup plan included the following elements:

- Remove all ACM and other regulated building materials identified in Kenton Foundry (Former) Property buildings and equipment left in the buildings by the prior owner and dispose of the removed materials at the Waste Management Hillsboro Landfill located in Hillsboro, Oregon.
- Remove several batches of bulk wastes (a loose pile of material south of the office [the G area], a granular material inside abrasive blasting equipment located within the foundry building [the K area], and sediment on the concrete floor slab of the chemical storage shed [the D2 area]) located on the Kenton Foundry (Former) Property that testing indicated were characteristic hazardous wastes (waste code D008) and dispose the removed material at the Chemical Waste Management Landfill located in Arlington, Oregon. These locations are shown on Figure 7.
- Dispose of all foundry building demolition debris at the Waste Management Hillsboro Landfill.
- Clean the Site catch basin and all piping between the catch basin and the City storm line on North Tillamook Street. The plan also included installing a catch basin filter in the catch basin as an interim best management practice pending redevelopment and eventual removal of the Site stormwater conveyance system as part of Site redevelopment activities.
- Excavate soil determined to be a characteristic hazardous waste in two areas on the Kenton Foundry (Former) Property (the B-2 and B-31 areas) and dispose the removed soil at the Chemical Waste Management Landfill.
- Excavate and remove soil on the adjacent Railroad Spur (Former) Property that was determined to be PCB remediation waste to a depth of 5 feet in an area 10 feet in diameter centered about boring B-48, and to a depth of 1.5 feet over an area of approximately 1,820 square feet, as indicated in Figures 4 and 7.
- Excavate soil from the following areas of the Site and dispose the soil at the Waste Management Hillsboro Landfill.

- Excavate and dispose soil from the southern half of the Foundry property to a depth of 3 feet bgs. The actual excavation extended to a depth of 5.5 feet for construction purposes.
- Excavate soil over an area of approximately 1,820 square feet and the area beneath the PCB remediation waste described above, and extending to a depth of 6 feet bgs in the western portion of the excavation, and a depth of 9 feet bgs in the eastern portion of the excavation. Removal of the additional soil in this area was completed for construction purposes and not for cleanup purposes.

6.0 SOIL HANDLING CLASSIFICATION

Results of the soil sampling investigations conducted at the Site were used to delineate areas requiring special material handling and disposal during construction activities. Soil sampling results were compared to applicable waste regulations to determine necessary handling and disposal protocols. Soil types were classified as follows.

- **RCRA Characteristic Hazardous Waste:** The RCRA hazardous waste criterion for lead was exceeded at two soil sample locations (B2 and B-31), one sediment sample location (D2), two bulk waste sample locations (sample sites G and K), and in a sediment sample (CB) collected in the Kenton Foundry (Former) Property catch basin. Thus, soil/sediment in these six areas was determined to be a characteristic hazardous waste based upon toxicity (waste code D008). These six areas were delineated as shown in Figure 7. Soil, sediment, and bulk waste removed from these areas was handled as RCRA characteristic hazardous waste, and disposed at the Chemical Waste Management Landfill located in Arlington, Oregon.
- **PCB Remediation Waste (PCBs greater than 50 mg/kg):** Soil sampling indicated the presence of PCBs at a concentration exceeding 50 mg/kg at sampling points B-48, B-57, B-58, and B-61. PCBs above 50 mg/kg were detected only in the depth interval 0 to 5 feet bgs at B-48, and 0 to 1.5 feet bgs elsewhere. This area of the Site was delineated as shown in Figure 7. Soil detected at a concentration above 50 mg/kg required disposal at the Chemical Waste Management Landfill located in Arlington, Oregon.
- **Contaminated Soil:** Due to the identification of widespread shallow (depths less than 3 feet bgs) contaminant concentrations greater than applicable RBCs, background metals values, and/or DEQ clean fill criteria, all excess Site soils generated during construction were managed as contaminated media. Screening values for clean fill were most recently published by the DEQ on March 17, 2013. Any soil containing concentrations exceeding DEQ clean fill criteria was disposed at the Waste Management Hillsboro Landfill located in Hillsboro, Oregon.

7.0 SUMMARY OF FOUNDRY PRE-CONSTRUCTION DEMOLITION ACTIVITIES

Foundry pre-construction demolition activities were initiated on January 28, 2013, and concluded on February 21, 2013. Demolition included the following activities:

- Asbestos abatement;
- Removal of universal waste, including equipment left in the building by the prior owner;
- Removal of characteristic hazardous wastes identified during the Kenton Foundry (Former) Property survey;
- Removal of the on-site stormwater conveyance system;
- Building demolition; and
- Capping of former stormwater and sanitary sewer connections from the site.

Asbestos abatement and universal waste removal were completed by either WasteXpress or Professional Minority Group. All wastes were disposed in accordance with state and federal regulations. A total of approximately 200 tons of building debris and other wastes generated during demolition activities were disposed at either the Waste Management Hillsboro Landfill or the Chemical Waste Management Landfill.

8.0 CONCEPTUAL SITE MODEL AND RISK EVALUATION

In order to evaluate whether further soil and/or groundwater cleanup is warranted at the Site, AMEC has completed a post-cleanup residual risk evaluation.

8.1 CONCEPTUAL SITE MODEL

The first step in completing the risk evaluation was development of a conceptual site model (CSM) for the Site. The CSM prepared for the Site is presented graphically as Figure 5. Details regarding CSM findings are provided in the subsections that follow.

8.2 ANALYSIS OF APPLICABLE SOIL RBCS

An evaluation of current and future land use indicates that the Site historically has been utilized for industrial use, and current redevelopment of the Site will lead to continued industrial land use. Furthermore, the Site and surrounding properties are zoned General Industrial 1. Based on Site zoning, only risk to occupational and construction/excavation worker receptors need be evaluated.

All soil within 3 feet of the ground surface has been removed. Therefore, no terrestrial ecological or human health receptor direct contact (ingestion, dermal contact, and particulate inhalation) with contamination in surface soils can occur. Furthermore, the entire surface of the Site has been capped. The vertical profile from the surface down currently consists of building or asphalt, underlain by a minimum of 5.5 feet of clean fill, underlain by demarcation fabric, underlain by Site soil.

Both the vapor intrusion into building and volatilization to outdoor air exposure pathways are considered complete for occupational receptors. Vapor intrusion into building RBCs are more conservative than volatilization to outdoor air RBCs; therefore, use of vapor intrusion into building RBC screening values also serves to conservatively evaluate the volatilization to outdoor air exposure pathway. Direct contact RBCs for construction workers are appropriate for soil within 15 feet of the ground surface. Soil RBCs for construction workers are more conservative than soil RBCs for excavation workers; therefore, use of construction worker RBCs as soil screening values is also protective of excavation workers.

DEQ has evaluated background concentrations of metals in Oregon soil. Regional background metals concentrations are published in DEQ's "Development of Oregon Background Metals Concentrations in Soil" (DEQ, 2013a). These background values are appropriate screening criteria for metals in Site soil, and take precedence over soil RBCs for metals when RBCs are lower than background values.

Soil testing data representative of soils that remain at the Site are discussed in Section 9.0, including comparison to the RBCs identified as applicable at the Site.

8.2.1 Analysis of Applicable Groundwater RBCs

The City currently provides water to the Site and vicinity; therefore, use of groundwater for industrial or drinking purposes is not anticipated at the Site. Oregon Water Resources Department records indicate that three water supply wells historically were installed within Section 27, as described below.

1. An irrigation well 328 feet in depth, cased its entire length, with casing perforations from 141 to 238 feet bgs, is located approximately 1,800 feet north-northeast of the Site. The well was installed in 1952, and it is not known whether or not the well is still in use.
2. A domestic well 83 feet in depth cased its entire length is located at 832 North Russell Street, approximately 1,500 feet north-northwest of the Site. The well was installed in 1958 by Harry Williams. It is not known whether or not the well is still in use.

3. An industrial well 97.5 feet in depth cased its entire length is located at 1211 North Loring Street, approximately 2,000 feet northwest of the Site. The well was installed in 2008 by Portland Rent All Center, Inc. Based on its recent installation date, it is presumed to be currently in use.

Based on the records identified, it appears that groundwater use is not reasonably likely to occur within the locality of the facility for the Site, which is limited to the confines of the Site. Site investigations demonstrate that groundwater is not present within 15 feet of the ground surface, indicating that construction/excavation workers would not contact groundwater in excavations (AMEC, 2011). Therefore, the appropriate groundwater screening levels for human health at the Site are RBCs based on occupational worker exposure due to vapor intrusion into buildings. Vapor intrusion into building RBCs are more conservative than volatilization to outdoor air RBCs; therefore, use of vapor intrusion into building RBC screening values also serves to conservatively evaluate the volatilization to outdoor air exposure pathway. Furthermore, due to the depth of groundwater at the Site, no terrestrial ecological receptors will be exposed to groundwater.

It is unlikely that a complete route of exposure exists for contaminated groundwater to be transported offsite and reach potential receptors via the groundwater to surface water migration pathway (e.g., Willamette River) for the following reasons.

- Analytes detected in groundwater have low solubility in water, adsorb tightly to soil, and, therefore, do not significantly leach in aqueous soil systems.
- Only very low concentrations of various analytes were detected in Site groundwater and concentrations are considered biased high because of the drilling technology (direct-push) used to collect the samples.
- Available soil and groundwater data in areas of high PCB soil concentrations do not indicate potential cosolvents (i.e., VOCs or petroleum hydrocarbons) are present at concentrations that would facilitate the movement of PCBs in the subsurface through cosolvency effects or free product migration.
- Given the low solubility and sorption capacities of PCBs and other detected analytes, the ability of these analytes to be transported 0.2 miles in groundwater to the Willamette River in significant concentrations is extremely unlikely.

No analyte concentrations detected in the groundwater samples exceeded DEQ occupational RBCs for vapor intrusion into buildings. As volatilization to outdoor air RBCs are less conservative than vapor intrusion into building RBCs, it can be inferred that there is no unacceptable risk to human health via volatilization to outdoor air either.

9.0 SUMMARY OF REMEDIAL ACTION REMOVAL ACTIVITIES AND CONFIRMATION SAMPLING

Remedial action removal activities and confirmation sampling were conducted in multiple phases at the Site. Activities associated with each of these phases are summarized in the subsections that follow.

9.1 RCRA HAZARDOUS WASTE SOIL/SEDIMENT REMOVAL

RCRA hazardous waste was removed during both pre-construction activities and during remedial construction.

9.1.1 Pre-Construction RCRA Hazardous Waste Removal

On December 2, 2010, the City cleaned sediment from the Site catch basin and the Site stormwater system between the catch basin and the City storm line under North Tillamook Street. Cleaning was conducted in a manner to prevent release of wash water or sediment flushed from the system to the North Tillamook line. A total of 1,207 gallons of water/sediment was generated during these activities, and was disposed at the Chemical Waste Management Landfill located in Arlington, Oregon. Following the cleanout, the City conducted a video survey of the Site lateral line to verify that all sediment had been removed, and installed protective hay bales and a filter in the catch basin to control off-site migration of erodible soils to the Site stormwater system. The catch basin was cleaned out again by WasteXpress in July 2012 using a vacuum truck, and protective hay bales and filter were replaced as part of pre-building demolition waste disposal activities (GeoDesign, 2013). The Site stormwater conveyance system was removed in February 2013 as part of Site redevelopment activities.

Analysis of leachable lead in a sediment sample collected by AMEC in September 2010 from sample location D2 and two bulk material samples collected by WasteXpress in May 2012 from sample locations G and K (Figure 7) identified leachable lead above the RCRA toxicity characteristic hazardous waste standard of 5 mg/L. GeoDesign, Inc., subcontracted the removal of sediment/bulk material to WasteXpress in each of these three areas (GeoDesign, 2013). The material was transferred into a 55-gallon drum, and the drum containing the material was transported to the Chemical Waste Management Landfill located in Arlington, Oregon. No confirmation samples were collected following pre-construction removal activities as wastes were located atop asphalt or concrete surfaces. All visible waste from these areas was removed, leaving an asphalt or concrete surface free of sediment.

9.1.2 Construction-Phase RCRA Hazardous Waste Soil Removal

Analysis of leachable lead in soil samples collected from sample locations B-2 in September 2010 and B-31 in November 2012 (Figure 6) identified leachable lead above the RCRA toxicity characteristic hazardous waste standard of 5 mg/L. Excavation of the RCRA hazardous waste soil at these two locations was undertaken on February 22, 2013. The excavations were conducted within the areas shown on Figure 7, and extended to a minimum depth of 2 feet bgs. A total of 15.63 tons of soil contaminated with lead was excavated, and placed in roll-off boxes (Appendix C). On March 5, 2013, the roll-off boxes were transported to the Chemical Waste Management RCRA Subtitle C Landfill located in Arlington, Oregon.

Following excavation, the following confirmation soil samples were collected from the B-2 and B-31 areas (Figure 4):

- Two composite sidewall samples, one from each excavation, that consisted of four discrete samples, one from each of the four excavation sidewalls; and
- Two composite samples (one from the base of each excavation) that each consisted of five discrete samples.

All four confirmation soil samples were tested for lead using EPA Method 6020, and for leachable lead using EPA Methods 1311 and 6020. Lead was detected in all four confirmation soil samples at a maximum concentration of 127 mg/kg, well below the occupational direct contact RBC of 800 mg/kg (Table 2; Appendix D). Leachable lead was detected only in the sidewall composite sample collected from the B2 excavation. The detected leachable lead concentration (0.0565 mg/L) was well below the characteristic hazardous waste regulatory level for lead of 5.0 mg/L. Post-excavation soil sampling confirmed that all toxicity characteristic lead hazardous waste (D008 waste) was removed from these areas. In both RCRA hazardous waste areas, additional excavation was performed as part of general Site grading activities, and all soils were sampled to confirm that the RCRA hazardous waste areas were subsequently excavated and disposed off site.

9.2 PCB Remediation Waste (greater than 50 mg/kg)

Site soils containing PCBs at concentrations greater than 50 mg/kg were delineated on the Kenton Foundry (Former) Property near its southern boundary at boring location B-57, and on the Railroad Spur (Former) Property at boring locations B-48, B-57, B-58, and B-61 (Figure 3). Soil was excavated from this area as part of the Railroad Spur Soil Removal Action in 2013. Figure 7 illustrates the portion of the Railroad Spur (Former) Property cleanup that involved PCB remediation waste. PCB remediation waste extended to a maximum depth of 5 feet bgs. Because a portion of the soil removed as part of the Railroad Spur (Former) Property cleanup was

designated as contaminated soil, confirmation soil sampling associated with the Railroad Spur (Former) Property cleanup is described below in Section 9.4 below.

9.3 UST-RELATED SOIL SAMPLING FINDINGS

On March 1, 2013, a decommissioned diesel UST was discovered during excavation activities near the center of the Site. The location of the UST is shown in Figure 2. The UST had been decommissioned in place, as evidenced by the fact that it had been filled with soil. Upon discovery of the UST, AMEC conducted initial soil sampling and testing to screen for evidence of a release associated with the UST. A single soil sample designated as “Tank Bottom” was collected by AMEC from directly beneath the UST, at a depth of approximately 5.5 feet bgs, and was tested for diesel- and heavy oil-range hydrocarbons, VOCs, and polynuclear aromatic hydrocarbons (PAHs). The sum of diesel- and heavy oil-range hydrocarbons detected in the sample was 9,200 mg/kg. Various VOCs and PAHs also were detected in the soil sample. Testing of the “Tank Bottom” soil sample confirmed that the UST was the likely source of a release. The area where “Tank Bottom” was collected was later excavated, so these sample results are not representative of UST impacted soils remaining at the Site.

The UST was removed by Alpha Environmental Services, Inc. (Alpha), on March 4, 2013. Alpha also removed soil beneath the UST to a depth of 9 feet bgs. Petroleum-containing soil was transported to the Hillsboro Landfill for disposal. Following UST removal, Alpha and the City collected additional soil samples to characterize the nature, extent, and magnitude of the release associated with the UST. The results of this soil testing are summarized in Tables 1 through 5 and contained within Alpha’s report (Alpha, 2013). A copy of the Alpha report is included in Appendix E. The maximum diesel concentration remaining in Site soils below the UST is 29,000 mg/kg. Alpha concluded in its report that the remaining impacted soil does not appear to pose a substantial threat to human health or the environment. Groundwater data collected by AMEC indicate that Site groundwater has not been impacted by the UST (Section 4.3). The leaking UST file opened for this UST case (26-13-0349) was closed by the DEQ on June 25, 2013.

9.4 CONTAMINATED SOIL

The remainder of the Site soil was classified as nonhazardous; however, because concentrations of PCBs, lead, mercury, and/or selected PAHs generally exceeded DEQ occupational or construction worker direct contact RBCs or clean fill criteria, all soil was managed as solid waste. Areas and depths of contaminated soil removal for discrete areas of the Site are described below.

- In the southern half of the Kenton Foundry (Former) Property, soil-containing concentrations of PCBs above the occupational direct contact RBC were determined based upon soil sampling and testing to extend to a depth of up to 3 feet bgs. Benzo(a)pyrene and lead also were detected in these soils at concentrations exceeding occupational direct contact RBCs. The cleanup plan for the Kenton Foundry (Former) Property included the removal of these soils. Based upon the construction methodology selected by the contractor, soils were excavated across the entire Kenton Foundry (Former) Property to a depth of at least 5.5 feet bgs.
- Within the area of soil removal on the Railroad Spur (Former) Property, a portion of soil was managed as PCB Remediation Waste (see Section 9.2) and a portion as contaminated soil. Remedial goals in this area included removal of PCB Remediation Waste only; however, construction methodology dictated that excavation extend to a depth of 6 feet in the western portion of the excavation and 9 feet in the eastern portion of the excavation. Soil beneath PCB Remediation Waste soils were managed as contaminated soil, and were disposed at the RCRA Subtitle D Hillsboro Landfill.

9.4.1 Kenton Foundry (Former) Removal Activities and Confirmation Sampling

Construction grading on the Kenton Foundry (Former) Property was initiated on February 25, 2013, and completed on March 7, 2013. Limited additional excavation occurred on the Kenton Foundry (Former) Property through September 13, 2013. The entire Kenton Foundry (Former) Property was excavated to an approximate depth of at least 5.5 feet below original grade. The excavation was completed in multiple discrete areas, and confirmation soil sampling was designed to accommodate excavation methodology/phasing as shown on Figure 4. A total of approximately 4,905 tons of contaminated soil from the Kenton Foundry (Former) Property was disposed at the Hillsboro Landfill (Appendix C).

A total of 23 confirmation soil samples were collected to document soil conditions following construction grading. Confirmation soil samples were collected in sections from the excavation floor and sidewalls (Figure 4) and analyzed for PCBs, metals, and PAHs. Methods for sidewall and excavation base sampling are described below. Confirmation sample results are summarized in Tables 1, 2, and 3. Laboratory reports are provided in Appendix D.

Sidewall Samples

Eleven sidewall samples were collected from the Kenton Foundry (Former) Property construction grading excavation (Figure 4). Each sidewall sample was a composite of five discrete samples equally spaced over a length of excavation sidewall. The spacing of discrete sample locations varied depending on the length of the sidewall section being sampled. All sidewall samples were collected from a depth of 18 inches below original grade. This depth was selected because the

highest hazardous substance concentrations detected in soil on the Kenton Foundry (Former) Property typically were detected within the depth interval 0 to 18 inches below original grade.

Sidewall confirmation soil samples were analyzed for PCBs, PAHs, and eight RCRA metals. PCBs were detected in six of the sidewall samples at a maximum concentration of 0.229 mg/kg in sample SW-E-4 (Table 1). None of the sidewall confirmation soil samples yielded PCB concentrations exceeding the DEQ occupational direct contact RBC (0.56 mg/kg). Thus, sidewall confirmation samples confirm that soils adjoining the Kenton Foundry (Former) Property do not contain PCBs at a concentration that would pose a risk to human health given an industrial land use. PCBs were detected in one soil sample (SW-E-4) at a concentration (0.229 mg/kg) exceeding the DEQ clean fill criteria. Should excavation occur in the future in the SW-E-4 area, soil would require special handling if transported off-site for disposal.

PAHs were not detected in the 11 sidewall samples collected (Table 3). Metals were not detected at concentrations exceeding DEQ-published background concentrations for metals in soil (Table 2). Neither soil on adjoining properties nor Kenton Foundry (Former) Property soil poses a risk to human health, or would require special handling, based upon residual PAH or metal concentrations.

Excavation Base Samples

Twelve excavation base confirmation soil samples were collected, one each from the base of each discrete excavation grid section (Figure 4). All excavation base samples were collected at a depth of greater than 5 feet below the planned final grade. As a result, construction worker RBCs would apply. Each excavation base sample was a composite of discrete samples from five points evenly distributed across the excavation grid section. Excavation base confirmation soil samples were analyzed for PCBs, PAHs, and eight RCRA metals.

PCBs were detected in seven of the excavation base samples at a maximum concentration of 0.0598 mg/kg in sample 03072013_CS (Table 1). These sampling results indicate that remaining PCB concentrations are below DEQ's construction worker direct contact RBC of 4.4 mg/kg and DEQ's clean fill value for PCBs of 0.20 mg/kg. Thus, Kenton Foundry (Former) Property soils do not contain PCBs at a concentration that would pose a risk to human health given the current and anticipated future use of the Site. Further, excavated Site soils would not require special handling or disposal during future construction projects.

PAHs, including benzo(a)pyrene, benzo(b)fluoranthene, and benzo(g,h,i)perylene, were detected in only one of the 12 excavation base samples tested (Table 3). The concentrations detected were below both occupational direct contact RBCs and clean fill criteria. Metals were not detected at

concentrations exceeding regional background concentrations (Table 2). Based upon PAH and metals testing results, Kenton Foundry (Former) Property soils neither pose a risk to human health, nor would require special handling during future construction projects.

9.4.2 Railroad Spur (Former) Removal Activities and Confirmation Sampling

The Railroad Spur (Former) Property PCB-impacted soil removal action was initiated on March 4, 2013, and completed on March 8, 2013. Remediation activities in this area were summarized in an interim report submitted to DEQ (AMEC, 2014). A total of 819 tons of PCB-impacted soil was excavated and transported off-site for disposal. Soil in the depth interval from 0 to 5 feet bgs in the vicinity of boring location B-48 (Figure 7, and soil in the depth interval from 0 to 1.5 feet bgs in the rest of the excavation area, was transported to the Chemical Waste Management Arlington Landfill located in Arlington, Oregon, for disposal. The total depth of excavation on the Railroad Spur (Former) Property was 6 feet in approximately the western half, and 9 feet in approximately the eastern half, of the excavation (Figure 7).

Of the 819 tons of soil removed from the Railroad Spur (Former) Property, 387 tons was transported to the Chemical Waste Management Arlington Landfill and 432 tons was transported to the Waste Management Hillsboro Landfill in Hillsboro, Oregon.

In the days following the Railroad Spur (Former) Property excavation activities, additional soil was removed from an area of undisturbed soil between the Kenton Foundry and Railroad Spur excavation areas. As shown on Figure 7 (green hatched area), this area is located on the Railroad Spur (Former) Property outside of the area designated as containing PCB-impacted soil. The removal of soil in this area was a construction requirement, and was unrelated to the removal action. The depth of excavation in this area was 6 feet. Soil from this area was transported to the Hillsboro Landfill for disposal.

A total of 23 confirmation soil samples were collected to document post-removal action soil conditions. Confirmation soil sample locations and names are shown on Figure 4. Three basic confirmation sample collection methods were utilized for the removal action on the Railroad Spur (Former) Property. Each method is described below.

Discrete Sidewall Samples

Six confirmation soil samples (SW-RR-1 through SW-RR-6) were collected from the Railroad Spur (Former) Property excavation sidewalls (Figure 4). Sidewall samples were collected at a rate of approximately one sample per 25 lineal feet of sidewall. Each sidewall was collected discretely from the excavation sidewall at a depth of 18 inches below the top of the existing asphalt grade.

This depth was selected because the highest PCB concentrations in soil in the Railroad Spur (Former) Property excavation area were generally detected in the depth interval 0 to 1.5 feet bgs.

All sidewall samples except for SW-RR-6 are considered representative of post-removal action site conditions. PCBs were detected in each of the representative sidewall samples at concentrations as high as 7.82 mg/kg in sample SW-RR-1 (Table 1). The total PCB concentration observed in sample SW-RR-6 was 18.7 mg/kg. However, this sample is not considered representative of post-removal conditions because, as described above, subsequent excavation of soil between the Kenton Foundry and the Railroad Spur excavation areas included the area represented by this sample. A subsequent bottom sample was collected in this area (see description of CS-31813-1 in the “multi-point composite bottom samples” section below).

As part of construction activities following the Railroad Spur removal action, soils surrounding the removal area were excavated to a depth of 6 feet. Thus, all soils characterized by removal action sidewall sample (SW-RR-1 through SW-RR-5) have been removed from the Site. These soils were transported to the Waste Management Hillsboro Landfill for disposal.

Bucket Scrape Composite Bottom Samples

Seven soil samples (CS-RR-5 through CS-RR-11) were collected by horizontally scraping the bottom of the excavation with a smooth backhoe bucket approximately 3.5 feet in width (Figure 4). Soil comprising each sample was collected from three locations within the bucket (6 inches from each side, and in the middle). To the extent possible, soil was collected that did not contact the backhoe bucket to avoid cross contamination. This sampling method was used in areas of the excavation where entering the excavation was deemed unsafe.

PCBs were not detected above laboratory reporting limits in five of the seven bucket scrape composite bottom samples. A PCB concentration of 0.316 mg/kg was detected in sample CS-RR-5 (Table 1). While below the construction worker direct contact RBC of 4.4 mg/kg, this PCB concentration does exceed PCB clean fill criteria. A PCB concentration of 0.171 mg/kg was detected in sample CS-RR-6 (Table 1). This value is less than both the construction worker direct contact RBC and clean fill criterion for PCBs.

Multi-Point Composite Bottom Samples

Ten soil samples (CS-RR-1 through CS-RR-4, CS-RR-12 through CS-RR-16, and CS-31813-1) were collected from the bottom of the excavation by compositing discrete samples collected using a 10-foot by 10-foot square-based grid pattern (Figure 4). In all sample grids except CS-RR-12 and CS-RR-13, a nine-point grid composite sample was collected. A six-point grid composite sample was collected from grids CS-RR-12 and CS-RR-13 due to their irregular shape.

Low levels of PCBs (up to 0.168 mg/kg) were detected in all but two (CS-RR-15 and CS-RR-16) of the multi-point composite bottom samples (Table 1). All PCB concentrations were below both the construction worker direct contact RBC and clean fill criteria for PCBs.

10.0 WASTE LOADING AND TRANSPORTATION

All soil excavated from the Site was directly loaded into trucks or roll-off boxes lined with plastic sheeting. All loading occurred over areas that were eventually excavated or over asphalt adjacent to the Site to limit the removed soil from spilling onto imported fill or adjoining properties. Where necessary, plastic sheeting was laid on the ground surface around the truck or drop box to catch any spilled soil. Prior to exiting the Site, any uncontained soil was removed from the exterior of the trucks, and the trucks were run through a wheel wash. Soil loads were covered with plastic sheeting and tarps. Soil classified as hazardous waste or PCB remediation waste was transported to the Chemical Waste Management RCRA Subtitle C Landfill located in Arlington, Oregon, for disposal as hazardous and/or TSCA-regulated waste. All other contaminated soil was transported to the Waste Management RCRA Subtitle D Landfill located in Hillsboro, Oregon. Landfill disposal documentation is included in Appendix C.

11.0 SITE RESTORATION AND REDEVELOPMENT

Following completion of general Site construction grading activities, a black woven geotextile fabric was installed atop the base of the Site excavation. Crushed rock was then placed to bring the Site to within approximately 6 inches of original grade. This crushed rock will provide a clean working surface for construction workers during forthcoming redevelopment of the Site.

Planned redevelopment on the Site includes a warehouse, pervious concrete parking lot, asphalt pavement, lined flow-through planters, sidewalks, and pedestrian paths/landscaping (Figure 8). Stormwater from the Site will be managed as indicated in Figure 8, and will include the use of lined flow-through planters and infiltration galleries located near the Site on other portions of the Interstate Maintenance Facility. Stormwater management at the Site is described in more detail in Section 12.3.

12.0 SOURCE CONTROL EVALUATION

Three potential pathways, for Site contaminants to reach the Willamette River, were evaluated and determined to be incomplete, as discussed below.

12.1 AIR PATHWAY

The air pathway from the Site to the Willamette River (i.e., wind erosion, particulate transport) is incomplete. Former structures, pavement, and contaminated soil have been removed, and construction activities are underway under an approved erosion control plan, minimizing the potential for subsequent off-site particulate transport. Construction spoils are being managed under a Contaminated Media Specification (Section 026113) and a Contaminated Media Disposal Plan prepared by the general contractor to ensure that fugitive dusts are controlled and off-site tracking does not occur (Konell, 2013). Native soils have been capped with geotextile fabric and crushed rock. Following completion of redevelopment, the Site will be capped by a new building, sidewalks, asphalt, and clean fill.

12.2 GROUNDWATER PATHWAY

Based upon several factors, it is not reasonably likely that the low levels of contaminants detected in groundwater at the Site will reach the Willamette River via the groundwater pathway. A brief discussion of the manner in which groundwater can reach the river, and a discussion of why it is not reasonably likely to occur at the Site, is provided below.

- **Discharge through sediments or bank seeps** – The Willamette River is located approximately 0.2 miles southwest of the Site. The concentrations of contaminants detected in groundwater at the Site are relatively low, and the substances detected generally have characteristics that make them unlikely to migrate via groundwater. Given the low concentrations of contaminants detected, the potential for contaminants to be naturally occurring or introduced into the sample during sampling, and the fact that significant attenuation would be expected to occur between the Site and the river, it is not considered reasonably likely that substance detected in Site groundwater would pose a risk to human or ecological receptors via the groundwater to surface water migration pathway.
- **Infiltration into stormwater pipes, ditches, or Willamette River tributaries** – During sampling at the Site, groundwater was encountered at depths ranging from 19 to 32 feet bgs. This depth to groundwater is below the elevation of downgradient stormwater pipes, ditches, or river tributaries. Stormwater systems in the immediate Site vicinity discharge to the Columbia Boulevard Wastewater Treatment Plant via the Eastside CSO tunnel. The nearest municipal stormwater line that discharges to the river is located under Interstate Avenue approximately 300 feet west of the Site.

12.3 STORMWATER PATHWAY

The stormwater pathway from the Site to the Willamette River is incomplete. The City cleaned and removed the historical Site stormwater system and abandoned the former connection to the municipal conveyance system during preparation for redevelopment. The historical system discharged to a portion of the City's former Basin 43 stormwater conveyance system that the City diverted to the municipal Columbia Boulevard Wastewater Treatment Plant in December 2011, before the City acquired the Site. The City cleaned and surveyed stormwater lines in Basin 43 to verify that legacy inline solids are not present that may present a current or future source of contaminants to the treatment plant or to the river (BES, 2011).

Following completion of Site redevelopment, Site stormwater will be retained on-site to the maximum extent practicable. On the Site, two lined flow-through planters (planters C and G) and pervious concrete with under-drain systems will direct stormwater to two infiltration galleries (galleries B and D) located off site on the Interstate Maintenance Facility (see Figure 8). Only during peak storms will stormwater discharge from the Site into the City storm lines adjacent to the Interstate Maintenance Facility. Under peak conditions, Flow-through Planter C and Infiltration Gallery D can discharge to the stormwater line on North Kerby Avenue. Both of those lines have been diverted to the City's combined sewer system (the East Side Tunnel), from which it is conveyed to the Columbia Boulevard Wastewater Treatment Plant along with combined sewer flow from broader drainage areas. Site stormwater will only reach the Willamette River during infrequent CSO events, during which combined sewer flow in the tunnel discharges to the river from Outfall 43 and/or other CSO outfalls.

In addition to having an insignificant pathway to the river, Site stormwater following redevelopment will not convey legacy contaminants associated with historical Site activities. Potential contamination sources to Site stormwater (i.e., contaminated soil) have been removed and the Site will be capped by new construction and clean fill. All Site stormwater will be subject to treatment, redevelopment meets City stormwater development standards, and planned operations at the Site following redevelopment (the Shops and Stores Warehouse and parking) are not likely to result in significant exposures of stormwater to industrial activities.

12.4 SOURCE CONTROL EVALUATION CONCLUSIONS

No complete pathways exist for Site contaminants to reach the Willamette River and a DEQ Source Control Decision is warranted for the Site.

13.0 SUMMARY AND CONCLUSIONS

As part of the Site redevelopment, the City completed the following remediation activities.

- Cleaning and interim improvements to the former stormwater system, including cleaning of the Kenton Foundry (Former) Property catch basin and all piping between the catch basin and the City storm line on North Tillamook Street, installation of a catch basin filter in the interim period between investigation and redevelopment, removal of the Site stormwater conveyance system, and abandonment of the former connection to the municipal storm system.
- Removal and disposal at the Waste Management Hillsboro Landfill located in Hillsboro, Oregon, of all ACM and other regulated building materials identified in the foundry building, building demolition debris, and various equipment left in the building by the previous owner prior to building demolition.
- Removal and disposal at the Chemical Waste Management Landfill located in Arlington, Oregon, of several bulk wastes (areas D2, G, and K) that testing indicated were characteristic hazardous wastes.
- Excavation of soil determined to be a characteristic hazardous waste in two areas (the B-2 and B-31 areas) and disposal of the soil at the Chemical Waste Management Landfill.
- Removal and disposal of a decommissioned UST discovered during construction activities (Alpha, 2013). Soil at a depth of 7 feet and deeper in the UST area contains diesel at a concentration of up to 29,000 mg/kg, exceeding the construction worker direct contact RBC of 4,600 mg/kg. This remaining pocket of contamination is located beneath a newly constructed building, and therefore does not pose a risk to human health. The leaking UST file opened for this UST (26-13-0349) was closed by the DEQ on June 25, 2013.
- Excavation and removal of a total of approximately 4,905 tons of contaminated Kenton Foundry (Former) Property soil to a depth of approximately 5.5 feet bgs, as required by selected construction methodologies, and transport of the removed soil to the Waste Management Hillsboro Landfill for disposal. No soil containing contaminant concentrations exceeding applicable RBCs remains on the property.
- Excavation and disposal of approximately 387 tons of soil containing PCBs at concentrations exceeding 50 mg/kg from the Railroad Spur (Former) Property and transport of the removed soil to the Chemical Waste Management Hillsboro Landfill.
- Excavation of approximately 432 tons of soil containing PCBs at a concentration of <50 mg/kg from the Railroad Spur (Former) Property and transport of the soil to the Waste Management Hillsboro Landfill for disposal. No soil containing PCB concentrations exceeding applicable RBCs remains on the property.
- Installation of a geotextile liner, crushed rock, and clean fill across the Site.

Contaminated soils posing potential risk to human health have been removed, and no complete pathways exist for off-site migration of Site contaminants to result in adverse impacts on Willamette River sediment. Site redevelopment is underway, and anticipated for completion in 2015. Actions completed at the Site and results from sampling and laboratory testing of Site soil and groundwater support the conclusion that a DEQ Source Control Decision and No Further Action determination is warranted for the Site.

AMEC Environment & Infrastructure, Inc.

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Reviewed by:

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GT/lp

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LIMITATIONS

This report was prepared exclusively for City of Portland Bureau of Environmental Services by AMEC Environment & Infrastructure, Inc. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Independent Cleanup Pathway Report is intended to be used by City of Portland Bureau of Environmental Services for the Kenton Brass Foundry (Former) and Adjoining Railroad Spur (Former) Properties only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

The findings contained herein are relevant to the dates of the AMEC Site visit and should not be relied upon to represent conditions at later dates. In the event that changes in the nature, usage, or layout of the property or nearby properties are made, the conclusions and recommendations contained in this report may not be valid. If additional information becomes available, it should be provided to AMEC so the original conclusions and recommendations can be modified as necessary.

TABLES

TABLE 1
Polychlorinated Biphenyl Data Summary - Soil
Kenton Foundry (Former) and Adjoining Railroad Spur (Former) Properties

Investigation Name	Sample ID	Depth Interval (ft bgs)	Sample Date	Total PCBs[1]	Aroclor 1016/1242	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268
				µg/kg									
DEQ Clean Fill Screening Level				200	NA	NA	NA	NA	NA	NA	NA	NA	NA
Soil Ingestion, Dermal Contact, and Inhalation RBCs		Occ. Worker		560	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Const. Worker		4,400	NA	NA	NA	NA	NA	NA	NA	NA	NA
AMEC 2011 Tfoundry	B1 0-1.5	0-1.5	09/24/10	**73**	10.0 U	20.0 U	10.0 U	NT	10.0 U	**34.0**	**39.0**	10.0 U	10.0 U
AMEC 2011 Tfoundry	B2 0-1.5	0-1.5	09/23/10	**455**	**371**	80.0 U	40.0 U	NT	40.0 U	40.0 U	**84.0**	40.0 U	40.0 U
AMEC 2011 Tfoundry	B3 0-2	0-2	09/23/10	**346**	20.0 U	40.0 U	20.0 U	NT	20.0 U	**219**	**127**	20.0 U	20.0 U
AMEC 2011 Tfoundry	B4 0-1.5	0-1.5	09/23/10	**36**	10.0 U	20.0 U	10.0 U	NT	**26.0**	10.0 U	**10.0**	10.0 U	10.0 U
AMEC 2011 Tfoundry	B5 0-1.5	0-1.5	09/24/10	**452**	20.0 U	40.0 U	20.0 U	NT	20.0 U	**159**	**293**	20.0 U	20.0 U
AMEC 2011 Tfoundry	B6 0-1.5	0-1.5	09/24/10	**120**	10.0 U	20.0 U	10.0 U	NT	10.0 U	**46.0**	**74.0**	10.0 U	10.0 U
AMEC 2011 Tfoundry	B6 7.5-8.5	7.5-8.5	09/24/10	20 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC 2011 Tfoundry	B7 0-1.5	0-1.5	09/23/10	**825**	40.0 U	80.0 U	40.0 U	NT	**780**	40.0 U	**45.0**	40.0 U	40.0 U
AMEC 2011 Tfoundry	B7 3-4	3-4	09/23/10	20 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC 2011 Tfoundry	B8 0-1.5	0-1.5	09/23/10	**1,760**	200 U	400 U	200 U	NT	200 U	200 U	**1,760**	200 U	200 U
AMEC 2011 Tfoundry	B8 3-4	3-4	09/23/10	**333**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**333**	10.0 U	10.0 U
AMEC 2011 Tfoundry	B9 0-1.5	0-1.5	09/24/10	**23**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**23.0**	10.0 U	10.0 U
AMEC 2011 Tfoundry	B10 0-1.5	0-1.5	09/23/10	**3,480**	250 U	500 U	250 U	NT	250 U	250 U	**3,480**	250 U	250 U
AMEC 2011 Tfoundry	B10 4-5	4-5	09/23/10	**36**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**36.0**	10.0 U	10.0 U
AMEC 2011 Tfoundry	D1	0-0.5	09/23/10	**826**	40.0 U	80.0 U	40.0 U	NT	**617**	40.0 U	**209**	40.0 U	40.0 U
AMEC 2011 Tfoundry	D2	0-0.5	09/24/10	**711**	40.0 U	80.0 U	40.0 U	NT	**711**	40.0 U	200 U	40.0 U	40.0 U
AMEC 2011 Tfoundry	D3	0-0.5	09/24/10	**27,250**	1,000 U	2,000 U	1,000 U	NT	1,000 U	**5,450**	**21,800**	1,000 U	1,000 U
AMEC 2012 Data gap	SB-16_0-5	0-5	01/10/12	**182**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**182**	10.0 U	10.0 U
AMEC 2012 Data gap	SB-16_5-10	5-10	01/10/12	**15.1**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**15.1**	10.0 U	10.0 U
AMEC 2012 Data gap	SB-16_10-15	10-15	01/10/12	**73.1**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**73.1**	10.0 U	10.0 U
AMEC 2012 Data gap	SB-16_15-20	15-20	01/10/12	20 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC 2012 Data gap	SB-16_20-25	20-25	01/10/12	20 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC 2012 Data gap	SB-18_0-5	0-5	01/10/12	**12.2**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**12.2**	10.0 U	10.0 U
AMEC 2012 Data gap	SB-18_5-10	5-10	01/10/12	20 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC 2012 Data gap	SB-18_10-15	10-15	01/10/12	**101**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**101**	10.0 U	10.0 U
AMEC 2012 Data gap	SB-18_15-20	15-20	01/10/12	**39.3**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**39.3**	10.0 U	10.0 U
AMEC 2012 Data gap	SB-18_20-25	20-25	01/10/12	**34.8**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**34.8**	10.0 U	10.0 U
AMEC 2012 Data gap	SB-18_30-35	30-35	01/10/12	20 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC 2012 Data gap	SB-22_0-5	0-5	01/09/12	**174**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**174**	10.0 U	10.0 U
AMEC 2012 Data gap	SB-22_5-10	5-10	01/09/12	20 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC 2012 Data gap	SB-23_3-4	3-4	01/12/12	**7,420**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**7,420**	10.0 U	10.0 U
AMEC 2012 Data gap	SB-24_3-4	3-4	01/12/12	**93.4**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**93.4**	10.0 U	10.0 U
AMEC 2012 Data gap	SB-36_3-4	3-4	01/12/12	**161**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**161**	10.0 U	10.0 U
AMEC 2012 Tfoundry Phase II	B-18_0-1.5	0-1.5	05/21/12	**124**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**124**	10.0 U	10.0 U
AMEC 2012 Tfoundry Phase II	B-19_0-1.5	0-1.5	05/21/12	**1,510**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**1,510**	10.0 U	10.0 U
AMEC 2012 Tfoundry Phase II	B-19_1.5-3.0	1.5-3.0	05/21/12	**28**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**28.0**	10.0 U	10.0 U
AMEC 2012 Tfoundry Phase II	B-19_3.0-5.0	3.0-5.0	05/21/12	20 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC 2012 Tfoundry Phase II	B-20_0-1.5	0-1.5	05/21/12	**223**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**223**	10.0 U	10.0 U
AMEC 2012 Tfoundry Phase II	B-21_0-1.5	0-1.5	05/21/12	**4,820**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**4,820**	10.0 U	10.0 U
AMEC 2012 Tfoundry Phase II	B-21_1.5-3.0	1.5-3.0	05/21/12	**820**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**820**	10.0 U	10.0 U
AMEC 2012 Tfoundry Phase II	B-21_3.0-5.0	3.0-5.0	05/21/12	**201**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**201**	10.0 U	10.0 U
AMEC November 2012	B-22_0-1.5	0-1.5	11/14/12	**11.3**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**11.3**	10.0 U	10.0 U
AMEC November 2012	B-22_1.5-3.0	1.5-3.0	11/14/12	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC November 2012	B-23_0-1.5	0-1.5	11/14/12	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC November 2012	B-23_1.5-3.0	1.5-3.0	11/14/12	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC November 2012	B-24_0-1.5	0-1.5	11/14/12	**152**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**152**	10.0 U	10.0 U
AMEC November 2012	B-24_1.5-3.0	1.5-3.0	11/14/12	**11.7**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**11.7**	10.0 U	10.0 U
AMEC November 2012	B-25_0-1.5	0-1.5	11/14/12	**29.8**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**29.8**	10.0 U	10.0 U
AMEC November 2012	B-25_1.5-3.0	1.5-3.0	11/14/12	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC November 2012	B-26_0-1.5	0-1.5	11/14/12	**79.0**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**79.0**	10.0 U	10.0 U
AMEC November 2012	B-26_1.5-3.0	1.5-3.0	11/14/12	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC November 2012	B-27_0-1.5	0-1.5	11/14/12	50.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
AMEC November 2012	B-27_1.5-3.0	1.5-3.0	11/14/12	**14.0**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**14.0**	10.0 U	10.0 U
AMEC November 2012	B-28_0-1.5	0-1.5	11/14/12	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC November 2012	B-28_1.5-3.0	1.5-3.0	11/14/12	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC November 2012	B-29_0-1.5	0-1.5	11/14/12	**58.9**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**58.9**	10.0 U	10.0 U
AMEC November 2012	B-29_1.5-3.0	1.5-3.0	11/14/12	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC November 2012	B-30_0-1.5	0-1.5	11/14/12	500 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	500 U	10.0 U	10.0 U
AMEC November 2012	B-30_1.5-3.0	1.5-3.0	11/14/12	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC November 2012	B-31_0-1.5	0-1.5	11/14/12	**102**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**102**	10.0 U	10.0 U
AMEC November 2012	B-31_1.5-3.0	1.5-3.0	11/14/12	**31.7**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**31.7**	10.0 U	10.0 U
AMEC November 2012	B-32_0-1.5	0-1.5	11/14/12	**458**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**458**	10.0 U	10.0 U
AMEC November 2012	B-32_1.5-3.0	1.5-3.0	11/14/12	**133**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**133**	10.0 U	10.0 U
AMEC November 2012	B-33_0-1.5	0-1.5	11/14/12	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC November 2012	B-33_1.5-3.0	1.5-3.0	11/14/12	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC November 2012	B-34_0-1.5	0-1.5	11/14/12	**10.8**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**10.8**	10.0 U	10.0 U
AMEC November 2012	B-34_1.5-3.0	1.5-3.0	11/14/12	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC November 2012	B-35_0-1.5	0-1.5	11/14/12	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
AMEC November 2012	B-35_1.5-3.0	1.5-3.0	11/14/12	**39.1**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**39.1**	10.0 U	10.0 U
AMEC November 2012	B-36_0-1.5	0-1.5	11/14/12	**2,200**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**2,200**	10.0 U	10.0 U
AMEC November 2012	B-36_1.5-3.0	1.5-3.0	11/14/12	**171**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**171**	10.0 U	10.0 U
AMEC November 2012	B-37_0-1.5	0-1.5	11/14/12	**7,910**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**7,910**	10.0 U	10.0 U
AMEC November 2012	B-37_1.5-3.0	1.5-3.0	11/14/12	**359**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**359**	10.0 U	10.0 U
AMEC November 2012	B-38_0-1.5	0-1.5	11/14/12	**29,300**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**29,300**	10.0 U	10.0 U
AMEC November 2012	B-38_1.5-3.0	1.5-3.0	11/14/12	**197**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**197**	10.0 U	10.0 U
AMEC November 2012	B-40_0-1.5	0-1.5	11/14/12	**1,170**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**1,170**	10.0 U	10.0 U
AMEC November 2012	B-40_1.5-3.0	1.5-3.0	11/14/12	**216**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**216**	10.0 U	10.0 U
AMEC November 2012	B-42_0-1.5	0-1.5	11/14/12	**435**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**435**	10.0 U	10.0 U
AMEC November 2012	B-42_1.5-3.0	1.5-3.0	11/14/12	**522**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**522**	10.0 U	10.0 U
AMEC November 2012	B-43_0-1.5	0-1.5	11/14/12	**428**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**428**	10.0 U	10.0 U
AMEC November 2012	B-43_1.5-3.0	1.5-3.0	11/14/12	**159**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**159**	10.0 U	10.0 U
AMEC November 2012	B-45_0-1.5	0-1.5	11/14/12	**424**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**424**	10.0 U	10.0 U
AMEC November 2012	B-45_1.5-3.0	1.5-3.0	11/14/12	**10.6**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**10.6**	10.0 U	10.0 U
AMEC November 2012	B-48_0-3.0	0-3.0	11/14/12	**489,000**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**489,000**	10.0 U	10.0 U
AMEC November 2012	B-48_3.0-5.0	3.0-5.0	11/14/12	**229,000**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**229,000**	10.0 U	10.0 U
AMEC November 2012	B-48_5.0-7.0	5.0-7.0	11/14/12	**401**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**401**	10.0 U	10.0 U
AMEC November 2012	B-49_0-1.5	0-1.5	11/14/12	**41,500**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**41,500**	10.0 U	10.0 U
AMEC November 2012	B-49_1.5-3.0	1.5-3.0	11/14/12	**5,340**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**5,340**	10.0 U	10.0 U
AMEC November 2012	B-49_3.0-4.5	3.0-4.5	11/14/12	**261**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**261**	10.0 U	10.0 U
AMEC January 2013	B-51_0-1.5	0-1.5	1/4/2013	**1,690**	100 U	200 U	100 U	NT	100 U	100 U	**1,690**	100 U	100 U
AMEC January 2013	B-52_0-1.5	0-1.5	1/4/2013	**12,500**	1,000 U	2,000 U	1,000 U	NT	1,000 U	1,000 U	**12,500**	1,000 U	1,000 U
AMEC January 2013	B-52_1.5-3.0	1.5-3.0	1/4/2013	**4,500**	500 U	1,000 U	500 U	NT	500 U	500 U	**4,500**	500 U	500 U
AMEC January 2013	B-54_0-1.5	0-1.5	1/7/2013	**6,790**	500 U	1,000 U	500 U	NT	500 U	500 U	**6,790**	500 U	500 U
AMEC January 2013	B-54_1.5-3.0	1.5-3.0	1/7/2013	**422**	40 U	80 U	40 U	NT	40 U	40 U	**422**	40 U	40 U
AMEC January 2013	B-55_0-1.5	0-1.5	1/4/2013	**43,400**	5,000 U	10,000 U	5,000 U	NT	5,000 U	5,000 U	**43,400**	5,000 U	5,000 U
AMEC January 2013	B-55_1.5-3.0	1.5-3.0	1/4/2013	**36,100**	5,000 U	10,000 U	5,000 U	NT	5,000 U	5,000 U	**36,100**	5,000 U	5,000 U
AMEC January 2013	B-56_0-1.5	0-1.5	1/4/2013	**9,570**	1,000 U	2,000 U	1,000 U	NT	1,000 U	1,000 U	**9,570**	1,000 U	1,000 U
AMEC January 2013	B-56_1.5-3.0	1.5-3.0	1/4/2013	**1,195**	**105**	200 U	100 U	NT	100 U	100 U	**1,090**	100 U	100 U
AMEC January 2013	B-57_0-1.5	0-1.5	1/8/2013	**192,000**	10,000 U	20,000 U	10,000 U	NT	10,000 U	10,000 U	**192,000**	10,000 U	10,000 U
AMEC January 2013	B-57_1.5-3.0	1.5-3.0	1/8/2013	**5,400**	500 U	1,000 U	500 U	NT	500 U	500 U	**5,400**	500 U	500 U
AMEC January 2013	B-58_0-1.5	0-1.5	1/4/2013	**170,000**	10,000 U	20,000 U	10,000 U	NT	10,000 U	10,000 U	**170,000**	10,000 U	10,000 U
AMEC January 2013	B-58_1.5-3.0	1.5-3.0	1/4/2013	**4,400**	500 U	1,000 U	500 U	NT	500 U	500 U	**4,400**	500 U	500 U
AMEC January 2013	B-59_0-1.5	0-1.5	1/4/2013	**45,900**	5,000 U	10,000 U	5,000 U	NT	5,000 U	5,000 U	**45,900**	5,000 U	5,000 U
AMEC January 2013	B-59_1.5-3.0	1.5-3.0	1/4/2013	**2,460**	200 U	400 U	200 U	NT	200 U	200 U	**2,460**	200 U	200 U
AMEC January 2013	B-60_0-1.5	0-1.5	1/8/2013	**344**	50 U	100 U	50 U	NT	50 U	50 U	**344**	50 U	50 U
AMEC January 2013	B-60_1.5-3.0	1.5-3.0	1/8/2013	**93.1**	10 U	20 U	10 U	NT	10 U	10 U	**93.1**	10 U	10 U
AMEC January 2013	B-61_0-1.5	0-1.5	1/4/2013	**672,000**	100,000 U	200,000 U	100,000 U	NT	100,000 U	100,000 U	**672,000**	100,000 U	100,000 U
AMEC January 2013	B-61_1.5-3.0	1.5-3.0	1/4/2013	**260**	100 U	200 U	100 U	NT	100 U	100 U	**260**	100 U	100 U

TABLE 1
Polychlorinated Biphenyl Data Summary - Soil
Kenton Foundry (Former) and Adjoining Railroad Spur (Former) Properties

Investigation Name	Sample ID	Depth Interval (ft bgs)	Sample Date	Total PCBs[1]	Aroclor 1016/1242	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268
					µg/kg								
DEQ Clean Fill Screening Level				200	NA	NA	NA	NA	NA	NA	NA	NA	NA
Soil Ingestion, Dermal Contact, and Inhalation RBCs		Occ. Worker		560	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Const. Worker		4,400	NA	NA	NA	NA	NA	NA	NA	NA	NA
AMEC January 2013	B-62_0-1.5	0-1.5	1/4/2013	**21,500**	2,000 U	4,000 U	2,000 U	NT	2,000 U	2,000 U	**21,500**	2,000 U	2,000 U
AMEC January 2013	B-62_1.5-3.0	1.5-3.0	1/4/2013	**524**	10 U	20 U	10 U	NT	10 U	10 U	**524**	10 U	10 U
Confirmation Sampling	02252013_CS	5.5	02/25/13	**43.6**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**43.6**	10.0 U	10.0 U
Confirmation Sampling	02262013-CS	5.5	02/26/13	**16.2**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**16.2**	10.0 U	10.0 U
Confirmation Sampling	03012013-CS	5.5	03/01/13	**31.0**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**31.0**	10.0 U	10.0 U
Confirmation Sampling	03012013-CS-2	5.5	03/01/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Confirmation Sampling	03052013_CS	5.5	03/05/13	**13.8**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**13.8**	10.0 U	10.0 U
Confirmation Sampling	)3062013CS@090	5.5	03/06/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Confirmation Sampling	03072013_CS	5.5	03/07/13	**59.8**	10.0 U	20.0 U	10.0 U	NT	10.0 U	**17.6**	**42.2**	10.0 U	10.0 U
Confirmation Sampling	2-26-2013-CS2	5.5	02/26/13	**15.7**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**15.7**	10.0 U	10.0 U
Confirmation Sampling	2-27-2013-CB1	5.5	02/27/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Confirmation Sampling	2-27-2013-CB2	5.5	02/27/13	**40.6**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**40.6**	10.0 U	10.0 U
Confirmation Sampling	2-27-2013-CB3	5.5	02/27/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Confirmation Sampling	2-28-2013-CS1	5.5	02/28/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Confirmation Sampling	SW-E-1	1.5	02/27/13	**20.2**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**20.2**	10.0 U	10.0 U
Confirmation Sampling	SW-E-2	1.5	02/28/13	**67.3**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**67.3**	10.0 U	10.0 U
Confirmation Sampling	SW-E-3	1.5	03/01/13	**33.6**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**33.6**	10.0 U	10.0 U
Confirmation Sampling	SW-E-4	1.5	03/07/13	**229**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**229**	10.0 U	10.0 U
Confirmation Sampling	SW-N-1	1.5	03/06/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Confirmation Sampling	SW-S-1	1.5	02/26/13	**91.4**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**91.4**	10.0 U	10.0 U
Confirmation Sampling	SW-S-2	1.5	02/27/13	**118**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**118**	10.0 U	10.0 U
Confirmation Sampling	SW-W-1	1.5	02/26/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Confirmation Sampling	SW-W-2	1.5	02/27/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Confirmation Sampling	SW-W-3	1.5	03/01/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Confirmation Sampling	SW-W-4	1.5	03/05/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Alpha - Heating Oil Tank	PFE @ 69"	5.75	03/04/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Alpha - Heating Oil Tank	PFW @ 69"	5.75	03/04/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Alpha - Heating Oil Tank	Tank Contents	5.5	03/04/13	**115**	**38.0**	20.0 U	10.0 U	NT	**61.5**	10.0 U	**15.9**	10.0 U	10.0 U
Confirmation Sampling	CS-RR-1	6	03/04/13	**57.9**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**57.9**	10.0 U	10.0 U
Confirmation Sampling	CS-RR-2	6	03/05/13	**158**	25.0 U	50.0 U	25.0 U	NT	25.0 U	25.0 U	**158**	25.0 U	25.0 U
Confirmation Sampling	CS-RR-3	6	03/05/13	**83.2**	25.0 U	50.0 U	25.0 U	NT	25.0 U	25.0 U	**83.2**	25.0 U	25.0 U
Confirmation Sampling	CS-RR-4	6	03/06/13	**59.9**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**59.9**	10.0 U	10.0 U
Confirmation Sampling	CS-RR-5	9	03/08/13	**316**	20.0 U	40.0 U	20.0 U	NT	20.0 U	20.0 U	**316**	20.0 U	20.0 U
Confirmation Sampling	CS-RR-6	9	03/08/13	**171**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**171**	10.0 U	10.0 U
Confirmation Sampling	CS-RR-7	9	03/08/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	0.02 U	10.0 U	10.0 U
Confirmation Sampling	CS-RR-8	9	03/08/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	0.02 U	10.0 U	10.0 U
Confirmation Sampling	CS-RR-9	9	03/08/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	0.02 U	10.0 U	10.0 U
Confirmation Sampling	CS-RR-10	9	03/08/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	0.02 U	10.0 U	10.0 U
Confirmation Sampling	CS-RR-11	9	03/08/13	20.0 U	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	0.02 U	10.0 U	10.0 U
Confirmation Sampling	CS-RR-12	6	03/08/13	**87.0**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**87.0**	10.0 U	10.0 U
Confirmation Sampling	CS-RR-13	9	03/08/13	**65.6**	20.0 U	40.0 U	20.0 U	NT	20.0 U	20.0 U	**65.6**	20.0 U	20.0 U
Confirmation Sampling	CS-RR-14	9	03/08/13	**43.0**	20.0 U	40.0 U	20.0 U	NT	20.0 U	20.0 U	**43.0**	20.0 U	20.0 U
Confirmation Sampling	CS-RR-15	9	03/08/13	20.0 U	20.0 U	40.0 U	20.0 U	NT	20.0 U	20.0 U	0.02 U	20.0 U	20.0 U
Confirmation Sampling	CS-RR-16	9	03/08/13	20.0 U	20.0 U	40.0 U	20.0 U	NT	20.0 U	20.0 U	0.02 U	20.0 U	20.0 U
Confirmation Sampling	CS-31813-1	6	03/18/13	**168**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**168**	10.0 U	10.0 U
Confirmation Sampling	SW-RR-1	1.5	03/04/13	**7,820**	1,000 U	2,000 U	1,000 U	NT	1,000 U	1,000 U	**7,820**	1,000 U	1,000 U
Confirmation Sampling	SW-RR-2	1.5	03/06/13	**168**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**168**	10.0 U	10.0 U
Confirmation Sampling	SW-RR-3	1.5	03/07/13	**165**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**165**	10.0 U	10.0 U
Confirmation Sampling	SW-RR-4	1.5	03/08/13	**485**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	20.0 U	**485**	10.0 U
Confirmation Sampling	SW-RR-5	1.5	03/08/13	**1,510**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**1,510**	10.0 U	10.0 U
Confirmation Sampling	SW-RR-6	1.5	03/07/13	**18,700**	10.0 U	20.0 U	10.0 U	NT	10.0 U	10.0 U	**18,700**	10.0 U	10.0 U
AMEC 2011 Tfoundry	CB	SED	09/24/10	**562**	40.0 U	80.0 U	40.0 U	NT	**468**	40.0 U	**94.0**	40.0 U	40.0 U
Portland Harbor JSCS Upland Soil / Stormwater Sediment SLV				0.39	530	NA	NA	NA	1,500	300	200	NA	NA

Notes:
Bold = constituent detected at or above the method reporting limit
U = constituent not detected at or above the method reporting limit shown
[1]Total PCBs are reported as the sum of the reported Aroclors detected at or above the method reporting limit. In the instances where all reported Aroclors were not detected at or above the method reporting limit, the Total PCBs for that sample are reported as undetected at the greatest Aroclor method reporting limit.

exceeds DEQ Clean Fill Screening Level
exceeds Occupational Worker RBC
exceeds Construction Worker RBC
exceeds JSCS Upland Soil/Stormwater Sed., Table 3-1, 07/16/07, CB (09/24/10) is the only sample screened against the JSCS SLVs

µg/kg = micrograms per kilogram
DEQ = Oregon Department of Environmental Quality
ID = identification
JSCS = Portland Harbor Joint Source Control Strategy
NA = No RBC published by DEQ for this analyte
NT = Not Tested
PCBs = Polychlorinated Biphenyls
RBC = Risk-Based Concentration
SED = Sediment (not subsurface soil)
SLV = DEQ JSCS Screemomg Level Value

TABLE 2
Metals Data Summary - Soil
Kenton Foundry (Former) and Adjoining Railroad Spur (Former) Properties

Investigation Name	Sample ID	Depth Interval (ft bgs)	Sample Date	Sample Matrix	Metals																	TCLP			
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Arsenic	Cadmium	Copper	Lead
					mg/kg																	mg/L	mg/L	mg/L	mg/L
			DEQ Clean Fill Screening Level		0.56	8.8	790	21	0.63	76	43	34	28	0.23	2.1	47	0.71	4.2	5.2	180	180	NA	NA	NA	NA
Soil Ingestion, Dermal Contact, and Inhalation RBCs			Occupational Worker		NA	1.7	190,000	2,000	510	NA	NA	41,000	800	310	NA	20,000	NA	5,100	NA	NA	NA	NA	NA	NA	NA
			Construction Worker		NA	13	60,000	610	150	>Max	NA	12,000	800	93	NA	6,100	NA	1,500	NA	NA	NA	NA	NA	NA	NA
AMEC 2011 TFoundry	B1 0-1.5	0-1.5	09/24/10	Soil	NT	5.30	NT	0.400	0.740	3,920	18.6	NT	1,690	120	0.0310	NT	28.5	1.00 U	0.500	NT	729	NT	NT	NT	0.155
AMEC 2011 TFoundry	B2 0-1.5	0-1.5	09/23/10	Soil	NT	6.82	NT	0.170	11.6	NT	92.7	NT	8,030	1,910	0.664	NT	103	1.00 U	3.30	NT	5,080	NT	NT	NT	12.4
AMEC 2011 TFoundry	B2 2-4	2-4	09/23/10	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	15.6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC 2011 TFoundry	B3 0-2	0-2	09/23/10	Soil	NT	10.5	NT	0.220	18.6	NT	71.2	NT	6,130	1,140	0.112	NT	75.8	1.07	3.95	NT	6,520	NT	NT	NT	0.800
AMEC 2011 TFoundry	B3 3-4	3-4	09/23/10	Soil	NT	4.46	NT	NT	NT	NT	NT	NT	NT	14.7	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC 2011 TFoundry	B4 0-1.5	0-1.5	09/23/10	Soil	NT	3.55	NT	0.600	0.540	14,200	19.2	NT	158	18.9	0.0410	NT	19.4	1.00 U	0.10 U	NT	375	NT	NT	NT	NT
AMEC 2011 TFoundry	B5 0-1.5	0-1.5	09/24/10	Soil	NT	6.98	NT	0.290	1.64	4,690	130	NT	1,360	409	0.0220	NT	86.7	1.00 U	5.39	NT	734	NT	NT	NT	2.30
AMEC 2011 TFoundry	B6 0-1.5	0-1.5	09/24/10	Soil	NT	6.14	NT	0.440	3.10	7,790	38.6	NT	1,330	295	0.0990	NT	40.7	1.00 U	1.09	NT	1,530	NT	NT	NT	0.300
AMEC 2011 TFoundry	B6 7.5-8.5	7.5-8.5	09/24/10	Soil	NT	4.92	NT	0.630	0.10 U	NT	18.0	NT	28.8	8.69	0.0220	NT	16.7	1.00 U	0.10 U	NT	77.0	NT	NT	NT	NT
AMEC 2011 TFoundry	B7 0-1.5	0-1.5	09/23/10	Soil	NT	6.58	NT	0.900	0.630	5,650	23.4	NT	215	60.7	0.0330	NT	22.0	1.00 U	0.10 U	NT	269	NT	NT	NT	NT
AMEC 2011 TFoundry	B8 0-1.5	0-1.5	09/23/10	Soil	NT	11.5	NT	0.420	5.13	NT	48.1	NT	414	465	0.130	NT	48.4	1.00 U	3.25	NT	590	0.050 U	NT	NT	0.210
AMEC 2011 TFoundry	B8 3-4	3-4	09/23/10	Soil	NT	5.73	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC 2011 TFoundry	B9 0-1.5	0-1.5	09/24/10	Soil	NT	5.08	NT	0.640	0.110	NT	22.1	NT	26.4	16.4	0.0350	NT	17.2	1.00 U	0.10 U	NT	79.1	NT	NT	NT	NT
AMEC 2011 TFoundry	B10 0-1.5	0-1.5	09/23/10	Soil	NT	3.91	NT	0.410	0.500	NT	15.9	NT	67.0	56.2	0.0720	NT	17.7	1.00 U	0.10 U	NT	152	NT	NT	NT	NT
AMEC 2011 TFoundry	D1	0-0.5	09/23/10	Soil	NT	10.3	NT	0.440	9.12	NT	59.4	NT	1,260	334	0.108	NT	58.7	1.00 U	10.7	NT	1,320	0.050 U	NT	NT	0.121
AMEC 2011 TFoundry	D2	0-0.25	09/24/10	Sediment	NT	9.27	NT	0.130	24.9	NT	31.8	NT	59,300	2,220	0.336	NT	231	2.01	12.5	NT	24,400	0.050 U	0.183	160	5.94
AMEC 2011 TFoundry	D3	0-0.5	09/24/10	Soil	NT	5.80	NT	0.730	2.03	NT	30.6	NT	73.3	203	0.123	NT	28.9	1.00 U	0.160	NT	417	NT	NT	NT	0.0520
AMEC 2012 Tfoundry Phase	B-11_0-1.5	0-1.5	05/21/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	6.90	6.90	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC 2012 Tfoundry Phase	B-11_1.5-3.0	1.5-3.0	05/21/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	13.9	13.9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC 2012 Tfoundry Phase	B-12_0-1.5	0-1.5	05/21/12	Soil	NT	NT	NT	NT	NT	NT	NT	18.0	7.13	7.13	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC 2012 Tfoundry Phase	B-12_1.5-3.0	1.5-3.0	05/21/12	Soil	NT	NT	NT	NT	NT	NT	NT	18.7	9.4	9.40	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC 2012 Tfoundry Phase	B-13_0-1.5	0-1.5	05/21/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	7.44	7.44	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC 2012 Tfoundry Phase	B-13_1.5-3.0	1.5-3.0	05/21/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	9.53	9.53	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC 2012 Tfoundry Phase	B-14_0-1.5	0-1.5	05/21/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	6.05	6.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC 2012 Tfoundry Phase	B-14_1.5-3.0	1.5-3.0	05/21/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	20.7	20.7	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC 2012 Tfoundry Phase	B-15_0-1.5	0-1.5	05/21/12	Soil	NT	NT	NT	NT	NT	NT	NT	17.1	5.72	5.72	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC 2012 Tfoundry Phase	B-15_1.5-3.0	1.5-3.0	05/21/12	Soil	NT	NT	NT	NT	NT	NT	NT	21.3	13.9	13.9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC 2012 Data gap	SB-16_0-5	0-5	01/10/12	Soil	NT	4.75	150	NT	0.108	16.9	NT	20.2	10.2	0.0189	NT	NT	1 U	0.1 U	NT	NT	66.7	NT	NT	NT	NT
AMEC 2012 Data gap	SB-16_5-10	5-10	01/10/12	Soil	NT	6.32	149	NT	0.1 U	17.8	NT	19.8	16	0.0314	NT	NT	1 U	0.1 U	NT	NT	69.2	NT	NT	NT	NT
AMEC 2012 Data gap	SB-18_0-5	0-5	01/10/12	Soil	NT	7.06	215	NT	0.16	25.3	NT	22.2	29.6	0.0483	NT	NT	1 U	0.1 U	NT	NT	89.8	NT	NT	NT	NT
AMEC 2012 Data gap	SB-18_5-10	5-10	01/10/12	Soil	NT	4.98	159	NT	0.1 U	20.3	NT	18.3	9.33	0.0149	NT	NT	1 U	0.1 U	NT	NT	67	NT	NT	NT	NT
AMEC 2012 Data gap	SB-18_30-35	30-35	01/10/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0174	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-22_0-1.5	0-1.5	11/14/12	Soil	NT	4.42	NT	NT	NT	NT	NT	72.5	46.9	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-22_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	3.70	NT	NT	NT	NT	NT	19.6	6.58	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-23_0-1.5	0-1.5	11/14/12	Soil	NT	3.67	NT	NT	NT	NT	NT	18.7	6.73	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-23_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	5.36	NT	NT	NT	NT	NT	21.9	9.52	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-24_0-1.5	0-1.5	11/14/12	Soil	NT	3.32	129	NT	0.330	NT	NT	NT	36.7	0.0773	NT	NT	1.00 U	0.167	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-24_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	2.67	98.0	NT	0.263	NT	NT	NT	29.7	0.0222	NT	NT	1.00 U	0.267	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-25_0-1.5	0-1.5	11/14/12	Soil	NT	3.31	115	NT	0.539	NT	NT	NT	86.7	0.0330	NT	NT	1.00 U	0.507	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-25_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	5.14	180	NT	0.100 U	NT	NT	NT	16.1	0.0297	NT	NT	1.00 U	0.100 U	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-26_0-1.5	0-1.5	11/14/12	Soil	NT	2.11	71.9	NT	0.634	NT	NT	NT	139	0.0227	NT	NT	1.00 U	0.871	NT	NT	NT	NT	NT	NT	0.122
AMEC November 2012	B-26_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	4.74	147	NT	0.107	NT	NT	NT	13.6	0.0210	NT	NT	1.00 U	0.100 U	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-27_0-1.5	0-1.5	11/14/12	Soil	NT	6.16	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-27_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	4.65	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-28_0-1.5	0-1.5	11/14/12	Soil	NT	8.33	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-28_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	3.80	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-29_0-1.5	0-1.5	11/14/12	Soil	NT	2.61	NT	NT	NT	NT	NT	NT	253	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	1.07

TABLE 2
Metals Data Summary - Soil
Kenton Foundry (Former) and Adjoining Railroad Spur (Former) Properties

Investigation Name	Sample ID	Depth Interval (ft bgs)	Sample Date	Sample Matrix	Metals																	TCLP			
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Arsenic	Cadmium	Copper	Lead
					mg/kg																	mg/L	mg/L	mg/L	mg/L
			DEQ Clean Fill Screening Level		0.56	8.8	790	21	0.63	76	43	34	28	0.23	2.1	47	0.71	4.2	5.2	180	180	NA	NA	NA	NA
Soil Ingestion, Dermal Contact, and Inhalation RBCs			Occupational Worker		NA	1.7	190,000	2,000	510	NA	NA	41,000	800	310	NA	20,000	NA	5,100	NA	NA	NA	NA	NA	NA	NA
			Construction Worker		NA	13	60,000	610	150	>Max	NA	12,000	800	93	NA	6,100	NA	1,500	NA	NA	NA	NA	NA	NA	NA
AMEC November 2012	B-29_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	1.97	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-30_0-1.5	0-1.5	11/14/12	Soil	NT	2.70	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-30_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	3.58	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-31_0-1.5	0-1.5	11/14/12	Soil	NT	3.97	73.0	NT	5.38	NT	NT	8,590	1,030	0.130	NT	NT	1.00 U	2.35	NT	NT	4,660	NT	NT	NT	10.3
AMEC November 2012	B-31_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	3.90	198	NT	0.167	NT	NT	NT	56.8	0.185	NT	NT	1.00 U	0.100 U	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-32_0-1.5	0-1.5	11/14/12	Soil	NT	5.71	123	NT	4.22	NT	NT	NT	1,860	0.201	NT	NT	1.00 U	48.3	NT	NT	NT	NT	NT	NT	0.113
AMEC November 2012	B-32_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	3.38	121	NT	0.121	NT	NT	NT	9.79	0.0177	NT	NT	1.00 U	0.100 U	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-35_0-1.5	0-1.5	11/14/12	Soil	NT	4.35	110	NT	0.566	NT	NT	NT	80.2	0.0335	NT	NT	1.00 U	0.843	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-35_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	2.53	94.2	NT	0.100 U	NT	NT	NT	5.40	0.0107	NT	NT	1.00 U	0.100 U	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-36_0-1.5	0-1.5	11/14/12	Soil	NT	4.06	101	NT	1.24	NT	NT	NT	124	0.0347	NT	NT	1.00 U	0.570	NT	NT	NT	NT	NT	NT	0.0920
AMEC November 2012	B-36_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	7.35	148	NT	0.141	NT	NT	NT	15.9	0.0216	NT	NT	1.00 U	0.100 U	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-38_0-1.5	0-1.5	11/14/12	Soil	NT	8.63	NT	NT	NT	NT	NT	NT	227	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0630
AMEC November 2012	B-38_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	3.56	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-40_0-1.5	0-1.5	11/14/12	Soil	NT	5.39	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-40_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	7.99	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC January 2013	B-63_0-1.5	0-1.5	01/04/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	1,520	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	3.87
AMEC January 2013	B-63_1.5-3.0	1.5-3.0	01/04/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	46.4	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0500 U
AMEC January 2013	B-64_0-1.5	0-1.5	01/04/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	90.7	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0500 U
AMEC January 2013	B-64_1.5-3.0	1.5-3.0	01/04/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	6.86	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0500 U
AMEC January 2013	B-65_0-1.5	0-1.5	01/04/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	24.0	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.379
AMEC January 2013	B-65_1.5-3.0	1.5-3.0	01/04/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	9.96	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0500 U
Confirmation Sampling	02252013_CS	5.5	02/25/13	Soil	NT	6.05	149	NT	0.10 U	20.9	NT	NT	9.11	0.0245	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	02262013-CS	5.5	02/26/13	Soil	NT	7.01	161	NT	0.10 U	23.8	NT	NT	9.75	0.0275	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	03012013-CS	5.5	03/01/13	Soil	NT	7.48	180	NT	0.10 U	28.0	NT	NT	12.6	0.0250	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	03012013-CS-2	5.5	03/01/13	Soil	NT	6.41	182	NT	0.10 U	27.3	NT	NT	11.4	0.0214	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	03052013_CS	5.5	03/05/13	Soil	NT	4.12	153	NT	0.10 U	21.3	NT	NT	8.29	0.0159	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	03062013CS@0900	5.5	03/06/13	Soil	NT	4.16	157	NT	0.10 U	21.4	NT	NT	7.85	0.0166	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	03072013_CS	5.5	03/07/13	Soil	NT	4.03	140	NT	0.10 U	20.1	NT	NT	9.12	0.0138	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	2-26-2013-CS2	5.5	02/26/13	Soil	NT	5.20	157	NT	0.10 U	21.6	NT	NT	9.97	0.0253	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	2-27-2013-CB1	5.5	02/27/13	Soil	NT	6.24	179	NT	0.10 U	26.0	NT	NT	10.3	0.0182	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	2-27-2013-CB2	5.5	02/27/13	Soil	NT	4.27	142	NT	0.10 U	18.9	NT	NT	7.90	0.0153	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	2-27-2013-CB3	5.5	02/27/13	Soil	NT	5.91	154	NT	0.10 U	23.9	NT	NT	10.2	0.0183	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	2-28-2013-CS1	5.5	02/28/13	Soil	NT	5.86	158	NT	0.10 U	24.3	NT	NT	10.3	0.0187	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	SW-E-1	1.5	02/27/13	Soil	NT	5.45	172	NT	0.105	23.9	NT	NT	10.1	0.0314	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	SW-E-2	1.5	02/28/13	Soil	NT	6.34	164	NT	0.119	24.5	NT	NT	14.2	0.0243	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	SW-E-3	1.5	03/01/13	Soil	NT	8.61	217	NT	0.108	33.4	NT	NT	15.5	0.0293	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	SW-E-4	1.5	03/07/13	Soil	NT	6.97	234	NT	0.101	33.2	NT	NT	14.3	0.0262	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	SW-N-1	1.5	03/06/13	Soil	NT	6.40	198	NT	0.10 U	29.9	NT	NT	13.1	0.0261	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	SW-S-1	1.5	02/26/13	Soil	NT	5.98	156	NT	0.123	22.6	NT	NT	10.1	0.0285	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	SW-S-2	1.5	02/27/13	Soil	NT	3.76	135	NT	0.107	22.2	NT	NT	13.9	0.0167	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	SW-W-1	1.5	02/26/13	Soil	NT	5.00	157	NT	0.102	20.7	NT	NT	8.21	0.0185	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	SW-W-2	1.5	02/27/13	Soil	NT	6.16	168	NT	0.10 U	24.1	NT	NT	10.6	0.0190	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	SW-W-3	1.5	03/01/13	Soil	NT	6.01	189	NT	0.172	27.0	NT	NT	13.3	0.0213	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	SW-W-4	1.5	03/05/13	Soil	NT	7.86	182	NT	0.207	28.4	NT	NT	13.8	0.0284	NT	NT	1.00 U	0.10 U	NT	NT	NT	NT	NT	NT	NT
Confirmation Sampling	B31-Sidewall	1	02/22/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	127	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.050 U
Confirmation Sampling	B31-Bottom	2	02/22/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	34.2	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.050 U
Confirmation Sampling	RCRA1-Sidewall	1	02/22/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	6.98	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0565

TABLE 2
Metals Data Summary - Soil
Kenton Foundry (Former) and Adjoining Railroad Spur (Former) Properties

Investigation Name	Sample ID	Depth Interval (ft bgs)	Sample Date	Sample Matrix	Metals																	TCLP			
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Arsenic	Cadmium	Copper	Lead
					mg/kg																	mg/L	mg/L	mg/L	mg/L
			DEQ Clean Fill Screening Level		0.56	8.8	790	21	0.63	76	43	34	28	0.23	2.1	47	0.71	4.2	5.2	180	180	NA	NA	NA	NA
Soil Ingestion, Dermal Contact, and Inhalation RBCs			Occupational Worker		NA	1.7	190,000	2,000	510	NA	NA	41,000	800	310	NA	20,000	NA	5,100	NA	NA	NA	NA	NA	NA	NA
			Construction Worker		NA	13	60,000	610	150	>Max	NA	12,000	800	93	NA	6,100	NA	1,500	NA	NA	NA	NA	NA	NA	NA
Confirmation Sampling	RCRA1-Bottom	2	03/04/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	**7.10**	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.050 U
Alpha - Heating Oil Tank	PFE @ 69"	5.75	03/04/13	Soil	NT	**2.36**	**164**	NT	0.1 U	**21.3**	NT	NT	**7.71**	**0.0109**	NT	NT	1 U	0.1 U	NT	NT	NT	NT	NT	NT	NT
Alpha - Heating Oil Tank	PFW @ 69"	5.75	03/04/13	Soil	NT	**3.53**	**178**	NT	**0.172**	**24.2**	NT	NT	**10.2**	**0.0189**	NT	NT	1 U	0.1 U	NT	NT	NT	NT	NT	NT	NT
Alpha - Heating Oil Tank	Tank Contents	-	03/04/13	Soil	NT	**2.83**	**127**	NT	**0.887**	**22**	NT	**808**	**90.5**	**0.0252**	NT	NT	1 U	**0.273**	NT	NT	**764**	NT	NT	NT	NT
AMEC 2011 TFoundry	CB	SED	09/24/10	Sediment	NT	**17.6**	NT	**0.310**	**14.4**	NT	**92.4**	NT	**7,420**	**1,210**	**0.281**	NT	**317**	**5.60**	**4.21**	NT	**3,180**	0.050 U	NT	NT	**7.03**
			Portland Harbor JSCS Upland Soil / Stormwater Sediment SLV		64.0	7.00	NA	NA	1.00	111	NA	149	17.0	0.0700	NA	48.6	2.00	5.00	NA	NA	459	NA	NA	NA	NA

Notes:
Bold = constituent detected at or above the method reporting limit
U = constituent not detected at or above the method reporting limit shown
Shaded cells indicate a value that exceeds one or more Regulatory Screening Criteria for that contaminant.
<Back = RBC is less than background concentration
>Max = The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario.

exceeds DEQ Clean Fill Screening Level
exceeds Occupational Worker RBC
exceeds Excavation Worker RBC
exceeds Portland Harbor JSCS Upland Soil / Stormwater Sediment, Table 3-1, 07/16/07, CB (09/24/10) is the only sample screened against the JSCS SLVs

mg/kg = milligrams per kilogram
mg/L = milligrams per liter
DEQ = Oregon Department of Environmental Quality
ID = identification
NA = No RBC has been published by DEQ for this analyte
NT = Not Tested
TCLPs = Toxicity characteristic leaching procedure
RBC = Risk-Based Concentration
SED = Sediment (not subsurface soil)
SLV = DEQ JSCS Screemomg Level Value

TABLE 3
Semi-Volatile Organic Compound Data Summary - Soil
Kenton Foundry (Former) and Adjoining Railroad Spur (Former) Properties

Investigation Name	Sample ID	Sample Depth (bgs)	Sample Date	Matrix	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3,3'-Dichlorobenzidine	3-Nitroaniline	4,6-Dinitro-2-methylphenol	4-Bromophenylphenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenylphenyl ether	4-Methylphenol	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)pyrene	Benzo(k)fluoranthene	Benzoic acid	Benzyl alcohol	Bis(2-chloroethoxy) methane
					µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
DEQ Clean Fill Screening Level					407	70,000	NA	81	4,000	1,900	20,000	20,000	20,000	35.4	4,200	NA	60,000	310,000	NA	5,646	NA	28	70,000	276.6	NA	NA	12	NA	NA	121.8	NA	29,000	NA	29,000	150	15	150	NA	1,100	NA	16,020	402
Soil Ingestion, Dermal Contact, and Inhalation RBCs			Occupational Worker		NA	35,000,000	NA	63,000	NA	200,000	NA	NA	NA	NA	770,000	NA	NA	NA	NA	NA	NA	4,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	61,000,000	NA	310,000,000	2,700	270	2,700	NA	27,000	NA	NA	NA
			Construction Worker		NA	19,000,000	NA	1,200,000	NA	240,000	NA	NA	NA	NA	240,000	NA	NA	NA	NA	NA	NA	37,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	19,000	NA	93,000,000	21,000	2,100	21,000	NA	210,000	NA	NA	NA
AMEC 2011 TFoundry	B1 0-1.5	0-1.5	09/24/10	Soil	10 U	10 U	10 U	10 U	10 U	10 U	10 U	50 U	200 U	10 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	100 U	20 U	100.0 U	10 U	10 U	10 U	10 U	10 U	20 U	100 U	**21**	**49**	**35**	**93**	**190**	**270**	**250**	**84**	200 U	20 U	10 U
AMEC 2011 TFoundry	B2 0-1.5	0-1.5	09/23/10	Soil	180 U	180 U	180 U	180 U	180 U	180 U	180 U	880 U	3,500 U	180 U	180 U	180 U	180 U	**310**	180 U	350 U	180 U	1,800 U	350 U	1,800 U	180 U	180 U	180 U	180 U	180 U	350 U	1800 U	180 U	180 U	180 U	180 U	180 U	**210**	180 U	180 U	3,500 U	350 U	180 U
AMEC 2011 TFoundry	B3 0-2	0-2	09/23/10	Soil	100 U	100 U	100 U	100 U	100 U	100 U	100 U	500 U	2,000 U	100 U	100 U	100 U	100 U	**270**	100.0 U	200 U	100.0 U	1,000 U	200 U	1,000 U	100 U	100 U	100 U	100 U	100 U	200 U	1000 U	100 U	100 U	100 U	100 U	100 U	**110**	100 U	100 U	2,000 U	200 U	100 U
AMEC 2011 TFoundry	B4 0-1.5	0-1.5	09/23/10	Soil	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	32 U	130 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	13 U	6.3 U	63 U	13 U	63.0 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	13 U	63 U	6.3 U	**19**	**18**	**90**	**130**	**220**	**140**	**57**	130 U	13 U	6.3 U
AMEC 2011 TFoundry	B5 0-1.5	0-1.5	09/24/10	Soil	61 U	61 U	61 U	61 U	61 U	61 U	61 U	310 U	1,300 U	61 U	61 U	61 U	61 U	61 U	61 U	130 U	61 U	610 U	130 U	610 U	61 U	61 U	61 U	61 U	61 U	130 U	610 U	61 U	61 U	61 U	61 U	61 U	61 U	61 U	61 U	1,300 U	130 U	61 U
AMEC 2011 TFoundry	B6 0-1.5	0-1.5	09/24/10	Soil	33 U	33 U	33 U	33 U	33 U	33 U	33 U	170 U	650 U	33 U	33 U	33 U	33 U	33 U	33 U	65 U	33 U	330 U	65 U	330 U	33 U	33 U	33 U	33 U	33 U	65 U	330 U	33 U	33 U	33 U	**39**	**39**	**73**	**60**	33 U	650 U	65 U	33 U
AMEC 2011 TFoundry	B6 7.5-8.5	7.5-8.5	09/24/10	Soil	170 U	170 U	170 U	170 U	170 U	170 U	170 U	830 U	3,300 U	170 U	170 U	170 U	170 U	**4,400**	170 U	330 U	170 U	1,700 U	330 U	1,700 U	170 U	170 U	170 U	170 U	170 U	330 U	1700 U	270 U	210 U	170 U	170 U	170 U	170 U	170 U	170 U	3,300 U	330 U	170 U
AMEC 2011 TFoundry	B7 0-1.5	0-1.5	09/23/10	Soil	67 U	67 U	67 U	67 U	67 U	67 U	67 U	340 U	1,400 U	67 U	67 U	67 U	67 U	67 U	67 U	140 U	67 U	670 U	140 U	670 U	67 U	67 U	67 U	67 U	67 U	140 U	670 U	67 U	67 U	67 U	67 U	67 U	67 U	67 U	67 U	1,400 U	140 U	67 U
AMEC 2011 TFoundry	B8 0-1.5	0-1.5	09/23/10	Soil	310 U	310 U	310 U	310 U	310 U	310 U	310 U	1,600 U	6,100 U	310 U	310 U	310 U	310 U	310 U	310 U	610 U	310 U	3,100 U	610 U	3,100 U	310 U	310 U	310 U	310 U	310 U	610 U	3100 U	310 U	310 U	310 U	**700**	**600**	**760**	**500**	310 U	6,100 U	610 U	310 U
AMEC 2011 TFoundry	B9 0-1.5	0-1.5	09/24/10	Soil	33 U	33 U	33 U	33 U	33 U	33 U	33 U	170 U	650 U	33 U	33 U	33 U	33 U	33 U	33 U	65 U	33 U	330 U	65 U	330 U	33 U	33 U	33 U	33 U	33 U	65 U	330 U	33 U	**160**	**260**	**710**	**700**	**680**	**380**	**260**	650 U	65 U	33 U
AMEC 2011 TFoundry	B10 0-1.5	0-1.5	09/23/10	Soil	63 U	63 U	63 U	63 U	63 U	63 U	63 U	320 U	1,300 U	63 U	63 U	63 U	63 U	63 U	63 U	130 U	63 U	630 U	130 U	630 U	63 U	63 U	63 U	63 U	63 U	130 U	630 U	63 U	63 U	**86**	**220**	**340**	**420**	**310**	**140**	1,300 U	130 U	63 U
AMEC 2011 TFoundry	D1	0-0.5	09/23/10	Soil	62 U	62 U	62 U	62 U	62 U	62 U	62 U	310 U	1,300 U	62 U	62 U	62 U	62 U	62 U	62 U	130 U	62 U	620 U	130 U	620 U	62 U	62 U	62 U	62 U	62 U	130 U	620 U	62 U	62 U	62 U	62 U	**71**	**110**	**81**	62 U	1,300 U	130 U	62 U
AMEC 2011 TFoundry	D2	0-0.25	09/24/10	Sediment	1,500 U	1,500 U	1,500 U	1,500 U	1,500 U	1,500 U	1,500 U	7,100 U	29,000 U	1,500 U	1,500 U	1,500 U	1,500 U	1,500 U	1,500 U	2,900 U	1,500 U	15,000 U	2,900 U	15,000 U	1,500 U	1,500 U	1,500 U	1,500 U	1,500 U	2,900 U	15,000 U	1,500 U	1,500 U	1,500 U	1,500 U	1,500 U	1,500 U	1,500 U	1,500 U	29,000 U	2,900 U	1,500 U
AMEC 2011 TFoundry	D3	0-0.5	09/24/10	Soil	170 U	170 U	170 U	170 U	170 U	170 U	170 U	840 U	3,400 U	170 U	170 U	170 U	170 U	170 U	170 U	340 U	170 U	1,700 U	340 U	1,700 U	170 U	170 U	170 U	170 U	170 U	340 U	1,700 U	170 U	**550**	**460**	**1,800**	**4,400**	**5,200**	**4,500**	**1,700**	3,400 U	340 U	170 U
AMEC 2012 Tfoundry Phase II	B-12_0-1.5	0-1.5	05/21/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	20 U	20 U	20 U	10 U	**15**	**22**	NT	10 U	NT	NT	NT
AMEC 2012 Tfoundry Phase II	B-12_1.5-3.0	1.5-3.0	05/21/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	20 U	20 U	20 U	10 U	10 U	**15**	NT	10 U	NT	NT	NT
AMEC 2012 Tfoundry Phase II	B-15_0-1.5	0-1.5	05/21/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	20 U	20 U	20 U	**15**	**23**	**31**	NT	10 U	NT	NT	NT
AMEC 2012 Tfoundry Phase II	B-15_1.5-3.0	1.5-3.0	05/21/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	20.0 U	**27.0**	**23.0**	**49.0**	**67.0**	**100.0**	NT	**31.0**	NT	NT	NT
AMEC November 2012	B-24_0-1.5	0-1.5	11/14/12	Soil	2.60 U	2.40 U	2.30 U	2.50 U	3.00 U	3.00 U	2.60 U	6.30 U	29.0 U	2.50 U	2.90 U	3.20 U	3.00 U	2.80 U	4.10 U	3.30 U	4.00 U	4.10 U	4.40 U	39.0 U	3.10 U	2.90 U	2.60 U	3.20 U	4.50 U	3.80 U	7.70 U	3.20 U	2.60 U	3.20 U	**5.10 J**	**7.50 J**	**10.0**	**9.50 J**	**4.10 J**	96.0 U	4.90 U	2.80 U
AMEC November 2012	B-24_1.5-3.0	1.5-3.0	11/14/12	Soil	2.60 U	2.40 U	2.30 U	2.50 U	3.00 U	3.00 U	2.60 U	6.30 U	29.0 U	2.50 U	2.90 U	3.20 U	3.00 U	2.80 U	4.10 U	3.30 U	4.00 U	4.10 U	4.40 U	39.0 U	3.10 U	2.90 U	2.60 U	3.20 U	4.50 U	3.80 U	7.70 U	3.20 U	2.60 U	3.20 U	3.60 U	**4.50 J**	**6.00 J**	**6.60 J**	4.00 U	96.0 U	4.90 U	2.80 U
AMEC November 2012	B-25_0-1.5	0-1.5	11/14/12	Soil	13.0 U	12.0 U	12.0 U	13.0 U	15.0 U	15.0 U	13.0 U	32.0 U	150 U	13.0 U	15.0 U	16.0 U	15.0 U	14.0 U	21.0 U	17.0 U	20.0 U	21.0 U	22.0 U	200 U	16.0 U	15.0 U	13.0 U	16.0 U	23.0 U	19.0 U	39.0 U	16.0 U	13.0 U	**20.0 JD**	**57.0 D**	**60.0 D**	**84.0 D**	**51.0 D**	**31.0 JD**	480 U	25.0 U	14.0 U
AMEC November 2012	B-25_1.5-3.0	1.5-3.0	11/14/12	Soil	2.60 U	2.40 U	2.30 U	2.50 U	3.00 U	3.00 U	2.60 U	6.30 U	29.0 U	2.50 U	2.90 U	3.20 U	3.00 U	2.80 U	4.10 U	3.30 U	4.00 U	4.10 U	4.40 U	39.0 U	3.10 U	2.90 U	2.60 U	3.20 U	4.50 U	3.80 U	7.70 U	3.20 U	2.60 U	3.20 U	3.60 U	3.60 U	3.40 U	**3.80 J**	4.00 U	96.0 U	4.90 U	2.80 U
AMEC November 2012	B-26_0-1.5	0-1.5	11/14/12	Soil	13.0 U	12.0 U	12.0 U	13.0 U	15.0 U	15.0 U	13.0 U	32.0 U	150 U	13.0 U	15.0 U	16.0 U	15.0 U	14.0 U	21.0 U	17.0 U	20.0 U	21.0 U	22.0 U	200 U	16.0 U	15.0 U	13.0 U	16.0 U	23.0 U	19.0 U	39.0 U	16.0 U	13.0 U	16.0 U	**57.0 D**	**59.0 D**	**72.0 D**	**41.0 JD**	**32.0 JD**	480 U	25.0 U	14.0 U
AMEC November 2012	B-26_1.5-3.0	1.5-3.0	11/14/12	Soil	2.60 U	2.40 U	2.30 U	2.50 U	3.00 U	3.00 U	2.60 U	6.30 U	29.0 U	2.50 U	2.90 U	3.20 U	3.00 U	2.80 U	4.10 U	3.30 U	4.00 U	4.10 U	4.40 U	39.0 U	3.10 U	2.90 U	2.60 U	3.20 U	4.50 U	3.80 U	7.70 U	3.20 U	2.60 U	3.20 U	**11.0**	**32.0**	**30.0**	**51.0**	**8.90 J**	96.0 U	4.90 U	2.80 U
AMEC November 2012	B-31_0-1.5	0-1.5	11/14/12	Soil	26.0 U	24.0 U	23.0 U	25.0 U	30.0 U	30.0 U	26.0 U	63.0 U	290 U	25.0 U	29.0 U	32.0 U	30.0 U	28.0 U	41.0 U	33.0 U	40.0 U	41.0 U	44.0 U	390 U	31.0 U	29.0 U	26.0 U	32.0 U	45.0 U	38.0 U	77.0 U	32.0 U	26.0 U	32.0 U	**59.0 JD**	**81.0 JD**	**130 D**	**90.0 JD**	**49.0 JD**	960 U	49.0 U	28.0 U
AMEC November 2012	B-31_1.5-3.0	1.5-3.0	11/14/12	Soil	2.60 U	2.40 U	2.30 U	2.50 U	3.00 U	3.00 U	2.60 U	6.30 U	29.0 U	2.50 U	2.90 U	3.20 U	3.00 U	2.80 U	4.10 U	3.30 U	4.00 U	4.10 U	4.40 U	39.0 U	3.10 U	2.90 U	2.60 U	3.20 U	4.50 U	3.80 U	7.70 U	3.20 U	**7.80 J**	**6.80 J**	**24.0**	**37.0**	**37.0**	**33.0**	**13.0**	96.0 U	4.90 U	2.80 U
AMEC November 2012	B-32_0-1.5	0-1.5	11/14/12	Soil	26.0 U	24.0 U	23.0 U	25.0 U	30.0 U	30.0 U	26.0 U	63.0 U	290 U	25.0 U	29.0 U	32.0 U	30.0 U	28.0 U	41.0 U	33.0 U	40.0 U	41.0 U	44.0 U	390 U	31.0 U	29.0 U	26.0 U	32.0 U	45.0 U	38.0 U	77.0 U	32.0 U	26.0 U	32.0 U	**65.0 JD**	**71.0 JD**	**98.0 JD**	37.0 U	40.0 U	960 U	49.0 U	28.0 U
AMEC November 2012	B-32_1.5-3.0	1.5-3.0	11/14/12	Soil	2.60 U	2.40 U	2.30 U	2.50 U	3.00 U	3.00 U	2.60 U	6.30 U	29.0 U	2.50 U	2.90 U	3.20 U	3.00 U	2.80 U	4.10 U	3.30 U	4.00 U	4.10 U	4.40 U	39.0 U	3.10 U	2.90 U	2.60 U	3.20 U	4.50 U	3.80 U	7.70 U	3.20 U	2.60 U	3.20 U	3.60 U	**4.30 J**	**6.40 J**	3.70 U	4.00 U	96.0 U	4.90 U	2.80 U
AMEC November 2012	B-35_0-1.5	0-1.5	11/14/12	Soil	2.60 U	2.40 U	2.30 U	2.50 U	3.00 U	3.00 U	2.60 U	6.30 U	29.0 U	2.50 U	2.90 U	3.20 U	3.00 U	**35.0**	4.10 U	3.30 U	4.00 U	4.10 U	4.40 U	39.0 U	3.10 U	2.90 U	2.60 U	3.20 U	4.50 U	3.80 U	7.70 U	3.20 U	**9.00 J**	**11.0**	**13.0**	**18.0**	**32.0**	3.70 U	**5.40 J**	96.0 U	4.90 U	2.80 U
AMEC November 2012	B-35_1.5-3.0	1.5-3.0	11/14/12	Soil	2.60 U	2.40 U	2.30 U	2.50 U	3.00 U	3.00 U	2.60 U	6.30 U	29.0 U	2.50 U	2.90 U	3.20 U	3.00 U	2.80 U	4.10 U	3.30 U	4.00 U	4.10 U	4.40 U	39.0 U	3.10 U	2.90 U	2.60 U	3.20 U	4.50 U	3.80 U	7.70 U	3.20 U	2.60 U	3.20 U	3.60 U	3.60 U	3.40 U	3.70 U	4.00 U	96.0 U	4.90 U	2.80 U
AMEC November 2012	B-36_0-1.5	0-1.5	11/14/12	Soil	2.60 U	2.40 U	2.30 U	2.50 U	3.00 U	3.00 U	2.60 U	6.30 U	29.0 U	2.50 U	2.90 U	3.20 U	3.00 U	**8.60 J**	4.10 U	3.30 U	4.00 U	4.10 U	4.40 U	39.0 U	3.10 U	2.90 U	2.60 U	3.20 U	4.50 U	3.80 U	7.70 U	3.20 U	**3.80 J**	**5.50 J**	**11.0**	**11.0**	**41.0 X**	3.70 U	4.00 UX	**120 J**	4.90 U	2.80 U
AMEC November 2012	B-36_1.5-3.0	1.5-3.0	11/14/12	Soil	2.60 U	2.40 U	2.30 U	2.50 U	3.00 U	3.00 U	2.60 U	6.30 U	29.0 U	2.50 U	2.90 U	3.20 U	3.00 U	2.80 U	4.10 U	3.30 U	4.00 U	4.10 U	4.40 U	39.0 U	3.10 U	2.90 U	2.60 U	3.20 U	4.50 U	3.80 U	7.70 U	3.20 U	2.60 U	3.20 U	**4.20 J**	**3.70 J**	**11.0**	3.70 U	4.00 U	96.0 U	4.90 U	2.80 U
AMEC November 2012	B-37_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	**76.0**	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-37_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	**21.0**	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-38_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	**350**	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-38_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	10.0 U	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-39_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	10.0 U	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-39_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	10.0 U	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-40_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	10.0 U	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-40_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	10.0 U	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-41_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	**710**	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-41_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	**10.0**	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-43_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	20.0 U	20.0 U	20.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	NT	NT	NT
AMEC November 2012	B-43_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	20.0 U	20.0 U	20.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	NT	NT	NT
AMEC November 2012	B-44_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	20.0 U	20.0 U	20.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	NT	NT	NT
AMEC November 2012	B-44_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	20.0 U	20.0 U	20.0 U	10.0 U	**12.0**	**14.0**	10.0 U	10.0 U	NT	NT	NT
AMEC November 2012	B-45_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	10.0 U	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-45_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	10.0 U	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-46_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	**180**	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-46_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	10.0 U	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-48_0-3.0	0-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	40 U	**45**	**58**	**100**	**50**	**76**	**170**	**23**	NT	NT	NT
AMEC November 2012	B-48_3.0-5.0	3.0-5.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	20 U	**24**	**28**	**57**	**21**	**35**	**86**	**12**	NT	NT	NT
Confirmation Sampling	02252013_CS	5.5	02/25/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	02262013-CS	5.5	02/26/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	03012013-CS	5.5	03/01/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	03012013-CS-2	5.5	03/01/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	**0.014**	**0.014**	**0.011**	0.01 U	NT	NT	NT
Confirmation Sampling	03052013_CS	5.5	03/05/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	03062013CS@0900	5.5	03/06/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	03072013_CS	5.5	03/07/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	2-26-2013-CS2	5.5	02/26/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	2-27-2013-CB1	5.5	02/27/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	2-27-2013-CB2	5.5	02/27/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	2-27-2013-CB3	5.5	02/27/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	2-28-2013-CS1	5.5	02/28/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	SW-E-1	1.5	02/27/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	SW-E-2	1.5	02/28/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	SW-E-3	1.5	03/01/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	SW-E-4	1.5	03/07/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	SW-N-1	1.5	03/06/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	SW-S-1	1.5	02/26/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	p	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	SW-S-2	1.5	02/27/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	SW-W-1	1.5	02/26/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	SW-W-2	1.5	02/27/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	SW-W-3	1.5	03/01/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Confirmation Sampling	SW-W-4	1.5	03/05/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.02 U	0.02 U	0.02 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Alpha - Heating Oil Tank	PFE @ 69"	5.75	03/04/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.50 U	0.50 U	0.50 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Alpha - Heating Oil Tank	PFE-9'	9	03/05/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	**5.4**	0.020 U	6.0 U	**0.037**	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Alpha - Heating Oil Tank	PFW @ 69"	5.75	03/04/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.020 U	0.020 U	0.020 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Alpha - Heating Oil Tank	PFW-9'	9	03/05/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	**0.25**	0.020 U	0.40 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Alpha - Heating Oil Tank	PV-19'	19	03/05/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	**0.41**	0.020 U	0.50 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Alpha - Heating Oil Tank	PWE-7'	7	03/05/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.020 U	0.020 U	0.10 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Alpha - Heating Oil Tank	PWN-7'	7	03/05/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	**0.65**	0.020 U	1.0 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Alpha - Heating Oil Tank	PWS-7'	7	03/05/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	**0.23**	0.020 U	1.5 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Alpha - Heating Oil Tank	PWW-7'	7	03/05/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	**8.2**	0.020 U	10 U	**0.021**	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Alpha - Heating Oil Tank	Tank Bottom	5.5	03/01/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	1.5 U	1.5 U	1.5 U	**0.037**	0.01 U	0.01 U	0.01 U	0.01 U	NT	NT	NT
Alpha - Heating Oil Tank	Tank Contents	5.5	03/04/13	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.50 U	0.50 U	0.50 U	**0.028**	**0.017**	**0.030**	**0.016**	0.01 U	NT	NT	NT
AMEC 2011 TFoundry	CB	SED	09/24/10	Sediment	270 U	270 U	270 U	270 U	270 U	270 U	270 U	1,400 U	5,400 U	270 U	270 U	270 U	270 U	270 U	270 U	540 U	270 U	2,700 U	540 U	2,700 U	270 U	270 U	270 U	270 U	270 U	540 U	2,700 U	270 U	270 U	270 U	270 U	**270**	**480**	**420**	270 U	5,400 U	540 U	270 U
Portland Harbor JSCS Upland Soil / Stormwater Sediment SLV					9,200	1,700	300	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	300	200	845	1,050	1,450	NA	300	13,000	NA	NA	NA

Notes:
Bold = constituent detected at or above the reporting limit
U = constituent not detected at or above the reporting limit shown
J = estimated result
>Max = The constituent risk-based screening concentration (RBC) for this pathway is greater than 100,000 mg/kg or 100,000 mg/L.
The Oregon Department of Environmental Quality (DEQ) believes it is highly unlikely that such concentrations will ever be encountered.
[1] DEQ RBCs were used for regulatory screening criteria. In these instances where a RBC has not been established, United States Environmental Protection Agency (EPA) regional screening levels were used.

Shaded Value = Stated Method Reporting Limit Exceeds one or more screening levels
- (green) exceeds DEQ Clean Fill Screening Level
- (blue) exceeds Occupational Worker RBC
- (orange) exceeds Excavation Worker RBC
- (pink) exceeds Portland Harbor JSCS Upland Soil / Stormwater Sediment, Table 3-1, 07/16/07

CB (09/24/10) is the only sample screened against the JSCS SLVs

µg/kg = microgram per kilogram
bgs = below ground surface
ft = feet
NA = No RBC has been published by DEQ for this analyte
NT = Not Tested
SED = Sediment (not subsurface soil)
SLV = Screening Level Value

TABLE 3
Semi-Volatile Organic Compound Data Summary - Soil
Kenton Foundry (Former) and Adjoining Railroad Spur (Former) Properties

Investigation Name	Sample ID	Sample Depth (bgs)	Sample Date	Matrix	Bis(2-chloroethyl) ether	Bis(2-chloroisopropyl) ether	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-cd)pyrene	Isophorone	Naphthalene	Nitrobenzene	N-Nitrosodi-n-propylamine	N-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene
					µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
				DEQ Clean Fill Screening Level	0.1	NA	4,500	260,000	14,000	15	2	100,000	200,000	NA	NA	29,000	29,000	260	67.8	10,000	510	150	1,596	87	8.4	1.2	4,500	140	NA	30,000	1,700,000
Soil Ingestion, Dermal Contact, and Inhalation				Occupational Worker	NA	NA	150,000	NA	250,000	270	NA	NA	NA	NA	NA	29,000,000	41,000,000	1,200	NA	NA	90,000	2,700	NA	23,000	NA	NA	NA	3,900	NA	NA	21,000,000
				Construction Worker	NA	NA	1,200,000	NA	2,100,000	2,100	NA	NA	NA	NA	NA	8,900,000	12,000,000	12,000	NA	NA	240,000	21,000	NA	580,000	NA	NA	NA	31,000	NA	NA	6,700,000
AMEC 2011 TFoundry	B1 0-1.5	0-1.5	09/24/10	Soil	10 U	10 U	**110**	**11**	**170**	**40**	**11**	10 U	**120**	20 U	10 U	**360**	**13**	10 U	10 U	50 U	10 U	**260**	10 U	10 U	10 U	10 U	10 U	100 U	**240**	30 U	**390**
AMEC 2011 TFoundry	B2 0-1.5	0-1.5	09/23/10	Soil	180 U	180 U	1,800 U	180 U	**320**	180 U	180 U	180 U	**330**	350 U	180 U	180 U	180 U	180 U	180 U	880 U	180 U	180 U	180 U	**1,500**	180 U	180 U	180 U	1,800 U	**310**	**4,400**	**270**
AMEC 2011 TFoundry	B3 0-2	0-2	09/23/10	Soil	100 U	100 U	1,000 U	100 U	**130**	100 U	100 U	100 U	100 U	200 U	100 U	**120**	100 U	100 U	100 U	500 U	100 U	100 U	100 U	**200**	100 U	100 U	100 U	1,000 U	**270**	300 U	**190**
AMEC 2011 TFoundry	B4 0-1.5	0-1.5	09/23/10	Soil	6.3 U	6.3 U	63.0 U	6.3 U	**140**	**26**	6.3 U	6.3 U	**100**	13 U	6.3 U	**220**	6.3 U	6.3 U	6.3 U	32 U	6.3 U	**140**	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	63 U	**40**	19 U	**200**
AMEC 2011 TFoundry	B5 0-1.5	0-1.5	09/24/10	Soil	61 U	61 U	610 U	61 U	**72**	61 U	61 U	61 U	**91**	130 U	61 U	**64**	61 U	61 U	61 U	310 U	61 U	61 U	61 U	61 U	61 U	61 U	61 U	610 U	61 U	190 U	**64**
AMEC 2011 TFoundry	B6 0-1.5	0-1.5	09/24/10	Soil	33 U	33 U	330 U	**130**	**45**	33 U	33 U	33 U	33 U	65 U	33 U	**72**	33 U	33 U	33 U	170 U	33 U	**53**	33 U	33 U	33 U	33 U	33 U	330 U	**70**	98 U	**85**
AMEC 2011 TFoundry	B6 7.5-8.5	7.5-8.5	09/24/10	Soil	170 U	170 U	1,700 U	170 U	170 U	170 U	**440**	170 U	170 U	330 U	170 U	170 U	**720**	170 U	170 U	830 U	170 U	170 U	**970**	**240**	170 U	170 U	170 U	1,700 U	**1,700**	500 U	**180**
AMEC 2011 TFoundry	B7 0-1.5	0-1.5	09/23/10	Soil	67 U	67 U	670 U	67 U	67 U	67 U	67 U	67 U	67 U	140 U	67 U	67 U	67 U	67 U	67 U	340 U	67 U	67 U	67 U	67 U	67 U	67 U	67 U	670 U	67 U	200 U	67 U
AMEC 2011 TFoundry	B8 0-1.5	0-1.5	09/23/10	Soil	310 U	310 U	3,100 U	310 U	**860**	310 U	310 U	310 U	**410**	**830**	310 U	**1,400**	310 U	310 U	310 U	1,600 U	310 U	**440**	310 U	310 U	310 U	310 U	310 U	3,100 U	**800**	920 U	**1,400**
AMEC 2011 TFoundry	B9 0-1.5	0-1.5	09/24/10	Soil	33 U	33 U	330 U	33 U	**760**	**97**	33 U	33 U	33 U	65 U	33 U	**1,500**	**75**	33 U	33 U	170 U	33 U	**390**	33 U	**43**	33 U	33 U	33 U	330 U	**740**	97 U	**1,600**
AMEC 2011 TFoundry	B10 0-1.5	0-1.5	09/23/10	Soil	63 U	63 U	630 U	63 U	**300**	**63**	63 U	63 U	**230**	**390**	63 U	**460**	63 U	63 U	63 U	320 U	63 U	**300**	63 U	63 U	63 U	63 U	63 U	630 U	**230**	190 U	**470**
AMEC 2011 TFoundry	D1	0-0.5	09/23/10	Soil	62 U	62 U	620 U	**140**	**110**	62 U	62 U	62 U	**140**	130 U	62 U	**120**	62 U	62 U	62 U	310 U	62 U	**70**	62 U	62 U	62 U	62 U	62 U	620 U	**71**	190 U	**130**
AMEC 2011 TFoundry	D2	0-0.25	09/24/10	Sediment	1,500 U	1,500 U	**35,000**	**2,000**	1,500 U	1,500 U	1,500 U	1,500 U	1,500 U	2,900 U	1,500 U	**1,600**	1,500 U	1,500 U	1,500 U	7,100 U	1,500 U	1,500 U	1,500 U	1,500 U	1,500 U	1,500 U	1,500 U	15,000 U	**1,800**	4,300 U	1,500 U
AMEC 2011 TFoundry	D3	0-0.5	09/24/10	Soil	170 U	170 U	1,700 U	**210**	**2,800**	**650**	170 U	170 U	**310**	**730**	170 U	**4,700**	170 U	170 U	170 U	840 U	170 U	**4,300**	170 U	170 U	170 U	170 U	170 U	1,700 U	**780**	510 U	**5,300**
AMEC 2012 Tfoundry Phase II	B-12_0-1.5	0-1.5	05/21/12	Soil	NT	NT	NT	NT	**12**	NT	NT	NT	NT	NT	NT	**20**	20 U	NT	NT	NT	NT	**15**	NT	40 U	NT	NT	NT	NT	20 U	NT	**19**
AMEC 2012 Tfoundry Phase II	B-12_1.5-3.0	1.5-3.0	05/21/12	Soil	NT	NT	NT	NT	10 U	NT	NT	NT	NT	NT	NT	10 U	20 U	NT	NT	NT	NT	10 U	NT	40 U	NT	NT	NT	NT	20 U	NT	10 U
AMEC 2012 Tfoundry Phase II	B-15_0-1.5	0-1.5	05/21/12	Soil	NT	NT	NT	NT	**17**	NT	NT	NT	NT	NT	NT	**30**	20 U	NT	NT	NT	NT	**20**	NT	40 U	NT	NT	NT	NT	20 U	NT	**32**
AMEC 2012 Tfoundry Phase II	B-15_1.5-3.0	1.5-3.0	05/21/12	Soil	NT	NT	NT	NT	**60.0**	NT	NT	NT	NT	NT	NT	**110**	20.0 U	NT	NT	NT	NT	**67.0**	NT	40.0 U	NT	NT	NT	NT	**51.0**	NT	**110**
AMEC November 2012	B-24_0-1.5	0-1.5	11/14/12	Soil	3.10 U	2.80 U	**40.0 J**	3.70 U	**8.00 J**	3.00 U	3.40 U	3.70 U	4.00 U	**6.50 J**	**12.0 J**	**11.0**	3.30 U	3.30 U	3.00 U	4.00 U	2.50 U	**8.50 J**	2.80 U	2.90 U	3.40 U	3.30 U	3.20 U	5.30 U	**5.90 J**	3.10 U	**10.0**
AMEC November 2012	B-24_1.5-3.0	1.5-3.0	11/14/12	Soil	3.10 U	2.80 U	8.90 U	3.70 U	**4.40 J**	3.00 U	3.40 U	3.70 U	4.00 U	**8.70 J**	**11.0 J**	**5.70 J**	3.30 U	3.30 U	3.00 U	4.00 U	2.50 U	**6.10 J**	2.80 U	2.90 U	3.40 U	3.30 U	3.20 U	5.30 U	**3.70 J**	3.10 U	**6.50 J**
AMEC November 2012	B-25_0-1.5	0-1.5	11/14/12	Soil	16.0 U	14.0 U	45.0 U	19.0 U	**76.0 D**	15.0 U	17.0 U	19.0 U	20.0 U	**47.0 JD**	16.0 U	**100.0 D**	17.0 U	17.0 U	15.0 U	20.0 U	13.0 U	**49.0 JD**	14.0 U	15.0 U	17.0 U	17.0 U	16.0 U	27.0 U	**78.0 D**	16.0 U	**100.0 D**
AMEC November 2012	B-25_1.5-3.0	1.5-3.0	11/14/12	Soil	3.10 U	2.80 U	8.90 U	3.70 U	4.10 U	3.00 U	3.40 U	3.70 U	4.00 U	4.80 U	**11.0 J**	3.70 U	3.30 U	3.30 U	3.00 U	4.00 U	2.50 U	3.20 U	2.80 U	2.90 U	3.40 U	3.30 U	3.20 U	5.30 U	3.60 U	3.10 U	3.70 U
AMEC November 2012	B-26_0-1.5	0-1.5	11/14/12	Soil	16.0 U	14.0 U	**92.0 JD**	19.0 U	**66.0 D**	15.0 U	17.0 U	19.0 U	20.0 U	24.0 U	16.0 U	**87.0 D**	17.0 U	17.0 U	15.0 U	20.0 U	13.0 U	**42.0 JD**	14.0 U	15.0 U	17.0 U	17.0 U	16.0 U	27.0 U	**50.0 D**	16.0 U	**100.0 D**
AMEC November 2012	B-26_1.5-3.0	1.5-3.0	11/14/12	Soil	3.10 U	2.80 U	8.90 U	3.70 U	**16.0**	3.00 U	3.40 U	3.70 U	4.00 U	4.80 U	**10.0 J**	**24.0**	3.30 U	3.30 U	3.00 U	4.00 U	2.50 U	**43.0**	2.80 U	2.90 U	3.40 U	3.30 U	3.20 U	5.30 U	**8.40 J**	3.10 U	**35.0**
AMEC November 2012	B-31_0-1.5	0-1.5	11/14/12	Soil	31.0 U	28.0 U	89.0 U	37.0 U	**110 D**	30.0 U	34.0 U	37.0 U	40.0 U	**75.0 JD**	32.0 U	**120 D**	33.0 U	33.0 U	30.0 U	40.0 U	25.0 U	**95.0 JD**	28.0 U	**35.0 JD**	34.0 U	33.0 U	32.0 U	53.0 U	**92.0 JD**	31.0 U	**130 D**
AMEC November 2012	B-31_1.5-3.0	1.5-3.0	11/14/12	Soil	3.10 U	2.80 U	8.90 U	3.70 U	**28.0**	**4.60 J**	3.40 U	3.70 U	4.00 U	4.80 U	**11.0 J**	**47.0**	3.30 U	3.30 U	3.00 U	4.00 U	2.50 U	**32.0**	2.80 U	**4.20 J**	3.40 U	3.30 U	3.20 U	5.30 U	**24.0**	3.10 U	**53.0**
AMEC November 2012	B-32_0-1.5	0-1.5	11/14/12	Soil	31.0 U	28.0 U	**150 JD**	37.0 U	**110 D**	30.0 U	34.0 U	37.0 U	40.0 U	48.0 U	32.0 U	**80.0 JD**	33.0 U	33.0 U	30.0 U	40.0 U	25.0 U	**55.0 JD**	28.0 U	29.0 U	34.0 U	33.0 U	32.0 U	53.0 U	**69.0 JD**	31.0 U	**110 D**
AMEC November 2012	B-32_1.5-3.0	1.5-3.0	11/14/12	Soil	3.10 U	2.80 U	8.90 U	3.70 U	**5.00 J**	3.00 U	3.40 U	3.70 U	4.00 U	4.80 U	**11.0 J**	**6.80 J**	3.30 U	3.30 U	3.00 U	4.00 U	2.50 U	**5.00 J**	2.80 U	2.90 U	3.40 U	3.30 U	3.20 U	5.30 U	**5.90 J**	3.10 U	**7.60 J**
AMEC November 2012	B-35_0-1.5	0-1.5	11/14/12	Soil	3.10 U	2.80 U	**21.0 J**	3.70 U	**29.0**	**4.80 J**	**10.0**	3.70 U	4.00 U	**31.0**	3.20 U	**26.0**	**4.00 J**	3.30 U	3.00 U	4.00 U	2.50 U	**22.0**	2.80 U	**23.0**	3.40 U	3.30 U	3.20 U	5.30 U	**110**	**3.50 J**	**28.0**
AMEC November 2012	B-35_1.5-3.0	1.5-3.0	11/14/12	Soil	3.10 U	2.80 U	8.90 U	3.70 U	4.10 U	3.00 U	3.40 U	3.70 U	4.00 U	4.80 U	**210**	3.70 U	3.30 U	3.30 U	3.00 U	4.00 U	2.50 U	3.20 U	2.80 U	2.90 U	3.40 U	3.30 U	3.20 U	**23.0 J**	3.60 U	**72.0**	3.70 U
AMEC November 2012	B-36_0-1.5	0-1.5	11/14/12	Soil	3.10 U	2.80 U	**17.0 J**	3.70 U	**28.0**	3.00 U	3.40 U	3.70 U	4.00 U	**48.0**	3.20 U	**27.0**	3.30 U	3.30 U	3.00 U	4.00 U	2.50 U	**15.0**	2.80 U	**61.0**	3.40 U	3.30 U	3.20 U	5.30 U	**20.0**	**4.30 J**	**24.0**
AMEC November 2012	B-36_1.5-3.0	1.5-3.0	11/14/12	Soil	3.10 U	2.80 U	**11.0 J**	3.70 U	**7.20 J**	3.00 U	3.40 U	3.70 U	4.00 U	4.80 U	**11.0 J**	**10.0**	3.30 U	3.30 U	3.00 U	4.00 U	2.50 U	**5.90 J**	2.80 U	2.90 U	3.40 U	3.30 U	3.20 U	5.30 U	**5.70 J**	**4.30 J**	**7.90 J**
AMEC November 2012	B-37_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-37_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-38_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-38_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-39_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-39_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-40_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-40_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-41_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-41_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-43_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	10.0 U	10.0 U	NT	NT	NT	NT	NT	10.0 U	20.0 U	NT	NT	NT	NT	10.0 U	NT	**82.0**	NT	NT	NT	NT	20.0 U	NT	10.0 U
AMEC November 2012	B-43_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	10.0 U	10.0 U	NT	NT	NT	NT	NT	10.0 U	20.0 U	NT	NT	NT	NT	10.0 U	NT	40.0 U	NT	NT	NT	NT	20.0 U	NT	10.0 U
AMEC November 2012	B-44_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	10.0 U	10.0 U	NT	NT	NT	NT	NT	10.0 U	20.0 U	NT	NT	NT	NT	10.0 U	NT	40.0 U	NT	NT	NT	NT	20.0 U	NT	10.0 U
AMEC November 2012	B-44_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	**11.0**	10.0 U	NT	NT	NT	NT	NT	**21.0**	20.0 U	NT	NT	NT	NT	10.0 U	NT	40.0 U	NT	NT	NT	NT	20.0 U	NT	**23.0**
AMEC November 2012	B-45_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-45_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-46_0-1.5	0-1.5	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-46_1.5-3.0	1.5-3.0	11/14/12	Soil	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
AMEC November 2012	B-48_0-3.0	0-3.0	11/14/12	Soil	NT	NT	NT	NT	**46**	**27**	NT	NT	NT	NT	NT	**40**	40 U	NT	NT	NT	NT	**76**	NT	80 U	NT	NT	NT	NT	40 U	NT	**78**
AMEC November 2012	B-48_3.0-5.0	3.0-5.0	11/14/12	Soil	NT	NT	NT	NT	**18**	**10**	NT	NT	NT	NT	NT	**29**	20 U	NT	NT	NT	NT	**39**	NT	40 U	NT	NT	NT	NT	20 U	NT	**27**
Confirmation Sampling	02252013_CS	5.5	02/25/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	02262013-CS	5.5	02/26/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	03012013-CS	5.5	03/01/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	03012013-CS-2	5.5	03/01/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	03052013_CS	5.5	03/05/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	03062013CS@0900	5.5	03/06/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	03072013_CS	5.5	03/07/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	2-26-2013-CS2	5.5	02/26/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	2-27-2013-CB1	5.5	02/27/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	2-27-2013-CB2	5.5	02/27/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	2-27-2013-CB3	5.5	02/27/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	2-28-2013-CS1	5.5	02/28/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	SW-E-1	1.5	02/27/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	SW-E-2	1.5	02/28/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	SW-E-3	1.5	03/01/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	SW-E-4	1.5	03/07/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	SW-N-1	1.5	03/06/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	SW-S-1	1.5	02/26/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	SW-S-2	1.5	02/27/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	SW-W-1	1.5	02/26/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	SW-W-2	1.5	02/27/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	SW-W-3	1.5	03/01/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Confirmation Sampling	SW-W-4	1.5	03/05/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.02 U	NT	NT	NT	NT	0.01 U	NT	0.04 U	NT	NT	NT	NT	0.02 U	NT	0.01 U
Alpha - Heating Oil Tank	PFE @ 69"	5.75	03/04/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.050 U	**1.1**	NT	NT	NT	NT	0.01 U	NT	0.40 U	NT	NT	NT	NT	**2.5**	NT	0.10 U
Alpha - Heating Oil Tank	PFE-9'	9	03/05/13	Soil	NT	NT	NT	NT	**0.11**	0.01 U	NT	NT	NT	NT	NT	0.50 U	**8.7**	NT	NT	NT	NT	0.01 U	NT	**16**	NT	NT	NT	NT	**30**	NT	**1.2**
Alpha - Heating Oil Tank	PFW @ 69"	5.75	03/04/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	0.020 U	NT	NT	NT	NT	0.01 U	NT	0.040 U	NT	NT	NT	NT	0.020 U	NT	0.01 U
Alpha - Heating Oil Tank	PFW-9'	9	03/05/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.020 U	**0.44**	NT	NT	NT	NT	0.01 U	NT	**1.0**	NT	NT	NT	NT	**1.4**	NT	**0.052**
Alpha - Heating Oil Tank	PV-19'	19	03/05/13	Soil	NT	NT	NT	NT	**0.017**	0.01 U	NT	NT	NT	NT	NT	0.050 U	**0.79**	NT	NT	NT	NT	0.01 U	NT	**1.5**	NT	NT	NT	NT	**2.8**	NT	**0.14**
Alpha - Heating Oil Tank	PWE-7'	7	03/05/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.01 U	**0.087**	NT	NT	NT	NT	0.01 U	NT	0.040 U	NT	NT	NT	NT	**0.27**	NT	**0.014**
Alpha - Heating Oil Tank	PWN-7'	7	03/05/13	Soil	NT	NT	NT	NT	0.01 U	0.01 U	NT	NT	NT	NT	NT	0.050 U	**1.2**	NT	NT	NT	NT	0.01 U	NT	**0.54**	NT	NT	NT	NT	**4.6**	NT	**0.15**
Alpha - Heating Oil Tank	PWS-7'	7	03/05/13	Soil	NT	NT	NT	NT	**0.028**	0.01 U	NT	NT	NT	NT	NT	0.10 U	**0.68**	NT	NT	NT	NT	0.01 U	NT	**0.18**	NT	NT	NT	NT	**3.9**	NT	**0.38**
Alpha - Heating Oil Tank	PWW-7'	7	03/05/13	Soil	NT	NT	NT	NT	**0.051**	0.01 U	NT	NT	NT	NT	NT	0.50 U	**14**	NT	NT	NT	NT	0.01 U	NT	**10**	NT	NT	NT	NT	**46**	NT	**1.2**
Alpha - Heating Oil Tank	Tank Bottom	5.5	03/01/13	Soil	NT	NT	NT	NT	**0.14**	0.01 U	NT	NT	NT	NT	NT	0.25 U	**2.8**	NT	NT	NT	NT	0.01 U	NT	1.0 U	NT	NT	NT	NT	**6.3**	NT	**0.78**
Alpha - Heating Oil Tank	Tank Contents	5.5	03/04/13	Soil	NT	NT	NT	NT	**0.063**	0.01 U	NT	NT	NT	NT	NT	0.10 U	**0.88**	NT	NT	NT	NT	**0.011**	NT	0.20 U	NT	NT	NT	NT	**1.8**	NT	0.20 U
AMEC 2011 TFoundry	CB	NA	09/24/10	Sediment	270 U	270 U	**9,300**	**3,500**	**590**	270 U	270 U	270 U	270 U	540 U	**490**	**710**	270 U	270 U	270 U	1,400 U	270 U	**290**	270 U	270 U	270 U	270 U	270 U	2,700 U	**730**	800 U	**710**
				Portland Harbor JSCS Upland Soil / Stormwater Sediment SLV	NA	NA	330	NA	1,290	1,300	NA	600	NA	60.0	NA	2,230	536	19.0	600	400	NA	100	NA	561	NA	NA	NA	250	1,170	50.0	1,520

Notes:
Bold = constituent detected at or above the reporting limit
U = constituent not detected at or above the reporting limit shown
J = estimated result
>Max = The constituent risk-based screening concentration (RBC) for this pathway is greater than 100,000 mg/kg or 100,000 mg/L.
The Oregon Department of Environmental Quality (DEQ) believes it is highly unlikely that such concentrations will ever be encountered.
[1] DEQ RBCs were used for regulatory screening criteria. In these instances where a RBC has not been established, United States Environmental Protection Agency (EPA) regional screening levels were used.

Shaded Value = Stated Method Reporting Limit Exceeds one or more screening levels
- (green) exceeds DEQ Clean Fill Screening Level
- (blue) exceeds Occupational Worker RBC
- (orange) exceeds Excavation Worker RBC
- (pink) exceeds Portland Harbor JSCS Upland Soil / Stormwater Sediment, Table 3-1, 07/16/07

CB (09/24/10) is the only sample screened against the JSCS SLVs

µg/kg = microgram per kilogram
bgs = below ground surface
ft = feet
NA = No RBC has been published by DEQ for this analyte
NT = Not Tested
SED = Sediment (not subsurface soil)
SLV = Screening Level Value

TABLE 4
Volatile Organic Compound Data Summary - Soil
Kenton Foundry (Former) and Adjoining Railroad Spur (Former) Properties

Investigation Name	Sample Name	Depth Interval (ft bgs)	Sample Date	Sample Matrix	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone
					µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
DEQ Clean Fill Screening Level					15.6	400,000	2.4	4.6	37	11,000	NA	20,000	5	407.4	16,000	0.012	0.12	70,000	1.4	9	92,000	NA	7,620	81	NA	NA
Vapor Intrusion RBCs - Occupational Worker					NA	NA	NA	NA	5,900	680,000	NA	NA	NA	NA	NA	NA	140	NA	590	NA	NA	NA	NA	17,000	NA	NA
Soil Ingestion, Dermal Contact, and Inhalation RBCs			Occupational Worker		NA	830,000,000	NA	25,000	250,000	27,000,000	NA	NA	NA	NA	2,000,000	NA	680	35,000,000	15,000	NA	10,000,000	NA	NA	63,000	NA	NA
Soil Ingestion, Dermal Contact, and Inhalation RBCs			Construction Worker		NA	>Csat	NA	53,000	2,900,000	12,000,000	NA	NA	NA	NA	2,000,000	NA	8,100	19,000,000	180,000	NA	3,100,000	NA	NA	1,200,000	NA	NA
AMEC 2011 TFoundry	B10 0-1.5	0-1.5	09/24/10	Soil	109 U	109 U	109 U	109 U	109 U	109 U	109 U	109 U	109 U	109 U	109 U	545 U	109 U	109 U	109 U	109 U	109 U	109 U	109 U	109 U	109 U	1,090 U
AMEC 2011 TFoundry	B6 0-1.5	0-1.5	09/24/10	Soil	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	582 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	1,160 U
AMEC 2011 TFoundry	B9 0-1.5	0-1.5	09/24/10	Soil	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	597 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	1,190 U
AMEC 2011 TFoundry	D3	0-1.5	09/24/10	Soil	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	579 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	1,160 U
AMEC 2011 TFoundry	B6 7.5-8.5	0-1.5	09/24/10	Soil	137 U	137 U	137 U	137 U	137 U	137 U	137 U	137 U	137 U	137 U	**459**	687 U	137 U	137 U	137 U	137 U	**379**	137 U	137 U	137 U	137 U	1,370 U
AMEC 2011 TFoundry	B5 0-1.5	0-1.5	09/24/10	Soil	124 U	124 U	124 U	124 U	124 U	124 U	124 U	124 U	124 U	124 U	124 U	619 U	124 U	124 U	124 U	124 U	124 U	124 U	124 U	124 U	124 U	1,240 U
AMEC 2011 TFoundry	D2	0-0.25	09/24/10	Sediment	102 U	102 U	102 U	102 U	102 U	102 U	102 U	102 U	102 U	102 U	102 U	510 U	102 U	102 U	102 U	102 U	102 U	102 U	102 U	102 U	102 U	1,020 U
AMEC 2011 TFoundry	B1 0-1.5	0-1.5	09/24/10	Soil	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	597 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	1,190 U
Alpha - Heating Oil Tank	PFE-9'	9	03/05/13	Soil	900 U	900 U	900 U	900 U	900 U	900 U	900 U	4,500 U	900 U	900 U	**19,000**	4,500 U	900 U	900 U	900 U	900 U	**7,600**	900 U	900 U	900 U	900 U	9,000 U
Alpha - Heating Oil Tank	PFW-9'	9	03/05/13	Soil	170 U	170 U	170 U	170 U	170 U	170 U	170 U	860 U	170 U	170 U	**2,000**	860 U	170 U	170 U	170 U	170 U	**780**	170 U	170 U	170 U	170 U	1,700 U
Alpha - Heating Oil Tank	Tank Bottom	-	03/01/13	Soil	310 U	310 U	310 U	310 U	310 U	310 U	310 U	1,600 U	310 U	310 U	310 U	1,600 U	310 U	310 U	310 U	310 U	**540**	310 U	310 U	310 U	310 U	3,100 U
AMEC 2011 TFoundry	CB	7.5-8.5	09/24/10	Sediment	229 U	229 U	229 U	229 U	229 U	229 U	229 U	229 U	229 U	229 U	229 U	1,150 U	229 U	229 U	229 U	229 U	229 U	229 U	229 U	229 U	229 U	2,290 U
Portland Harbor JSCS Upland Soil / Stormwater Sediment SLV					NA	NA	NA	NA	NA	NA	NA	NA	NA	9,200	NA	NA	NA	1,700	NA	NA	NA	300	NA	300	NA	NA

TABLE 4
Volatile Organic Compound Data Summary - Soil
Kenton Foundry (Former) and Adjoining Railroad Spur (Former) Properties

Investigation Name	Sample Name	Depth Interval (ft bgs)	Sample Date	Sample Matrix	2-Chlorotoluene	2-Hexanone	4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIB	Acetone	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane	Dibromomethane
					µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
DEQ Clean Fill Screening Level					NA	298.2	NA	NA	NA	59,520	9.3	4,068	9,360	2.5	840	98	11,640	280	6,500	320,000	3.3	2,200	1,200	NA	NA	87.6
Vapor Intrusion RBCs - Occupational Worker					NA	NA	NA	NA	NA	NA	1,200	NA	NA	1,900	550,000	17,000	1,600	NA	NA	NA	410	300,000	NA	NA	NA	NA
Soil Ingestion, Dermal Contact, and Inhalation RBCs			Occupational Worker		NA	NA	NA	NA	NA	NA	34,000	NA	NA	15,000	240,000	710,000	NA	31,000	8,300,000	>Max	25,000	25,000,000	2,000,000	NA	NA	NA
Soil Ingestion, Dermal Contact, and Inhalation RBCs			Construction Worker		NA	NA	NA	NA	NA	NA	340,000	NA	NA	210,000	2,400,000	330,000	NA	280,000	4,300,000	>Max	380,000	25,000,000	620,000	NA	NA	NA
AMEC 2011 TFoundry	B10 0-1.5	0-1.5	09/24/10	Soil	109 U	1,090 U	109 U	NT	545 U	2,730 U	21.8 U	109 U	109 U	109 U	109 U		1,090 U	109 U	109 U	109 U	109 U	545 U	109 U	109 U	109 U	109 U
AMEC 2011 TFoundry	B6 0-1.5	0-1.5	09/24/10	Soil	116 U	1,160 U	116 U	NT	582 U	2,910 U	23.3 U	116 U	116 U	116 U	116 U	545 U	1,160 U	116 U	116 U	116 U	116 U	582 U	116 U	116 U	116 U	116 U
AMEC 2011 TFoundry	B9 0-1.5	0-1.5	09/24/10	Soil	119 U	1,190 U	119 U	NT	597 U	2,980 U	23.9 U	119 U	119 U	119 U	119 U	582 U	1,190 U	119 U	119 U	119 U	119 U	597 U	119 U	119 U	119 U	119 U
AMEC 2011 TFoundry	D3	0-1.5	09/24/10	Soil	116 U	1,160 U	116 U	NT	579 U	2,890 U	23.2 U	116 U	116 U	116 U	116 U	1,150 U	1,160 U	116 U	116 U	116 U	116 U	579 U	116 U	116 U	116 U	116 U
AMEC 2011 TFoundry	B6 7.5-8.5	0-1.5	09/24/10	Soil	137 U	1,370 U	137 U	NT	687 U	3,440 U	27.5 U	137 U	137 U	137 U	137 U	579 U	1,370 U	137 U	137 U	137 U	137 U	687 U	137 U	137 U	137 U	137 U
AMEC 2011 TFoundry	B5 0-1.5	0-1.5	09/24/10	Soil	124 U	1,240 U	124 U	NT	619 U	3,090 U	24.8 U	124 U	124 U	124 U	124 U	687 U	1,240 U	124 U	124 U	124 U	124 U	619 U	124 U	124 U	124 U	124 U
AMEC 2011 TFoundry	D2	0-0.25	09/24/10	Sediment	102 U	1,020 U	102 U	NT	510 U	2,550 U	20.4 U	102 U	102 U	102 U	102 U	619 U	1,020 U	102 U	102 U	102 U	102 U	510 U	102 U	102 U	102 U	102 U
AMEC 2011 TFoundry	B1 0-1.5	0-1.5	09/24/10	Soil	119 U	1,190 U	119 U	NT	597 U	2,990 U	23.9 U	119 U	119 U	119 U	119 U	510 U	1,190 U	119 U	119 U	119 U	119 U	597 U	119 U	119 U	119 U	119 U
Alpha - Heating Oil Tank	PFE-9'	9	03/05/13	Soil	900 U	9,000 U	900 U	NT	4,500 U	23,000 U	900 U	900 U	900 U	900 U	4,500 U	4,500 U	9,000 U	900 U	900 U	900 U	900 U	4,500 U	900 U	900 U	900 U	900 U
Alpha - Heating Oil Tank	PFW-9'	9	03/05/13	Soil	170 U	1,700 U	170 U	NT	860 U	4,300 U	170 U	170 U	170 U	170 U	860 U	860 U	1,700 U	170 U	170 U	170 U	170 U	860 U	170 U	170 U	170 U	170 U
Alpha - Heating Oil Tank	Tank Bottom	-	03/01/13	Soil	310 U	3,100 U	310 U	NT	1,600 U	7,800 U	310 U	310 U	310 U	310 U	1,600 U	1,600 U	3,100 U	310 U	310 U	310 U	310 U	1,600 U	310 U	310 U	310 U	310 U
AMEC 2011 TFoundry	CB	7.5-8.5	09/24/10	Sediment	229 U	2,290 U	229 U	NT	1,150 U	5,730 U	45.8 U	229 U	229 U	229 U	229 U	597 U	2,290 U	229 U	229 U	229 U	229 U	1,150 U	229 U	229 U	229 U	229 U
Portland Harbor JSCS Upland Soil / Stormwater Sediment SLV					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 4
Volatile Organic Compound Data Summary - Soil
Kenton Foundry (Former) and Adjoining Railroad Spur (Former) Properties

Investigation Name	Sample Name	Depth Interval (ft bgs)	Sample Date	Sample Matrix	Dichlorodifluoromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl tert-butyl ether	Methylene chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	p-Isopropyltoluene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride
					µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
DEQ Clean Fill Screening Level					94,000	160	67.8	NA	25,000	920	NA	870	NA	NA	1,000	NA	NA	300,000	NA	2,400	200,000	2,500	NA	20	190,000	0.51
Vapor Intrusion RBCs - Occupational Worker					NA	12,000	NA	NA	NA	74,000	NA	99,000	NA	NA	NA	NA	NA	NA	NA	36,000	NA	NA	NA	2,800	NA	2,200
Soil Ingestion, Dermal Contact, and Inhalation RBCs			Occupational Worker		NA	140,000	NA	NA	25,000,000	1,000,000	310,000	23,000	NA	NA	25,000,000	NA	NA	120,000,000	NA	940,000	77,000,000	9,200,000	NA	46,000	120,000,000	3,900
			Excavation Worker		NA	1,600,000	NA	NA	19,000,000	10,000,000	2,700,000	580,000	NA	NA	19,000,000	NA	NA	51,000,000	NA	1,600,000	24,000,000	4,500,000	NA	120,000	63,000,000	30,000
AMEC 2011 TFoundry	B10 0-1.5	0-1.5	09/24/10	Soil	545 U	109 U	436 U	218 U	218 U	109 U	545 U	218 U	545 U	109 U	109 U	218 U	109 U	109 U	109 U	109 U	109 U	109 U	109 U	109 U	**163**	109 U
AMEC 2011 TFoundry	B6 0-1.5	0-1.5	09/24/10	Soil	582 U	116 U	465 U	233 U	233 U	116 U	582 U	233 U	582 U	116 U	116 U	233 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U
AMEC 2011 TFoundry	B9 0-1.5	0-1.5	09/24/10	Soil	597 U	119 U	477 U	239 U	239 U	119 U	597 U	239 U	597 U	119 U	119 U	239 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U
AMEC 2011 TFoundry	D3	0-1.5	09/24/10	Soil	579 U	116 U	463 U	232 U	232 U	116 U	579 U	232 U	579 U	116 U	116 U	232 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	116 U	**1,680**	116 U
AMEC 2011 TFoundry	B6 7.5-8.5	0-1.5	09/24/10	Soil	687 U	137 U	550 U	275 U	275 U	137 U	687 U	**632**	687 U	**154**	137 U	**467**	**539**	137 U	137 U	137 U	137 U	137 U	137 U	137 U	137 U	137 U
AMEC 2011 TFoundry	B5 0-1.5	0-1.5	09/24/10	Soil	619 U	124 U	495 U	248 U	248 U	124 U	619 U	248 U	619 U	124 U	124 U	248 U	124 U	124 U	124 U	124 U	124 U	124 U	124 U	124 U	124 U	124 U
AMEC 2011 TFoundry	D2	0-0.25	09/24/10	Sediment	510 U	102 U	408 U	204 U	204 U	102 U	510 U	204 U	510 U	102 U	102 U	204 U	102 U	102 U	102 U	102 U	102 U	102 U	102 U	102 U	102 U	102 U
AMEC 2011 TFoundry	B1 0-1.5	0-1.5	09/24/10	Soil	597 U	119 U	478 U	239 U	239 U	119 U	597 U	239 U	597 U	119 U	119 U	239 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U	119 U
Alpha - Heating Oil Tank	PFE-9'	9	03/05/13	Soil	4,500 U	**1,100**	3,600 U	1,800 U	**2,900**	900 U	4,500 U	**17,000**	**5,400**	**3,100**	900 U	**2,900**	**2,700**	900 U	900 U	900 U	900 U	900 U	900 U	900 U	900 U	4,500 U
Alpha - Heating Oil Tank	PFW-9'	9	03/05/13	Soil	860 U	170 U	680 U	340 U	340 U	170 U	860 U	**2,300**	860 U	**190**	170 U	340 U	**200**	170 U	170 U	170 U	170 U	170 U	170 U	170 U	170 U	860 U
Alpha - Heating Oil Tank	Tank Bottom	-	03/01/13	Soil	1,600 U	310 U	1,200 U	620 U	620 U	310 U	1,600 U	620 U	**3,400**	**440**	310 U	**1,700**	**1,400**	310 U	310 U	310 U	310 U	310 U	310 U	310 U	310 U	1,600 U
AMEC 2011 TFoundry	CB	SED	09/24/10	Sediment	1,150 U	229 U	916 U	458 U	458 U	229 U	1,150 U	458 U	1,150 U	229 U	229 U	458 U	229 U	229 U	229 U	229 U	229 U	229 U	229 U	229 U	229 U	229 U
Portland Harbor JSCS Upland Soil / Stormwater Sediment SLV					NA	NA	600	NA	NA	NA	NA	561	NA	NA	NA	NA	NA	NA	NA	500	NA	NA	NA	NA	2,100	NA

Notes:
Bold = constituent detected at or above the reporting limit
U = constituent not detected at or above the reporting limit shown
J = estimated result
NT = Not Tested
* indicates Total Xylenes result
SED = Sediment (not subsurface soil)

	exceeds DEQ Clean Fill Screening Level
	exceeds Occupational Worker Vapor Intrusion RBC
	exceeds Occupational Worker RBC
	exceeds Excavation Worker RBC
	exceeds Portland Harbor JSCS Upland Soil / Stormwater Sediment, Table 3-1, 07/16/07, CB (09/24/10) is the only sample screene

>Max = The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg. Therefore, this substance is deemed not to pose risks in this scenario.
µg/kg = micrograms per kilogram
bgs = below ground surface
DEQ = Oregon Department of Environmental Quality
ft = feet
ID = identification
JSCS = Joint Source Control Strategy
NA = No RBC has been published by DEQ for this analyte
SLV = Screening Level Value
RBC = Risk-Based Screening Concentrations

TABLE 5
Total Petroleum Hydrocarbon Data Summary - Soil
Kenton Foundry (Former) and Adjoining Railroad Spur (Former) Properties

Investigation Name	Sample Name	Depth Interval (ft bgs)	Sample Date	Sample Matrix	NWTPH-HCID Gasoline	NWTPH-HCID Diesel	NWTPH-HCID Lube Oil	NWTPH-Gx Gasoline Range Hydrocarbons	NWTPH-Dx Diesel Range Hydrocarbons[1]	NWTPH-Dx Oil Range Hydrocarbons[2]
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Soil Ingestion, Dermal Contact, and Inhalation RBCs			Occupational Worker		20,000	14,000	NA	20,000	14,000	NA
			Construction Worker		9700	4,600	NA	9,700	4,600	NA
AMEC 2011 TFoundry	B1 0-1.5	0-1.5	09/24/10	Soil	20.0 U	50.0 U	**DET**	NT	75.0 U	**577**
AMEC 2011 TFoundry	B2 0-1.5	0-1.5	09/23/10	Soil	20.0 U	**DET**	**DET**	NT	**2,220**	**7,120**
AMEC 2011 TFoundry	B2 2-4	2-4	09/23/10	Soil	NT	NT	NT	NT	**100**	50.0 U
AMEC 2011 TFoundry	B3 0-2	0-2	09/23/10	Soil	20.0 U	50.0 U	**DET**	NT	**520**	**6,600**
AMEC 2011 TFoundry	B3 3-4	3-4	09/23/10	Soil	NT	NT	NT	NT	1,500 U	**32,200**
AMEC 2011 TFoundry	B4 0-1.5	0-1.5	09/23/10	Soil	20.0 U	50.0 U	**DET**	NT	75.0 U	**520**
AMEC 2011 TFoundry	B5 0-1.5	0-1.5	09/24/10	Soil	20.0 U	50.0 U	**DET**	NT	**192**	**4,610**
AMEC 2011 TFoundry	B5 3-4	3-4	09/24/10	Soil	NT	NT	NT	NT	25.0 U	50.0 U
AMEC 2011 TFoundry	B6 0-1.5	0-1.5	09/24/10	Soil	20.0 U	50.0 U	**DET**	NT	75.0 U	**460**
AMEC 2011 TFoundry	B6 7.5-8.5	7.5-8.5	09/24/10	Soil	20.0 U	**DET**	100.0 U	NT	**4,920**	1,500 U
AMEC 2011 TFoundry	B6 15-18	15-18	09/24/10	Soil	20.0 U	50.0 U	100.0 U	NT	NT	NT
AMEC 2011 TFoundry	B7 0-1.5	0-1.5	09/23/10	Soil	20.0 U	50.0 U	**DET**	NT	75.0 U	**326**
AMEC 2011 TFoundry	B8 0-1.5	0-1.5	09/23/10	Soil	20.0 U	**DET**	**DET**	NT	750 U	**4,870**
AMEC 2011 TFoundry	B9 0-1.5	0-1.5	09/24/10	Soil	20.0 U	50.0 U	100.0 U	NT	NT	NT
AMEC 2011 TFoundry	B10 0-1.5	0-1.5	09/23/10	Soil	20.0 U	50.0 U	**DET**	NT	75.0 U	**476**
AMEC 2011 TFoundry	CB	SED	09/24/10	Sediment	20.0 U	50.0 U	**DET**	NT	2,500 U	**12,400**
AMEC 2011 TFoundry	D1	0-0.5	09/23/10	Soil	20.0 U	50.0 U	**DET**	NT	150 U	**1,830**
AMEC 2011 TFoundry	D2	SED	09/24/10	Sediment	20.0 U	50.0 U	**DET**	NT	4,000 U	**105,000**
AMEC 2011 TFoundry	D3	0-0.5	09/24/10	Soil	20.0 U	50.0 U	**DET**	NT	150 U	**936**
AMEC 2012 Data Gap	SB-16_0-5	0-5	01/10/12	Soil	50 U	20 U	100 U	NT	NT	NT
AMEC 2012 Data Gap	SB-16_5-10	5-10	01/10/12	Soil	50 U	20 U	100 U	NT	NT	NT
AMEC 2012 Data Gap	SB-18_0-5	0-5	01/10/12	Soil	50 U	20 U	100 U	NT	NT	NT
AMEC 2012 Data Gap	SB-18_5-10	5-10	01/10/12	Soil	50 U	20 U	100 U	NT	NT	NT
AMEC 2012 Tfoundry Phase II	B-12_0-1.5	0-1.5	05/21/12	Soil	NT	NT	NT	NT	25.0 U	**64.0**
AMEC 2012 Tfoundry Phase II	B-12_1.5-3.0	1.5-3.0	05/21/12	Soil	NT	NT	NT	NT	25.0 U	**79.0**
AMEC 2012 Tfoundry Phase II	B-15_0-1.5	0-1.5	05/21/12	Soil	NT	NT	NT	NT	25.0 U	50.0 U
AMEC 2012 Tfoundry Phase II	B-15_1.5-3.0	1.5-3.0	05/21/12	Soil	NT	NT	NT	NT	25.0 U	50.0 U
Alpha - Heating Oil Tank	EL@18-20'	18-20	03/06/13	Soil	NT	NT	NT	NT	25.0 U	50.0 U
Alpha - Heating Oil Tank	NNL@18-20'	18-20	03/06/13	Soil	NT	NT	NT	NT	25.0 U	50.0 U
Alpha - Heating Oil Tank	PFE-9'	9	03/05/13	Soil	NT	NT	NT	NT	**22,000**	1,500 U
Alpha - Heating Oil Tank	PFL@18-20'	18-20	03/06/13	Soil	NT	NT	NT	NT	25.0 U	50.0 U
Alpha - Heating Oil Tank	PFW-9'	9	03/05/13	Soil	NT	NT	NT	NT	**870**	500 U
Alpha - Heating Oil Tank	PV-19'	19	03/05/13	Soil	NT	NT	NT	NT	**1,800**	500 U
Alpha - Heating Oil Tank	PWE-7'	7	03/05/13	Soil	NT	NT	NT	NT	**290**	50.0 U
Alpha - Heating Oil Tank	PWN-7'	7	03/05/13	Soil	NT	NT	NT	NT	**2,400**	500 U
Alpha - Heating Oil Tank	PWS-7'	7	03/05/13	Soil	NT	NT	NT	NT	**4,900**	500 U
Alpha - Heating Oil Tank	PWW-7'	7	03/05/13	Soil	NT	NT	NT	NT	**29,000**	2,500 U
Alpha - Heating Oil Tank	SL@18-20'	18-20	03/06/13	Soil	NT	NT	NT	NT	25.0 U	50.0 U
Alpha - Heating Oil Tank	Tank Bottom	5.5	03/01/13	Soil	NT	NT	NT	NT	**7,900**	**1,300**
Alpha - Heating Oil Tank	WL@18-20'	18-20	03/06/13	Soil	NT	NT	NT	NT	25.0 U	50.0 U

Notes:

Bold = constituent detected at or above the reporting limit
U = constituent not detected at or above the reporting limit shown
DET = detected
NT = Not Tested
NA = No RBC has been published by DEQ for this analyte
[1]Range for diesel hydrocarbons is C12-C24
[2]Range for oil hydrocarbons is >C24
exceeds Occupational Worker RBC
exceeds Construction Worker RBC

bgs = below ground surface
DEQ = Oregon Department of Environmental Quality
ft = feet
SED = Sediment (not subsurface soil)
mg/kg = milligrams per kilogram
NWTPH-Gx = Northwest Method - gasoline range hydrocarbons
NWTPH-Dx = Northwest Method - diesel and oil range hydrocarbons
NWTPH-HCID = Northwest Method - hydrocarbon identification
RBC = Risk-Based Concentration

TABLE 6
Polychlorinated Biphenyl Data Summary - Groundwater
Kenton Foundry (Former) Property

Investigation Name	Sample Name	Sample Date	Sample Matrix	Aroclor 1016/1242	Aroclor 1221	Aroclor 1232	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	Total PCBs
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Occupational Vapor Intrusion Into Building RBCs[1]				NA	NA	NA	NA	NA	NA	NA	NA	>S
AMEC 2011 TFoundry	B5 GW	09/24/10	Groundwater	0.025 U	0.05 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.05 U
AMEC 2011 TFoundry	B6 GW	09/24/10	Groundwater	0.025 U	0.05 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.05 U
AMEC 2011 TFoundry	B7 GW	09/24/10	Groundwater	0.025 U	0.05 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.05 U

Notes:

U = constituent not detected at or above the method reporting limit shown

>S = concentration exceeds solubility limit

µg/L = micrograms per liter

DEQ = Oregon Department of Environmental Quality

NA = No screening value has been established for this analyte

PCBs = Polychlorinated biphenyls

RBC = Risk-Based Screening Concentrations

Exceeds occupational vapor intrusion RBC

[1] DEQ RBC Table, June 2012.

TABLE 7
Dissolved Metals Data Summary - Groundwater
Kenton Foundry (Former) Property (ECSI #5758)

Investigation Name	Sample Name	Sample Date	Sample Matrix	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Occupational Vapor Intrusion Into Building RBCs[1]				NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
AMEC 2011 TFoundry	B5 GW	09/24/10	Groundwater	**2.90**	0.20 U	0.20 U	0.80 U	**3.82**	**0.77**	**0.004**	**8.53**	1.00 U	0.20 U	**2.67**
AMEC 2011 TFoundry	B6 GW	09/24/10	Groundwater	**4.81**	0.20 U	0.20 U	0.80 U	**6.97**	**0.31**	**0.016**	**4.94**	1.00 U	0.20 U	**6.71**
AMEC 2011 TFoundry	B7 GW	09/24/10	Groundwater	**5.20**	0.20 U	0.20 U	0.80 U	**1.51**	0.20 U	**0.0014**	**1.97**	1.00 U	0.20 U	**2.03**

Notes:
Bold = constituent detected at or above the method reporting limit
U = constituent not detected at or above the method reporting limit shown
µg/L = micrograms per liter
DEQ = Oregon Department of Environmental Quality
NA = No screening value has been established for this analyte
NC = Not calculated because no site-specific hardness value is available.
NV = The chemical is considered non-volatile
RBC = Risk-Based Screening Concentrations
Exceeds occupational vapor intrusion RBC
[1] DEQ RBC Table, June 2012.

TABLE 8
Volatile Organic Compound Data Summary - Groundwater
Kenton Foundry (Former) Property (ECSI #5758)

Investigation Name	Sample Name	Sample Date	Sample Matrix	1,1,1,2 Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Occupational Vapor Intrusion Into Building [1]				NA	>S	NA	8,800	16,000	340,000	NA	NA	NA	NA	>S	NA	690	>S	3,800	NA	>S	NA	NA	5,700	NA	NA
AMEC 2011 TFoundry	B5 GW	09/24/10	Groundwater	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
AMEC 2011 TFoundry	B6 GW	09/24/10	Groundwater	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
AMEC 2011 TFoundry	B7 GW	09/24/10	Groundwater	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U

Investigation Name	Sample Name	Sample Date	Sample Matrix	2-Chlorotoluene	2-Hexanone	4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane	Dibromomethane
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Occupational Vapor Intrusion Into Building RBCs [1]				NA	NA	NA	NA	NA	NA	2,800	NA	NA	5,600	1,100,000	36,000	NA	790	>S	>S	1,200	320,000	>S	NA	NA	NA
AMEC 2011 TFoundry	B5 GW	09/24/10	Groundwater	1.0 U	10 U	1.0 U	1.0 U	10 U	20 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	**2.17**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AMEC 2011 TFoundry	B6 GW	09/24/10	Groundwater	1.0 U	10 U	1.0 U	1.0 U	10 U	20 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	**2.96**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AMEC 2011 TFoundry	B7 GW	09/24/10	Groundwater	1.0 U	10 U	1.0 U	1.0 U	10 U	20 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	**6.96**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U

TABLE 8
Volatile Organic Compound Data Summary - Groundwater
Kenton Foundry (Former) Property (ECSI #5758)

Investigation Name	Sample Name	Sample Date	Sample Matrix	Dichlorodifluoromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methylene chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane	Vinyl Acetate	Vinyl Chloride
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Occupational Vapor Intrusion Into Building [1]				NA	7,400	NA	>S	>S	99,000	10,000	NA	NA	>S	NA	>S	NA	32,000	>S	350,000	NA	3,300	340,000	NA	910
AMEC 2011 TFoundry	B5 GW	09/24/10	Groundwater	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
AMEC 2011 TFoundry	B6 GW	09/24/10	Groundwater	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.92**	2.0 U	1.0 U
AMEC 2011 TFoundry	B7 GW	09/24/10	Groundwater	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U

Notes:
Bold = constituent detected at or above the method reporting limit
U = constituent not detected at or above the method reporting limit shown
µg/L = micrograms per Liter
DEQ = Oregon Department of Environmental Quality
NA = No screening value has been established for this analyte
RBC = Risk-Based Screening Concentrations
Exceeds occupational vapor intrusion RBC
[1] DEQ RBC Table, June 2012.

TABLE 9
Semi-Volatile Organic Compound Data Summary - Groundwater
Kenton Foundry (Former) Property (ECSI #5758)

Investigation Name	Sample Name	Sample Date	Sample Matrix	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methyl-4,6-Dinitrophenol	2-Methylnaphthalene	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3,3'-Dichlorobenzidine	3-Nitroaniline	4-Bromophenyl phenyl ether	4-Chloro-3-Methylphenol
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Occupational Vapor Intrusion Into Building RBCs[1]				NA	>S	NA	5,700	NA	NV	NA	NA	NA	NA	NV	NA	NA	NA	NA	NA	NA	NA	NV	NA	NA	NA
AMEC 2011 TFoundry	B5 GW	09/24/10	Groundwater	0.22 U	0.22 U	0.22 U	0.22 U	0.53 U	**1.2**	0.53 U	4.3 U	4.3 U	0.22 U	0.22 U	0.22 U	0.53 U	2.2 U	0.22 U	0.53 U	0.22 U	0.53 U	2.2 U	1.1 U	0.22 U	0.53 U
AMEC 2011 TFoundry	B6 GW	09/24/10	Groundwater	0.20 U	0.20 U	0.20 U	0.20 U	0.48 U	0.48 U	0.48 U	3.9 U	3.9 U	0.20 U	0.20 U	0.20 U	0.48 U	2.0 U	0.20 U	0.48 U	0.20 U	0.48 U	2.0 U	0.96 U	0.20 U	0.48 U
AMEC 2011 TFoundry	B7 GW	09/24/10	Groundwater	0.20 U	0.20 U	0.20 U	0.20 U	0.48 U	0.48 U	0.48 U	3.9 U	3.9 U	0.20 U	0.20 U	0.20 U	0.48 U	2.0 U	0.20 U	0.48 U	0.20 U	0.48 U	2.0 U	0.96 U	0.20 U	0.48 U

Investigation Name	Sample Name	Sample Date	Sample Matrix	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol (p-Cresol)	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)Perylene	Benzo(k)Fluoranthene	Benzoic Acid	Benzyl Alcohol	bis(2-Chlorethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Chloroisopropyl)ether	bis(2-Ethylhexyl)phthalate	Butylbenzylphthalate	Chrysene	Dibenzo(a,h)anthracene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Occupational Vapor Intrusion Into Building RBCs[1]				NA	NA	NA	NA	NA	>S	NA	>S	NV	NV	>S	NA	>S	NA	NA	NA	NA	NA	NV	NA	NA	NV
AMEC 2011 TFoundry	B5 GW	09/24/10	Groundwater	0.22 U	0.22 U	0.53 U	1.1 U	2.2 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	5.3 U	0.53 U	0.22 U	0.22 U	0.22 U	**1.1**	0.22 U	0.22 U	0.22 U
AMEC 2011 TFoundry	B6 GW	09/24/10	Groundwater	0.20 U	0.20 U	0.48 U	0.96 U	2.0 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	4.8 U	0.48 U	0.20 U	0.20 U	0.20 U	**1.1**	0.20 U	0.20 U	0.20 U
AMEC 2011 TFoundry	B7 GW	09/24/10	Groundwater	0.20 U	0.20 U	0.48 U	0.96 U	2.0 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	4.8 U	**0.84**	0.20 U	0.20 U	0.20 U	**1.0**	**0.46**	0.20 U	0.20 U

TABLE 9
Semi-Volatile Organic Compound Data Summary - Groundwater
Kenton Foundry (Former) Property (ECSI #5758)

Investigation Name	Sample Name	Sample Date	Sample Matrix	Dibenzofuran	Diethyl Phthalate	Dimethyl Phthalate	Di-n-butylphthalate	di-n-Octyl Phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-cd)pyrene	Isophorone	Naphthalene	Nitrobenzene	n-nitrosodi-n-propylamine	n-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Occupational Vapor Intrusion Into Building RBCs[1]				NA	NA	NA	NA	NA	>S	>S	310	NA	NA	>S	NV	NA	10,000	NA	NA	NA	NV	NA	NA	>S
AMEC 2011 TFoundry	B5 GW	09/24/10	Groundwater	0.22 U	**0.82**	**9.9**	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	1.1 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	1.1 U	0.22 U	0.53 U	0.22 U
AMEC 2011 TFoundry	B6 GW	09/24/10	Groundwater	0.20 U	**0.24**	**2.7**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.96 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.96 U	0.20 U	0.48 U	0.20 U
AMEC 2011 TFoundry	B7 GW	09/24/10	Groundwater	0.20 U	**0.43**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.96 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.96 U	0.20 U	0.48 U	0.20 U

Notes:
Bold = constituent detected at or above the method reporting limit
U = constituent not detected at or above the method reporting limit shown
>S = concentration exceeds solubility limit
µg/L = micrograms per Liter
DEQ = Oregon Department of Environmental Quality
NA = No screening value has been established for this analyte
NV = The chemical is considered non-volatile
RBC = Risk-Based Screening Concentrations
Exceeds occupational vapor intrusion RBC
[1] DEQ RBC Table, June 2012.

TABLE 10
Total Petroleum Hydrocarbon Data Summary - Groundwater
Kenton Foundry (Former) Property (ECSI #5758)

Investigation Name	Sample Name	Sample Date	Sample Matrix	NWTPH-HCID-Diesel	NWTPH-HCID-Gasoline	NWTPH-HCID-Lube Oil
				mg/L	mg/L	mg/L
Occupational Vapor Intrusion Into Building RBCs[1]				>S	>S	NA
AMEC 2011 TFoundry	B5 GW	9/24/2010	Groundwater	0.50 U	0.25 U	0.50 U
AMEC 2011 TFoundry	B6 GW	9/24/2010	Groundwater	0.50 U	0.25 U	0.50 U
AMEC 2011 TFoundry	B7 GW	9/24/2010	Groundwater	0.50 U	0.25 U	0.50 U

Notes:

U = constituent not detected at or above the method reporting limit shown

>S = concentration exceeds solubility limit

DEQ = Oregon Department of Environmental Quality

mg/L = milligrams per Liter

NA = No screening value has been established for this analyte

NWTPH-HCID = Northwest Method - hydrocarbon identification

RBC = Risk-Based Screening Concentrations

Exceeds occupational vapor intrusion RBC

[1] DEQ RBC Table, June 2012.

FIGURES

AMEC 7376 SW Durham Road Portland, OR, U.S.A. 97224	amec		CLIENT: PORTLAND BUREAU OF ENVIRONMENTAL SERVICES

TITLE: SITE VICINITY MAP	DWN BY: SD	DATUM: NAD83	DATE: APRIL 2015
PROJECT: KENTON FOUNDRY (FORMER) AND ADJOINING RAILROAD SPUR (FORMER) PROPERTIES INDEPENDENT CLEANUP PATHWAY REPORT	CHK'D BY: LF	REV. NO.: -	PROJECT NO.: 4-61M-12538-6
	PROJECTION: OR SP N. Ft.	SCALE: 1 inch = 2,000 feet	FIGURE NO.: FIGURE 1

K:\12000\12500\12538\125386\dwg_Confirmation_Sampling_Kenton_Foundry\Figure 1 - Kenton Brass Foundry Site Vicinity Map.mxd

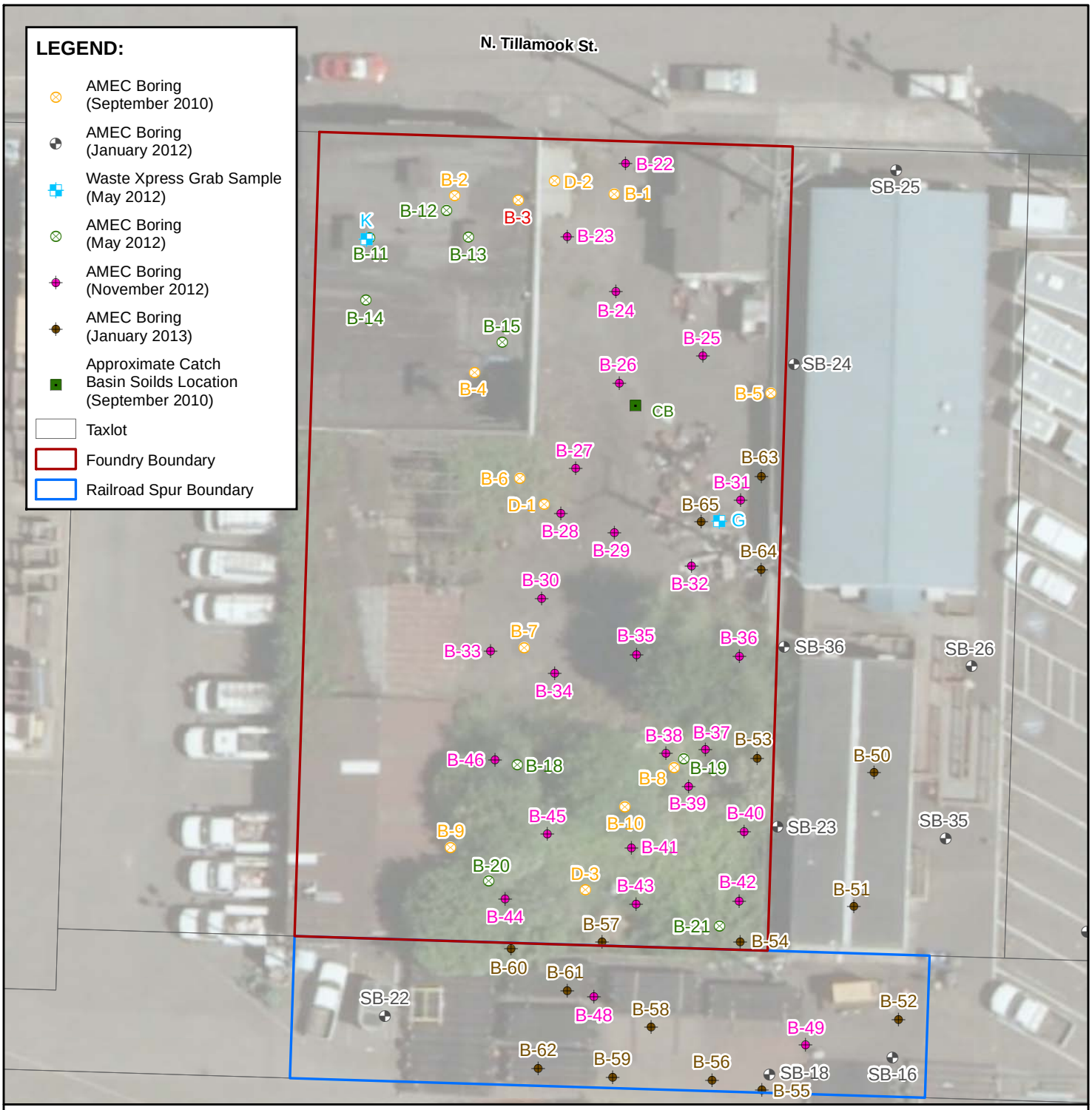
SOURCE: 2010 aerial imagery obtained from Metro.
Approximate pipe location data obtained from 1971 plumbing permit.

0 25 50 100 Feet

N

AMEC 7376 SW Durham Road Portland, OR, U.S.A. 97224	amec		CLIENT: PORTLAND BUREAU OF ENVIRONMENTAL SERVICES
TITLE: HISTORICAL CONFIGURATION		DWN BY: SD	DATUM: NAD83 / DATE: APRIL 2015
PROJECT: KENTON FOUNDRY (FORMER) AND ADJOINING RAILROAD SPUR (FORMER) PROPERTIES INDEPENDENT CLEANUP PATHWAY REPORT		CHK'D BY: LF	REV. NO.: - / PROJECT NO.: 4-61M-12538-6
		PROJECTION: OR SP N. Ft.	SCALE: 1 inch = 50 feet / FIGURE NO.: FIGURE 2

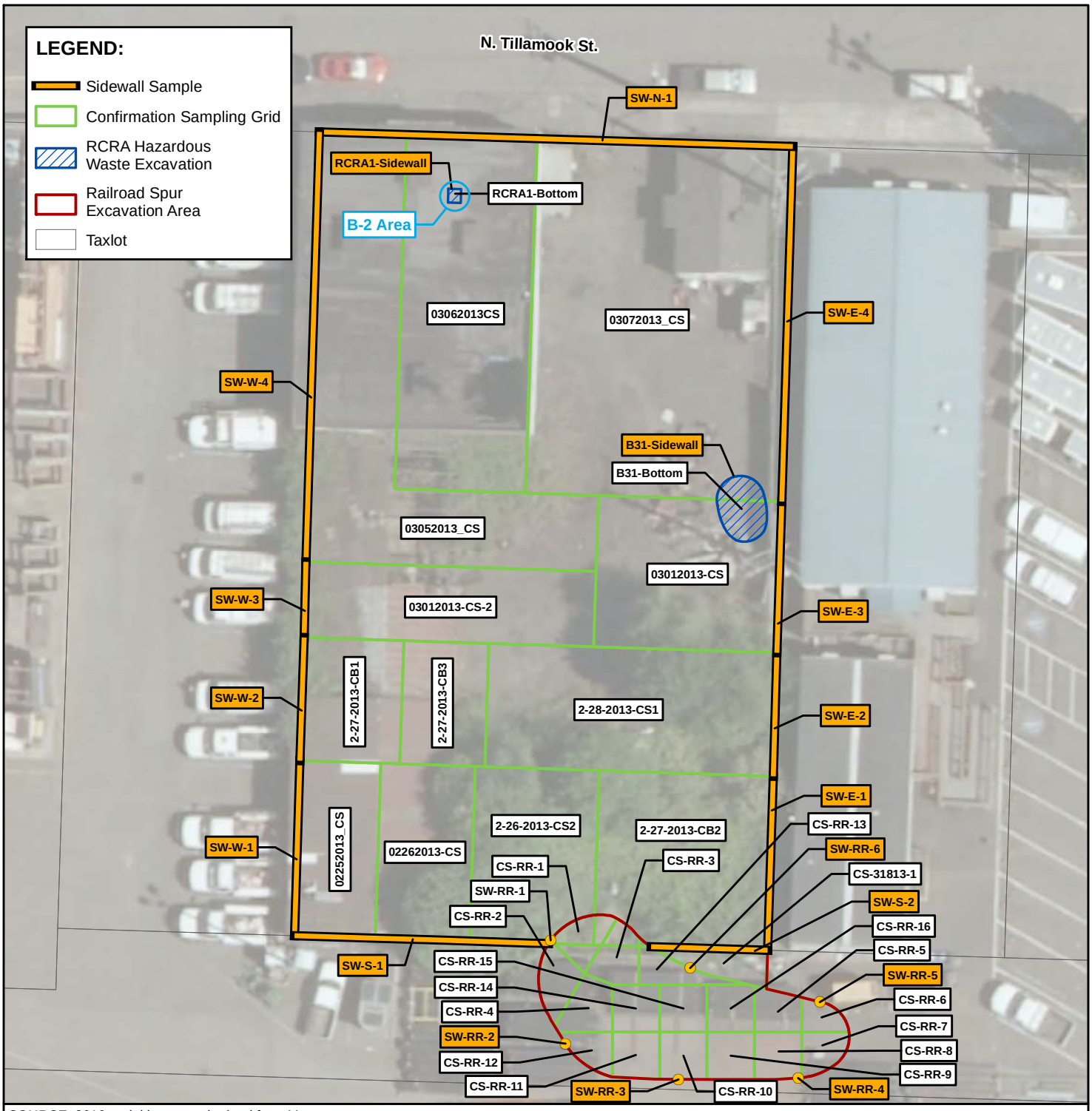
K:\12000\12500\12538\125386\dwg_Confirmation_Sampling_Kenton_Foundry\Figure 2 - Historical Configuration.mxd



SOURCE: 2010 aerial imagery obtained from Metro.

AMEC 7376 SW Durham Road Portland, OR, U.S.A. 97224	amec		CLIENT: PORTLAND BUREAU OF ENVIRONMENTAL SERVICES
TITLE: INVESTIGATION SAMPLING LOCATIONS	DWN BY: SD	DATUM: NAD83	DATE: APRIL 2015
PROJECT: KENTON FOUNDRY (FORMER) AND ADJOINING RAILROAD SPUR (FORMER) PROPERTIES INDEPENDENT CLEANUP PATHWAY REPORT	CHK'D BY: LF	REV. NO.: -	PROJECT NO.: 4-61M-12538-6
	PROJECTION: OR SP N. Ft.	SCALE: 1 inch = 30 feet	FIGURE NO.: FIGURE 3

K:\12000\12500\12538\125386\dwg_Confirmation_Sampling_Kenton_Foundry\Figure 3 - Investigation Sampling Locations.mxd



SOURCE: 2010 aerial imagery obtained from Metro.

0 15 30 60 Feet

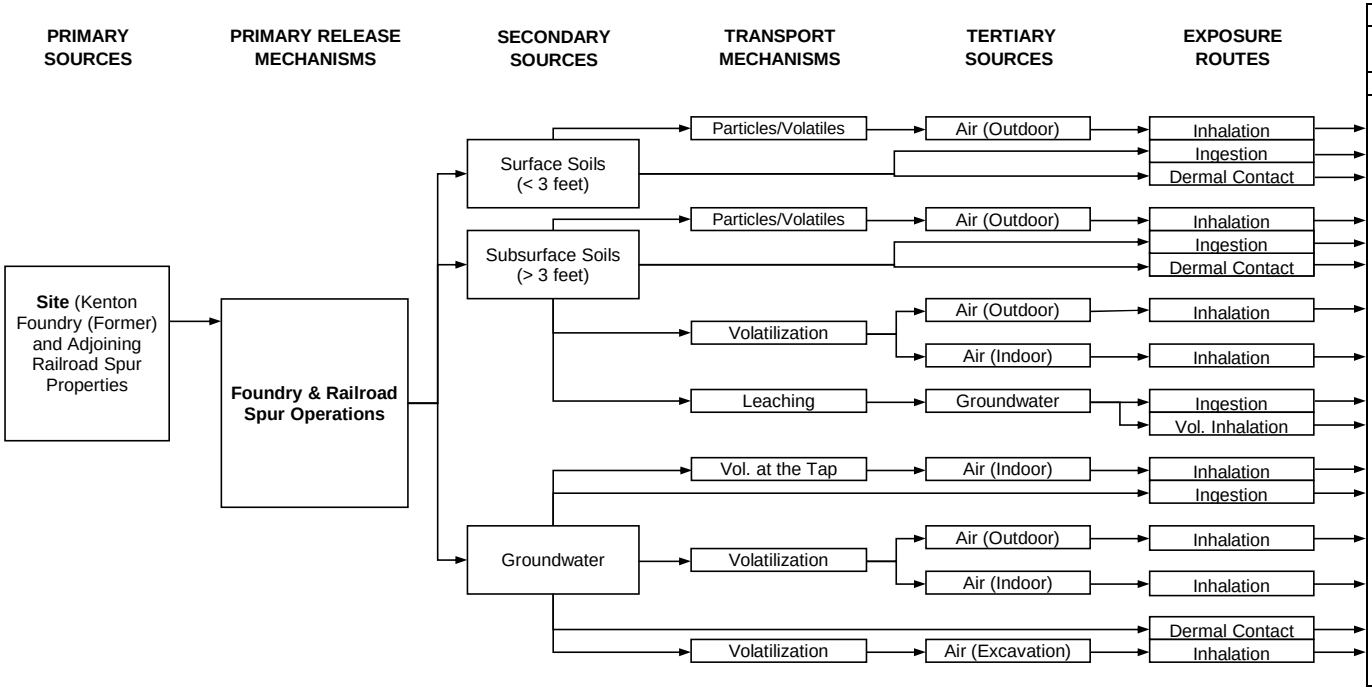
N

AMEC 7376 SW Durham Road Portland, OR, U.S.A. 97224	amec		CLIENT: PORTLAND BUREAU OF ENVIRONMENTAL SERVICES

TITLE: CONFIRMATION SAMPLING LOCATIONS	DWN BY: SD	DATUM: NAD83	DATE: APRIL 2015
PROJECT: KENTON FOUNDRY (FORMER) AND ADJOINING RAILROAD SPUR (FORMER) PROPERTIES INDEPENDENT CLEANUP PATHWAY REPORT	CHK'D BY: LF	REV. NO.: -	PROJECT NO.: 4-61M-12538-6
	PROJECTION: OR SP N. Ft.	SCALE: 1 inch = 30 feet	FIGURE NO.: FIGURE 4

K:\12000\12500\12538\125386\dwg_Confirmation_Sampling_Kenton_Foundry\Figure 4 - Confirmation Sampling Locations.mxd

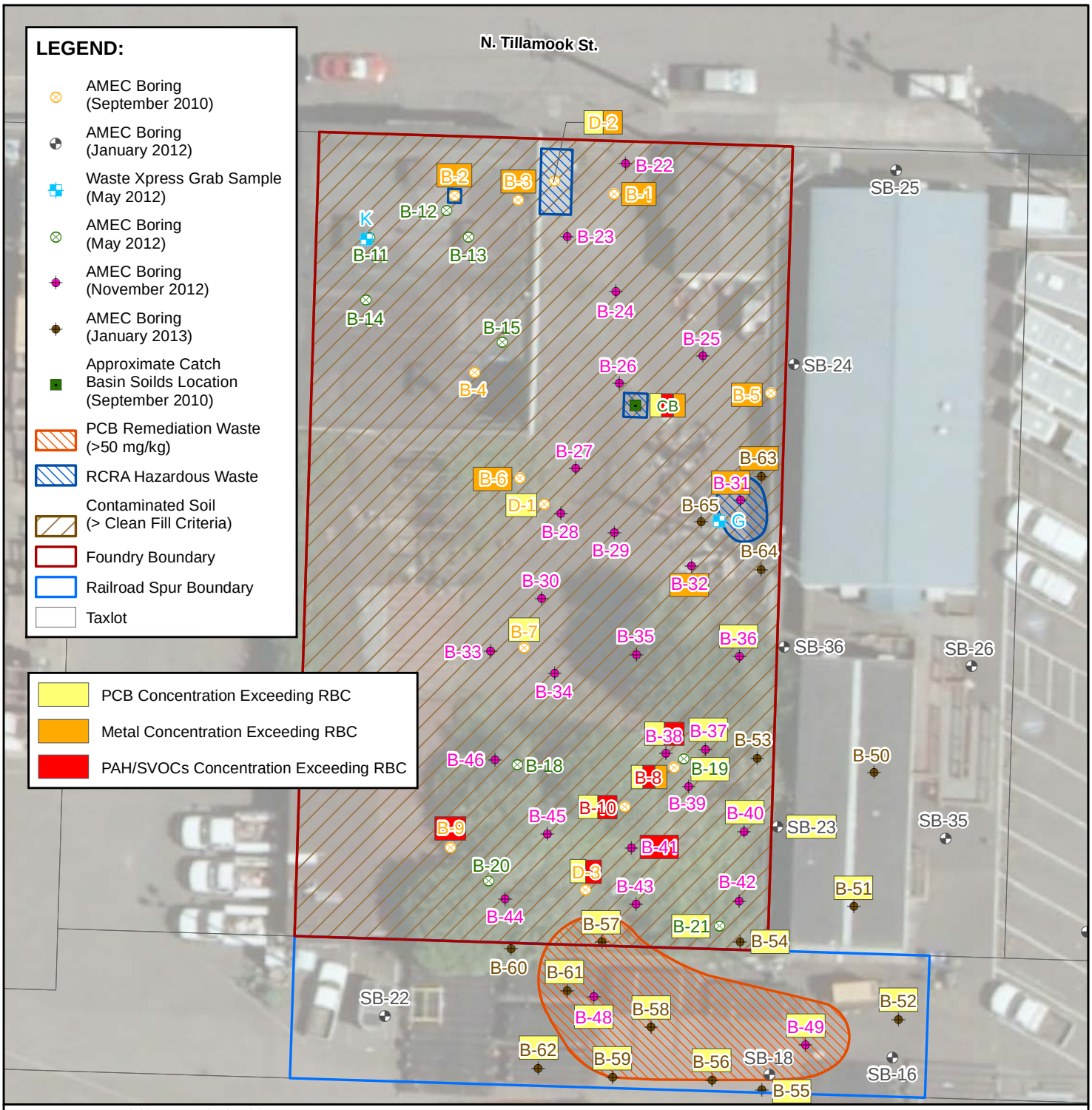
FIGURE 5
Kenton Foundry (Former) and Adjoining Railroad Spur (Former) Properties
Portland, Oregon



POTENTIAL RECEPTORS					
Ecological		Occupational		Construction & Excavation	
Terrestrial	Aquatic	Current	Future	Current	Future
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	+	+
-	-	-	-	+	+
-	-	-	-	+	+
-	-	+	+	-	-
-	-	-	+	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	+	-	-
-	-	-	+	-	-
-	-	-	-	-	-
-	-	-	-	-	-

Notes:

+ This route is a primary source of exposure.
- There is no exposure by this route.

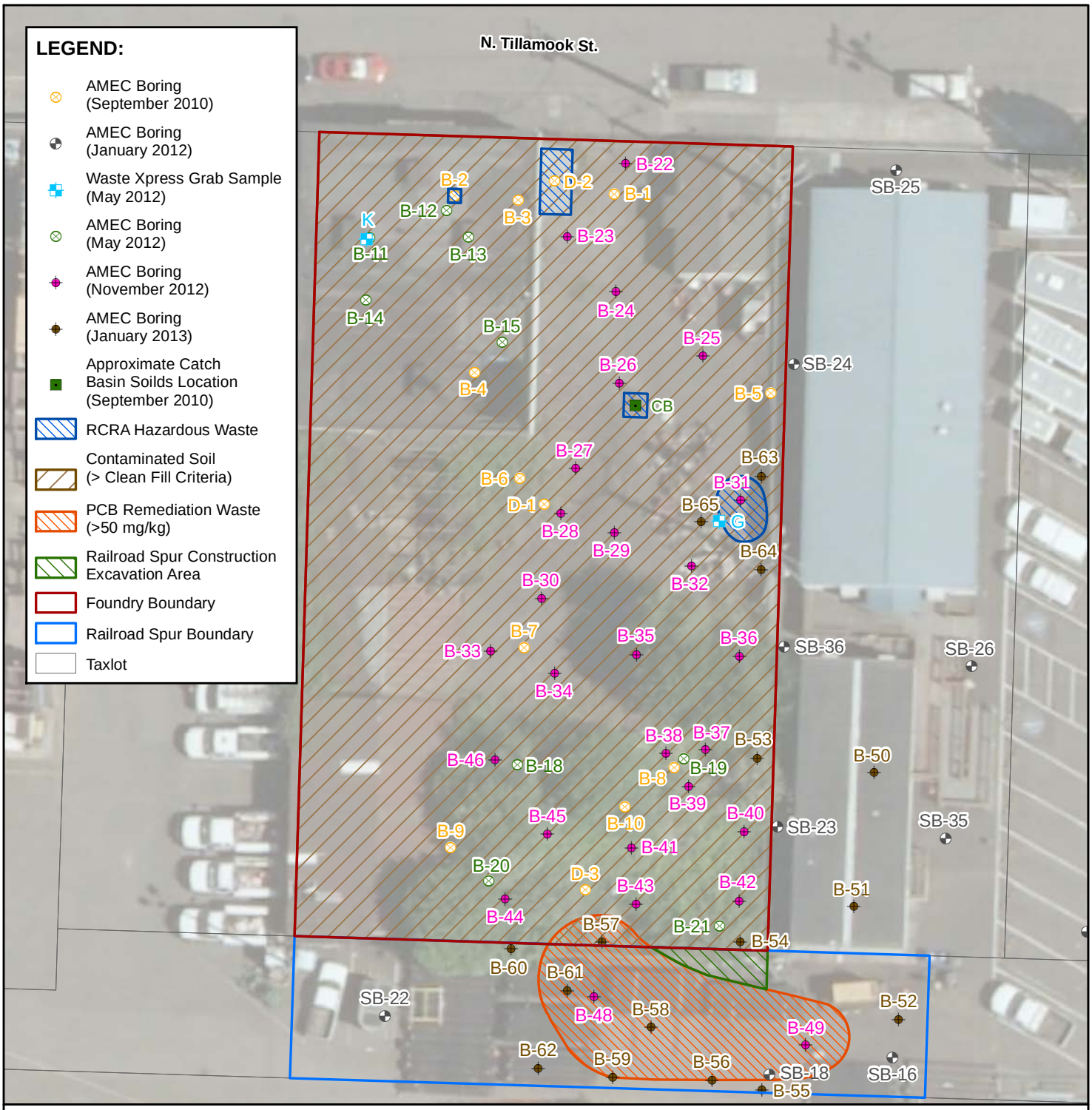


SOURCE: 2010 aerial imagery obtained from Metro.
See Railraod Spur Closure Report for more information about area south of site.

0 15 30 60 Feet

AMEC 7376 SW Durham Road Portland, OR, U.S.A. 97224	amec		CLIENT: PORTLAND BUREAU OF ENVIRONMENTAL SERVICES
TITLE: OCCUPATIONAL RBC EXCEEDANCES		DWN BY: SD	DATUM: NAD83 / DATE: APRIL 2015
PROJECT: KENTON FOUNDRY (FORMER) AND ADJOINING RAILROAD SPUR (FORMER) PROPERTIES INDEPENDENT CLEANUP PATHWAY REPORT		CHK'D BY: LF	REV. NO.: - / PROJECT NO.: 4-61M-12538-6
		PROJECTION: OR SP N. Ft.	SCALE: 1 inch = 30 feet / FIGURE NO.: FIGURE 6

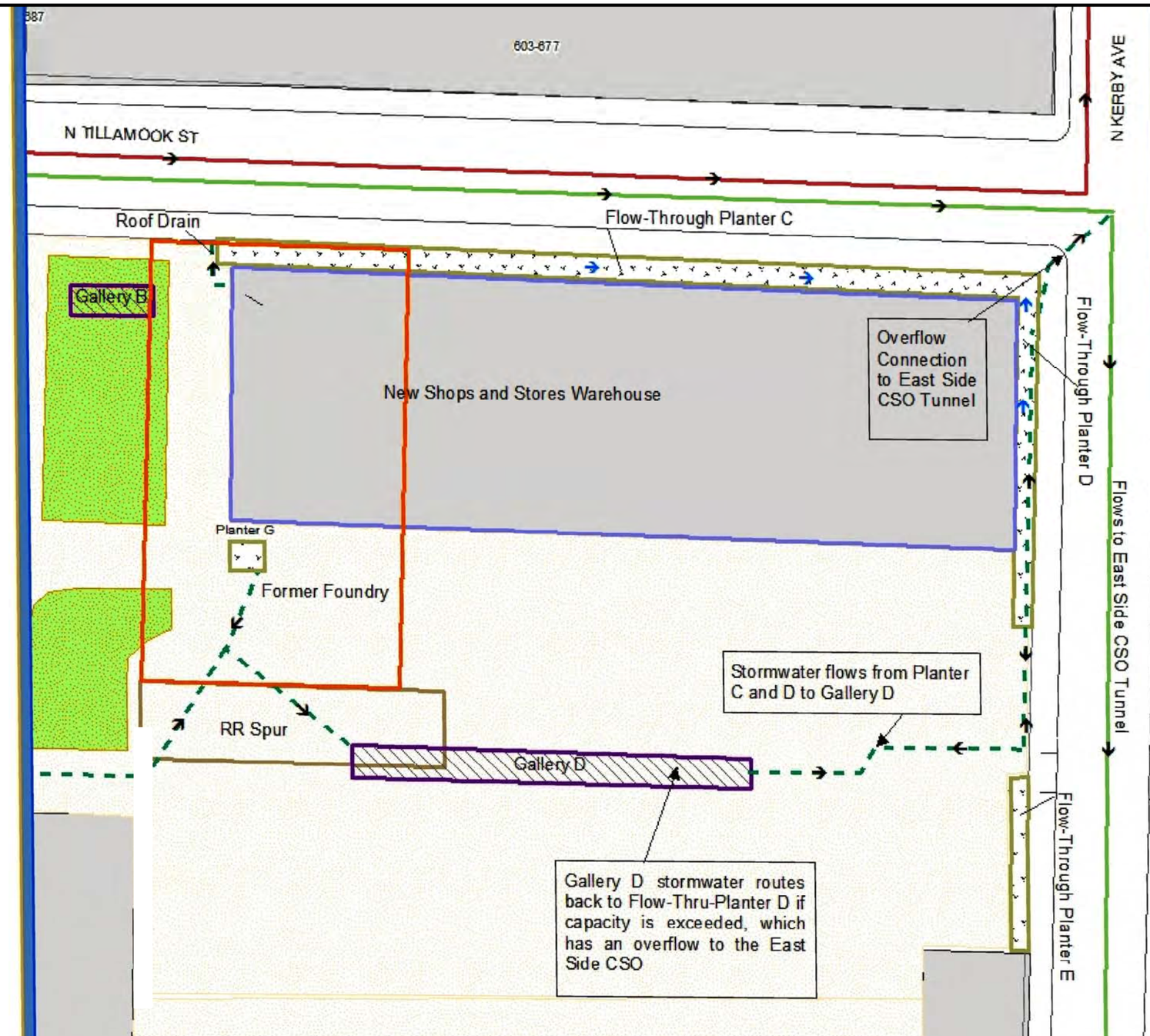
K:\12000\12500\12538\125386\dwg_Confirmation_Sampling_Kenton_Foundry\Figure 6 - Occupational RBC Exceedances.mxd



SOURCE: 2010 aerial imagery obtained from Metro.

AMEC 7376 SW Durham Road Portland, OR, U.S.A. 97224	amec		CLIENT: PORTLAND BUREAU OF ENVIRONMENTAL SERVICES
TITLE: SOIL REMOVAL AREAS	DWN BY: SD	DATUM: NAD83	DATE: APRIL 2015
PROJECT: KENTON FOUNDRY (FORMER) AND ADJOINING RAILROAD SPUR (FORMER) PROPERTIES INDEPENDENT CLEANUP PATHWAY REPORT	CHK'D BY: LF	REV. NO.: -	PROJECT NO.: 4-61M-12538-6
	PROJECTION: OR SP N. Ft.	SCALE: 1 inch = 30 feet	FIGURE NO.: FIGURE 7

K:\12000\12500\12538\125386\dwg_Confirmation_Sampling_Kenton_Foundry\Figure 7 - Soil Removal Areas.mxd



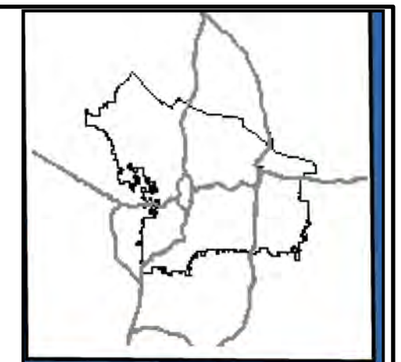


Figure 8
Former Kenton Foundry/
RR Spur

650-668 N Tillamook St.

ECSI# 5758

Map symbols

- Taxlots
- Sanitary Sewer
- Storm Sewer
- Flow Thru Planter
- Infiltration Gallery
- Permeable Pavers
- Paved Surfaces
- Site Storm Flow

0 45 90 135 Feet

Source: Foundry Redevelopment Stormwater Management Plan, Dated March 17, 2015, Provided by City of Portland Bureau of Environmental Services.
Schematic of redevelopment features is for conceptual purposes and is not to scale.

CLIENT: PORTLAND BUREAU OF ENVIRONMENTAL SERVICES

AMEC
7376 SW Durham Road
Portland, OR, U.S.A. 97224

DWN BY: SD
CHK'D BY: LF
DATUM: NAD83
PROJECTION: OR SP N. Ft.
SCALE: 1 inch = 45 feet

PROJECT: KENTON FOUNDRY (FORMER) AND ADJOINING RAILROAD SPUR (FORMER) PROPERTIES INDEPENDENT CLEANUP PATHWAY REPORT

TITLE: REDEVELOPMENT PLAN

DATE: APRIL 2015
PROJECT NO.: 4-61M-12538-6
REV. NO.: -
FIGURE NO.: Figure 8

K:\12000\12500\12538\125386\dwg_Confirmation_Sampling_Kenton_Foundry\Figure 8 - Redevelopment Plan.mxd - stephane.descombes - 4/7/2015 - 1:36:47 PM

APPENDIX A

1971 Kenton Aluminum & Brass Plumbing Permit

39

BUREAU OF BUILDINGS
REPORT OF PLUMBING INSPECTION

Date 2-16-71

Address 660 North Tillamook Street Permit 169770

Lot ..... Blk ..... Add .....

Owner Kenton Aluminum & Brass

Contractor Marshall Associated Contractors

Stories and class of building .....

Water Closets ..... Hot-Water Tank ..... Cesspool .....

Bath, Shower ..... Auto. Clothes Washer ..... Septic Tank .....

Bath Tub ..... Auto. Dishwasher ..... Dry Well .....

Basins ..... Drain Floor ..... Water Service .....

Sinks ..... Drain Area ..... Connect to Sewer 1

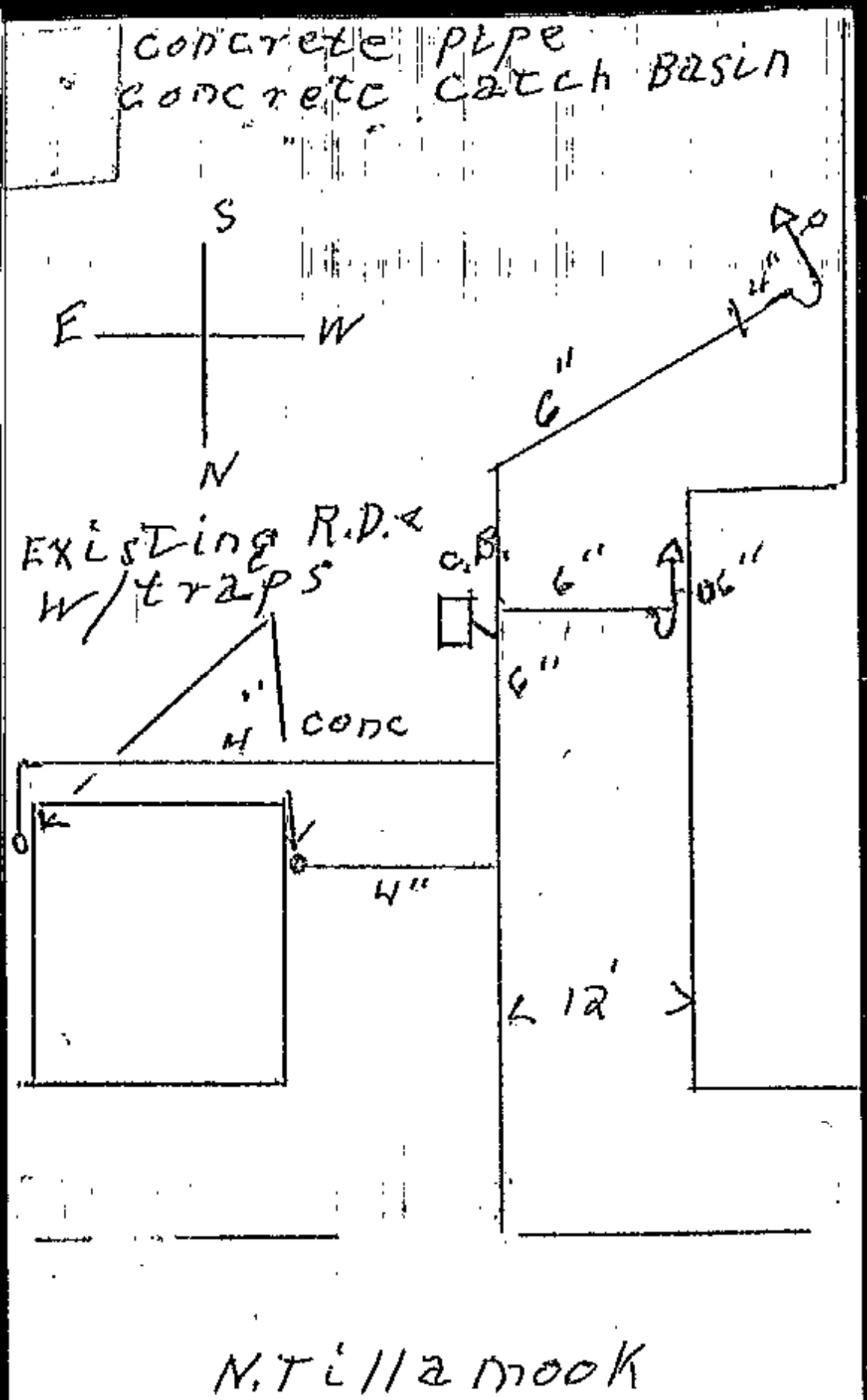
Laundry Trays ..... Rain Drains ..... Cesspool, Septic Tank .....

Water Permit ..... Bldg. Pmt ..... Sewer Permit 90263

Remarks .....

Date of First Inspection 3-1-71 Date of Final Inspection 4-6-71

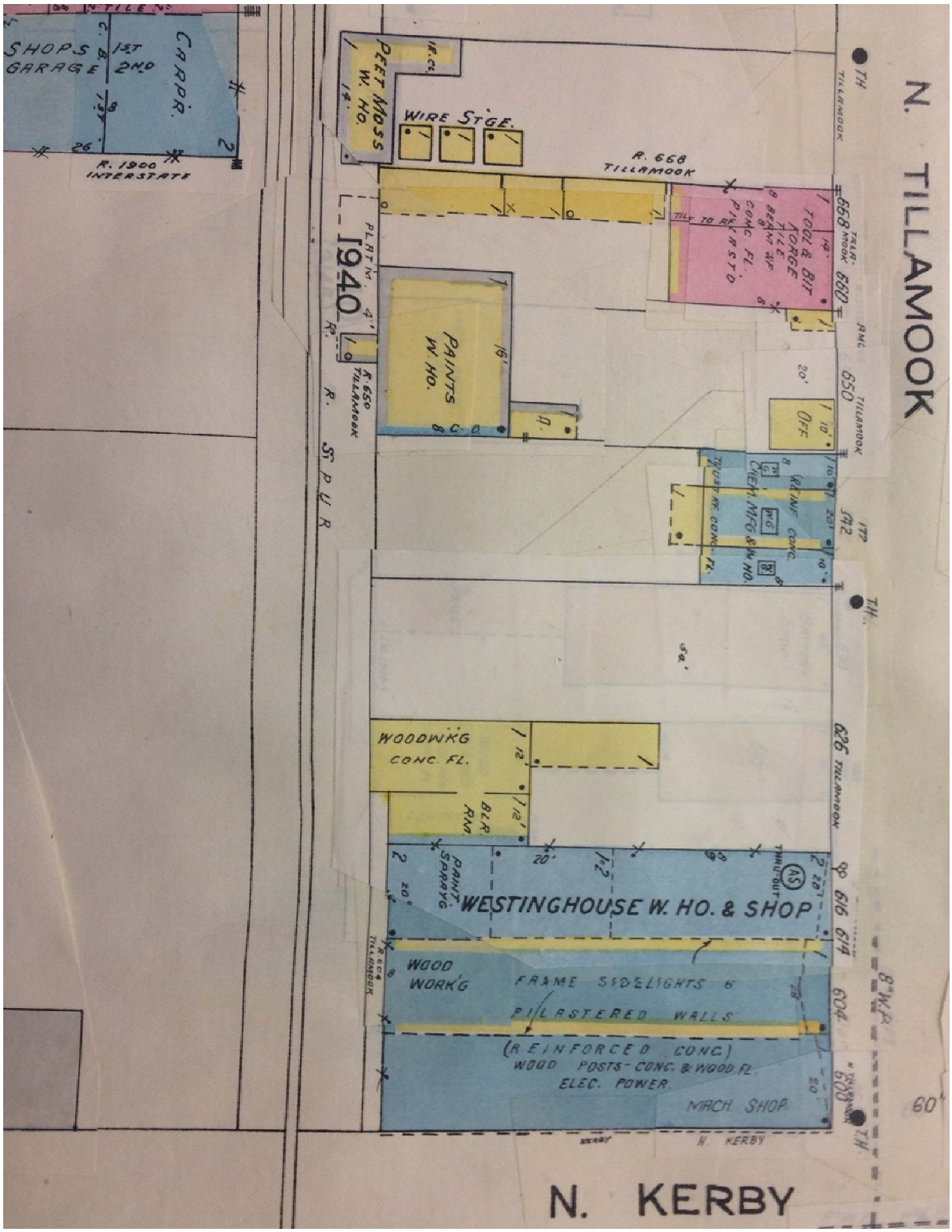
J. Angell Inspector J. Angell Inspector


concrete pipe
concrete catch Basin
S
E
W
N
Existing R.D.&
w/traps
C.B.
6"
6"
6"
6"
4"
4"
conc
4"
12'
N. Tillamook

APPENDIX B

1950 Sanborn Map

Sanborn Map Company
Insurance Maps of Portland, Oregon
Vol. 6 Map 643
Addenda March1957 to Addition Index of Dec 1954



APPENDIX C

Landfill Disposal Documentation

Interstate Renovation Project, Former Kenton Aluminum and Brass Foundry
Waste Disposal Documentation from Waste Management
Hillsboro Landfill

Customer Summary Report
Criteria: 01/01/2013 12:00 AM to 10/09/2013 11:59 PM
Business Unit Name: Hillsboro Landfill - S03305 (USA)
User: kdrake1
Date: Oct 09 2013, 6:26:40 PM - Central Standard Time
Operation Type: All
Customer Name: All
Ticket Type: All
Customer Type: All
PMT Category: All
Profile: 111045OR

Ticket Date	Ticket ID	Customer	Generator	Profile	Truck	Material	Origin	Rate Unit	Tons
2/25/2013	1310838	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	17.47
2/25/2013	1310846	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	18.78
2/25/2013	1310848	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	27.37
2/25/2013	1310867	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.9
2/25/2013	1310878	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	19.03
2/25/2013	1310882	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	25.43
2/25/2013	1310887	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.72
2/25/2013	1310898	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.95
2/25/2013	1310907	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	31.32
2/25/2013	1310911	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.23
2/25/2013	1310919	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	20.7
2/26/2013	1310942	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	17.99
2/26/2013	1310943	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.32
2/26/2013	1310946	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.52
2/26/2013	1310948	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.31
2/26/2013	1310949	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.23
2/26/2013	1310956	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.87
2/26/2013	1310975	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.11
2/26/2013	1310976	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.85
2/26/2013	1310978	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.17
2/26/2013	1310980	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.02
2/26/2013	1310981	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.53
2/26/2013	1310992	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	20.74
2/26/2013	1311002	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.96
2/26/2013	1311007	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.52
2/26/2013	1311009	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.6
2/26/2013	1311011	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.25
2/26/2013	1311012	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.76
2/26/2013	1311019	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.55
2/26/2013	1311033	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.8
2/26/2013	1311035	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.27
2/26/2013	1311037	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.07
2/26/2013	1311039	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	26.16

Interstate Renovation Project, Former Kenton Aluminum and Brass Foundry
Waste Disposal Documentation from Waste Management
Hillsboro Landfill

Ticket Date	Ticket ID	Customer	Generator	Profile	Truck	Material	Origin	Rate Unit	Tons
2/26/2013	1311040	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.95
2/26/2013	1311048	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.11
2/26/2013	1311050	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.42
2/27/2013	1311067	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	27.35
2/27/2013	1311070	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.83
2/27/2013	1311071	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.72
2/27/2013	1311072	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	14	Cont Soil Pet-RGC-Tons	MULT-IN	TON	17.64
2/27/2013	1311073	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.88
2/27/2013	1311075	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.96
2/27/2013	1311081	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	12	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.1
2/27/2013	1311087	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.03
2/27/2013	1311101	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	25.2
2/27/2013	1311105	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.14
2/27/2013	1311108	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.64
2/27/2013	1311109	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.12
2/27/2013	1311113	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	14	Cont Soil Pet-RGC-Tons	MULT-IN	TON	18.73
2/27/2013	1311114	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.02
2/27/2013	1311116	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	18.2
2/27/2013	1311119	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	12	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.65
2/27/2013	1311135	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	27.91
2/27/2013	1311138	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.98
2/27/2013	1311141	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.36
2/27/2013	1311142	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	18.79
2/27/2013	1311145	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	14	Cont Soil Pet-RGC-Tons	MULT-IN	TON	17.11
2/27/2013	1311149	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.65
2/27/2013	1311150	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	17.78
2/27/2013	1311154	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	12	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.22
2/27/2013	1311168	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.69
2/27/2013	1311171	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.65
2/27/2013	1311174	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	18.82
2/27/2013	1311175	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.3
2/27/2013	1311178	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	14	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.91
2/27/2013	1311180	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.3
2/27/2013	1311181	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	18.04
2/27/2013	1311183	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	12	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.24
2/27/2013	1311189	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	25.37
2/28/2013	1311217	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.81
2/28/2013	1311218	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.6
2/28/2013	1311222	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	11	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.19
2/28/2013	1311225	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	13.82
2/28/2013	1311226	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.99
2/28/2013	1311231	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	12	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.55
2/28/2013	1311232	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.68
2/28/2013	1311236	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	6124	Cont Soil Pet-RGC-Tons	MULT-IN	TON	13.34

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Ticket Date	Ticket ID	Customer	Generator	Profile	Truck	Material	Origin	Rate Unit	Tons
2/28/2013	1311239	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	15	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.01
2/28/2013	1311250	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	25.75
2/28/2013	1311256	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.95
2/28/2013	1311261	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	11	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.26
2/28/2013	1311266	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.13
2/28/2013	1311267	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.46
2/28/2013	1311268	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.43
2/28/2013	1311269	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	12	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.22
2/28/2013	1311272	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	6124	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.41
2/28/2013	1311277	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	15	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.11
2/28/2013	1311280	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.74
2/28/2013	1311285	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.62
2/28/2013	1311287	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	11	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.66
2/28/2013	1311291	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.55
2/28/2013	1311292	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.66
2/28/2013	1311293	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	12	Cont Soil Pet-RGC-Tons	MULT-IN	TON	12.55
2/28/2013	1311297	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	6124	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.98
2/28/2013	1311308	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	15	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.87
3/1/2013	1311342	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.74
3/1/2013	1311345	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	11	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.69
3/1/2013	1311346	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.92
3/1/2013	1311347	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.52
3/1/2013	1311348	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	12	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.68
3/1/2013	1311349	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.69
3/1/2013	1311350	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	6124	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.63
3/1/2013	1311351	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.38
3/1/2013	1311357	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	15	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.73
3/1/2013	1311364	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	26.03
3/1/2013	1311369	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	11	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.5
3/1/2013	1311370	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	6124	Cont Soil Pet-RGC-Tons	MULT-IN	TON	17.21
3/1/2013	1311373	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.92
3/1/2013	1311375	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.82
3/1/2013	1311377	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.09
3/1/2013	1311379	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	12	Cont Soil Pet-RGC-Tons	MULT-IN	TON	13.76
3/1/2013	1311380	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.19
3/1/2013	1311389	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.95
3/1/2013	1311390	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	6124	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.95
3/1/2013	1311395	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.87
3/1/2013	1311399	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.22
3/1/2013	1311400	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	12	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.72
3/1/2013	1311401	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	25.35
3/1/2013	1311402	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.22
3/1/2013	1311411	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.22
3/1/2013	1311414	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	6124	Cont Soil Pet-RGC-Tons	MULT-IN	TON	17.04

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Ticket Date	Ticket ID	Customer	Generator	Profile	Truck	Material	Origin	Rate Unit	Tons
3/1/2013	1311415	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.95
3/1/2013	1311418	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.49
3/1/2013	1311422	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	12	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.18
3/1/2013	1311423	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.06
3/1/2013	1311424	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.99
3/1/2013	1311427	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	25.02
3/4/2013	1311450	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.05
3/4/2013	1311453	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.31
3/4/2013	1311456	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	12	Cont Soil Pet-RGC-Tons	MULT-IN	TON	13.82
3/4/2013	1311461	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	7	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.16
3/4/2013	1311462	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	15	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.84
3/4/2013	1311467	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	16.22
3/4/2013	1311469	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	850	Cont Soil Pet-RGC-Tons	MULT-IN	TON	10.7
3/4/2013	1311478	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.46
3/4/2013	1311485	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	27.18
3/4/2013	1311486	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.61
3/4/2013	1311487	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	12	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.47
3/4/2013	1311489	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	7	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.46
3/4/2013	1311492	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	81	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.34
3/4/2013	1311497	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	14	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.34
3/4/2013	1311500	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	18.56
3/4/2013	1311501	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	850	Cont Soil Pet-RGC-Tons	MULT-IN	TON	11.77
3/4/2013	1311505	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.46
3/4/2013	1311507	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	1	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.15
3/4/2013	1311516	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.42
3/4/2013	1311517	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	12	Cont Soil Pet-RGC-Tons	MULT-IN	TON	12.05
3/4/2013	1311519	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	20.57
3/4/2013	1311529	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	7	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.11
3/4/2013	1311530	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	14	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.7
3/4/2013	1311531	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	18.99
3/4/2013	1311532	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.97
3/4/2013	1311534	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	850	Cont Soil Pet-RGC-Tons	MULT-IN	TON	11.15
3/4/2013	1311544	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	1	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.24
3/4/2013	1311545	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	81	Cont Soil Pet-RGC-Tons	MULT-IN	TON	20.45
3/4/2013	1311553	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.49
3/4/2013	1311555	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	12	Cont Soil Pet-RGC-Tons	MULT-IN	TON	13.3
3/4/2013	1311557	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.7
3/4/2013	1311562	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.09
3/4/2013	1311563	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	18.7
3/4/2013	1311568	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	850	Cont Soil Pet-RGC-Tons	MULT-IN	TON	12.29
3/4/2013	1311569	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	14	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.44
3/4/2013	1311572	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	7	Cont Soil Pet-RGC-Tons	MULT-IN	TON	17.71
3/5/2013	1311602	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.48
3/5/2013	1311603	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.68

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Ticket Date	Ticket ID	Customer	Generator	Profile	Truck	Material	Origin	Rate Unit	Tons
3/5/2013	1311606	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	7	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.16
3/5/2013	1311607	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.39
3/5/2013	1311609	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	5	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.04
3/5/2013	1311613	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	17.22
3/5/2013	1311618	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	81	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.04
3/5/2013	1311623	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	1	Cont Soil Pet-RGC-Tons	MULT-IN	TON	19.83
3/5/2013	1311647	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	25.7
3/5/2013	1311652	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.08
3/5/2013	1311655	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	7	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.6
3/5/2013	1311656	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.81
3/5/2013	1311658	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	18.3
3/5/2013	1311659	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	5	Cont Soil Pet-RGC-Tons	MULT-IN	TON	12.55
3/5/2013	1311665	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	19.62
3/5/2013	1311671	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	15	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.64
3/5/2013	1311672	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	1	Cont Soil Pet-RGC-Tons	MULT-IN	TON	20.44
3/5/2013	1311680	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.77
3/5/2013	1311683	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	25.32
3/5/2013	1311684	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	13.83
3/5/2013	1311685	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	5	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.21
3/5/2013	1311686	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	17.7
3/5/2013	1311693	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	20.28
3/5/2013	1311708	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	81	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.03
3/5/2013	1311709	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	1	Cont Soil Pet-RGC-Tons	MULT-IN	TON	20.73
3/5/2013	1311712	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.7
3/5/2013	1311716	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	5	Cont Soil Pet-RGC-Tons	MULT-IN	TON	12.69
3/5/2013	1311719	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	20.4
3/5/2013	1311720	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	18.91
3/5/2013	1311735	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	15	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.28
3/5/2013	1311736	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	1	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.02
3/5/2013	1311740	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	19.29
3/6/2013	1311754	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	26.86
3/6/2013	1311755	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	26.34
3/6/2013	1311756	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.56
3/6/2013	1311757	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	6	Cont Soil Pet-RGC-Tons	MULT-IN	TON	11.73
3/6/2013	1311758	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	7	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.81
3/6/2013	1311761	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	20.58
3/6/2013	1311764	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	81	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.43
3/6/2013	1311767	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	1	Cont Soil Pet-RGC-Tons	MULT-IN	TON	20.78
3/6/2013	1311768	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.78
3/6/2013	1311769	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	17.81
3/6/2013	1311787	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	25.51
3/6/2013	1311790	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	6	Cont Soil Pet-RGC-Tons	MULT-IN	TON	12.71
3/6/2013	1311791	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	7	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.07
3/6/2013	1311792	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.98

Interstate Renovation Project, Former Kenton Aluminum and Brass Foundry
Waste Disposal Documentation from Waste Management
Hillsboro Landfill

Ticket Date	Ticket ID	Customer	Generator	Profile	Truck	Material	Origin	Rate Unit	Tons
3/6/2013	1311796	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	13	Cont Soil Pet-RGC-Tons	MULT-IN	TON	20.06
3/6/2013	1311798	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	855	Cont Soil Pet-RGC-Tons	MULT-IN	TON	17.28
3/6/2013	1311812	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.38
3/6/2013	1311814	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.59
3/6/2013	1311816	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	6	Cont Soil Pet-RGC-Tons	MULT-IN	TON	11.47
3/6/2013	1311817	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	7	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.66
3/6/2013	1311818	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	20.67
3/6/2013	1311830	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	853	Cont Soil Pet-RGC-Tons	MULT-IN	TON	14.37
3/6/2013	1311841	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.6
3/6/2013	1311844	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.27
3/6/2013	1311849	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	7	Cont Soil Pet-RGC-Tons	MULT-IN	TON	22.47
3/6/2013	1311851	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.86
3/7/2013	1311878	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.15
3/7/2013	1311880	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.56
3/7/2013	1311882	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.72
3/7/2013	1311894	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	15	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.8
3/7/2013	1311905	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.28
3/7/2013	1311909	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.7
3/7/2013	1311922	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	81	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.63
3/7/2013	1311926	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	23.31
3/7/2013	1311929	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	8	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.83
3/7/2013	1311942	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	1	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.87
3/7/2013	1311944	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	24.4
3/6/2013	1311949	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	18	Cont Soil Pet-RGC-Tons	MULT-IN	TON	26.67
3/7/2013	1311953	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	18.47
3/7/2013	1311987	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.63
3/7/2013	1311988	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	16	Cont Soil Pet-RGC-Tons	MULT-IN	TON	21.07
3/8/2013	1312003	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	161	Cont Soil Pet-RGC-Tons	MULT-IN	TON	8.22
3/1/2013	1312188	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	11	Cont Soil Pet-RGC-Tons	MULT-IN	TON	18.37
3/1/2013	1312189	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	11	Cont Soil Pet-RGC-Tons	MULT-IN	TON	17.87
3/25/2013	1313206	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	6	Cont Soil Pet-RGC-Tons	MULT-IN	TON	9.34
9/4/2013	1328068	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	728	Cont Soil Pet-RGC-Tons	MULT-IN	TON	11.07
9/4/2013	1328075	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	9	Cont Soil Pet-RGC-Tons	MULT-IN	TON	13.98
9/5/2013	1328124	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	6	Cont Soil Pet-RGC-Tons	MULT-IN	TON	10.29
9/5/2013	1328160	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	6	Cont Soil Pet-RGC-Tons	MULT-IN	TON	12.3
9/13/2013	1329054	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	728	Cont Soil Pet-RGC-Tons	MULT-IN	TON	15.65
9/13/2013	1329057	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	734	Cont Soil Pet-RGC-Tons	MULT-IN	TON	13.13
9/13/2013	1329058	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	734	Cont Soil Pet-RGC-Tons	MULT-IN	TON	13.78
9/13/2013	1329059	City of Portland - Bes	OR-CITY OF PORTLAND - TILLAMOO	111045OR	728	Cont Soil Pet-RGC-Tons	MULT-IN	TON	10.43
Total	248								4904.54

Customer Summary Report
Criteria: 01/01/2013 12:00 AM to 10/09/2013 11:59 PM
Business Unit Name: Hillsboro Landfill - S03305 (USA)
User: kdrake1
Date: Oct 09 2013, 6:30:43 PM - Central Standard Time
Operation Type: All
Customer Name: All
Ticket Type: All
Customer Type: All
PMT Category: All
Profile: 111051OR

Ticket Date	Ticket ID	Customer	Generator	Profile	Truck	Material	Origin
2/18/2013	1310264	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	731	Special Misc-Tons	MULT-IN
2/19/2013	1310342	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	730	Special Misc-Tons	MULT-IN
2/19/2013	1310357	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	731	Special Misc-Tons	MULT-IN
2/19/2013	1310391	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	730	Special Misc-Tons	MULT-IN
2/19/2013	1310400	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	731	Special Misc-Tons	MULT-IN
2/20/2013	1310457	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	730	Special Misc-Tons	MULT-IN
2/21/2013	1310601	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	721	Special Misc-Tons	MULT-IN
2/21/2013	1310646	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	721	Special Misc-Tons	MULT-IN
2/21/2013	1310682	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	721	Special Misc-Tons	MULT-IN
2/21/2013	1310687	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	717	Special Misc-Tons	MULT-IN
2/21/2013	1310695	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	721	Special Misc-Tons	MULT-IN
2/22/2013	1310723	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	721	Special Misc-Tons	MULT-IN
3/15/2013	1312526	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	203	Special Misc-Tons	MULT-IN
3/15/2013	1312562	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	203	Special Misc-Tons	MULT-IN
3/22/2013	1313075	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	6	Special Misc-Tons	MULT-IN
6/27/2013	1321586	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	6	Special Misc-Tons	MULT-IN
6/27/2013	1321588	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	4943	Special Misc-Tons	MULT-IN
7/1/2013	1321906	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	777	Special Misc-Tons	MULT-IN
7/8/2013	1322397	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	777	Special Misc-Tons	MULT-IN
7/8/2013	1322419	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	777	Special Misc-Tons	MULT-IN
7/8/2013	1322458	City of Portland - Bes	OR-CITY OF PORTLAND - FOUNDRY	111051OR	777	Special Misc-Tons	MULT-IN
Material Total	21						

Rate Unit	Tons	Total
TON	16.92	$1,105.80
TON	15.35	$1,003.75
TON	7.28	$479.20
TON	19.69	$1,285.85
TON	8.82	$579.30
TON	16.47	$1,076.55
TON	16.31	$1,066.15
TON	14.34	$938.10
TON	11.99	$785.35
TON	16.37	$1,070.05
TON	18.97	$1,239.05
TON	19.89	$1,298.85
TON	15.3	$1,000.50
TON	14.04	$918.60
TON	5.21	$344.65
TON	9.23	$605.95
TON	9.65	$633.25
TON	12.62	$826.30
TON	18.16	$1,186.40
TON	17.89	$1,168.85
TON	16.98	$1,109.70
	301.48	$19,722.20

APPENDIX D

Confirmation Soil Sample Laboratory Reports

Apex Labs

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

Friday, March 1, 2013

Leonard Farr
Amec Environment & Infrastructure, Inc
7376 SW Durham Road
Portland, OR 97224

RE: IRP / 2-61M-122652

Enclosed are the results of analyses for work order A13B476, which was received by the laboratory on 2/22/2013 at 11:40:00AM.

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

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

Apex Laboratories

Philip Nerenberg, Lab Director

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

Apex Labs

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

Amec Environment & Infrastructure, Inc	Project: **IRP**	
7376 SW Durham Road	Project Number: 2-61M-122652	**Reported:**
Portland, OR 97224	Project Manager: Leonard Farr	03/01/13 09:23

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RCRA1-Bottom	A13B476-01	Soil	02/22/13 09:30	02/22/13 11:40
RCRA1-Sidewall	A13B476-02	Soil	02/22/13 09:35	02/22/13 11:40
B31-Bottom	A13B476-03	Soil	02/22/13 10:25	02/22/13 11:40
B31-Sidewall	A13B476-04	Soil	02/22/13 10:30	02/22/13 11:40

Apex Laboratories

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Amec Environment & Infrastructure, Inc	Project: **IRP**	
7376 SW Durham Road	Project Number: 2-61M-122652	**Reported:**
Portland, OR 97224	Project Manager: Leonard Farr	03/01/13 09:23

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
RCRA1-Bottom (A13B476-01)			**Matrix: Soil**					
Batch: 1302516								
Lead	**6.98**	---	1.29	mg/kg dry	10	02/22/13 16:32	EPA 6020A	
RCRA1-Sidewall (A13B476-02)			**Matrix: Soil**					
Batch: 1302516								
Lead	**7.10**	---	1.22	mg/kg dry	10	02/22/13 16:35	EPA 6020A	
B31-Bottom (A13B476-03)			**Matrix: Soil**					
Batch: 1302516								
Lead	**34.2**	---	1.28	mg/kg dry	10	02/22/13 16:39	EPA 6020A	
B31-Sidewall (A13B476-04)			**Matrix: Soil**					
Batch: 1302516								
Lead	**127**	---	1.23	mg/kg dry	10	02/22/13 16:42	EPA 6020A	

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Amec Environment & Infrastructure, Inc	Project: **IRP**	
7376 SW Durham Road	Project Number: 2-61M-122652	**Reported:**
Portland, OR 97224	Project Manager: Leonard Farr	03/01/13 09:23

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
RCRA1-Bottom (A13B476-01)			**Matrix: Soil**					
Batch: 1302563								
Lead	**0.0565**	---	0.0500	mg/L	5	02/25/13 14:42	1311/6020A	
RCRA1-Sidewall (A13B476-02)			**Matrix: Soil**					
Batch: 1302563								
Lead	ND	---	0.0500	mg/L	5	02/25/13 14:48	1311/6020A	
B31-Bottom (A13B476-03)			**Matrix: Soil**					
Batch: 1302563								
Lead	ND	---	0.0500	mg/L	5	02/25/13 14:51	1311/6020A	
B31-Sidewall (A13B476-04)			**Matrix: Soil**					
Batch: 1302563								
Lead	ND	---	0.0500	mg/L	5	02/25/13 14:58	1311/6020A	

Apex Laboratories

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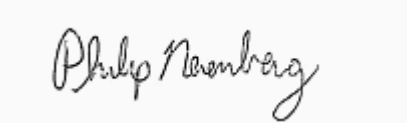
Amec Environment & Infrastructure, Inc	Project: **IRP**	
7376 SW Durham Road	Project Number: 2-61M-122652	**Reported:**
Portland, OR 97224	Project Manager: Leonard Farr	03/01/13 09:23

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
RCRA1-Bottom (A13B476-01)			**Matrix: Soil**		**Batch: 1302519**			
% Solids	**76.9**	---	1.00	% by Weight	1	02/25/13 09:48	Apex SOP	
RCRA1-Sidewall (A13B476-02)			**Matrix: Soil**		**Batch: 1302519**			
% Solids	**79.6**	---	1.00	% by Weight	1	02/25/13 09:48	Apex SOP	
B31-Bottom (A13B476-03)			**Matrix: Soil**		**Batch: 1302519**			
% Solids	**79.5**	---	1.00	% by Weight	1	02/25/13 09:48	Apex SOP	
B31-Sidewall (A13B476-04)			**Matrix: Soil**		**Batch: 1302519**			
% Solids	**82.4**	---	1.00	% by Weight	1	02/25/13 09:48	Apex SOP	

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

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

Amec Environment & Infrastructure, Inc	Project: **IRP**	
7376 SW Durham Road	Project Number: 2-61M-122652	**Reported:**
Portland, OR 97224	Project Manager: Leonard Farr	03/01/13 09:23

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1302516 - EPA 3051A							**Soil**					
Blank (1302516-BLK1)					Prepared: 02/22/13 14:17		Analyzed: 02/22/13 16:25					
EPA 6020A												
Lead	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
LCS (1302516-BS1)					Prepared: 02/22/13 14:17		Analyzed: 02/22/13 16:29					
EPA 6020A												
Lead	51.5	---	1.00	mg/kg wet	10	50.0	---	103	80-120%	---	---	
Duplicate (1302516-DUP1)					Prepared: 02/22/13 14:17		Analyzed: 02/22/13 16:45					
QC Source Sample: B31-Sidewall (A13B476-04)												
EPA 6020A												
Lead	**94.0**	---	1.17	mg/kg dry	10	---	127	---	---	30	40%	
Matrix Spike (1302516-MS1)					Prepared: 02/22/13 14:17		Analyzed: 02/22/13 16:48					
QC Source Sample: B31-Sidewall (A13B476-04)												
EPA 6020A												
Lead	170	---	1.26	mg/kg dry	10	62.8	127	67	75-125%	---	---	Q-04
Post Spike (1302516-PS1)					Prepared: 02/26/13 10:45		Analyzed: 02/26/13 11:03					
QC Source Sample: B31-Sidewall (A13B476-04)												
EPA 6020A												
Lead	1840	---		ug/L	10	909	945	99	80-120%		---	

Apex Laboratories

Philip Nerenberg, Lab Director

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

Amec Environment & Infrastructure, Inc	Project: **IRP**	
7376 SW Durham Road	Project Number: 2-61M-122652	**Reported:**
Portland, OR 97224	Project Manager: Leonard Farr	03/01/13 09:23

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1302563 - EPA 1311/3015							**Soil**					
Blank (1302563-BLK1)					Prepared: 02/25/13 12:51		Analyzed: 02/25/13 14:36					
1311/6020A												
Lead	ND	---	0.0500	mg/L	5	---	---	---	---	---	---	TCLP
LCS (1302563-BS1)					Prepared: 02/25/13 12:51		Analyzed: 02/25/13 14:39					
1311/6020A												
Lead	2.50	---	0.0500	mg/L	5	2.50	---	100	80-120%	---	---	TCLP
Matrix Spike (1302563-MS1)					Prepared: 02/25/13 12:51		Analyzed: 02/25/13 14:45					
QC Source Sample: RCRA1-Bottom (A13B476-01)												
1311/6020A												
Lead	2.56	---	0.0500	mg/L	5	2.50	0.0565	100	50-150%	---	---	
Matrix Spike (1302563-MS2)					Prepared: 02/25/13 12:51		Analyzed: 02/25/13 14:54					
QC Source Sample: B31-Bottom (A13B476-03)												
1311/6020A												
Lead	2.54	---	0.0500	mg/L	5	2.50	ND	102	50-150%	---	---	

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Amec Environment & Infrastructure, Inc	Project: **IRP**	
7376 SW Durham Road	Project Number: 2-61M-122652	**Reported:**
Portland, OR 97224	Project Manager: Leonard Farr	03/01/13 09:23

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1302519 - Total Solids (Dry Weight)							**Soil**					

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

Apex Laboratories

Philip Nerenberg, Lab Director

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

Amec Environment & Infrastructure, Inc	Project: **IRP**	
7376 SW Durham Road	Project Number: 2-61M-122652	**Reported:**
Portland, OR 97224	Project Manager: Leonard Farr	03/01/13 09:23

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1302516							
A13B476-01	Soil	EPA 6020A	02/22/13 09:30	02/22/13 14:17	0.504g/50mL	0.5g/50mL	0.99
A13B476-02	Soil	EPA 6020A	02/22/13 09:35	02/22/13 14:17	0.515g/50mL	0.5g/50mL	0.97
A13B476-03	Soil	EPA 6020A	02/22/13 10:25	02/22/13 14:17	0.493g/50mL	0.5g/50mL	1.01
A13B476-04	Soil	EPA 6020A	02/22/13 10:30	02/22/13 14:17	0.495g/50mL	0.5g/50mL	1.01

TCLP Metals by EPA 6020 (ICPMS)

Prep: EPA 1311/3015

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1302563							
A13B476-01	Soil	1311/6020A	02/22/13 09:30	02/25/13 12:51	5mL/50mL	5mL/50mL	1.00
A13B476-02	Soil	1311/6020A	02/22/13 09:35	02/25/13 12:51	5mL/50mL	5mL/50mL	1.00
A13B476-03	Soil	1311/6020A	02/22/13 10:25	02/25/13 12:51	5mL/50mL	5mL/50mL	1.00
A13B476-04	Soil	1311/6020A	02/22/13 10:30	02/25/13 12:51	5mL/50mL	5mL/50mL	1.00

Apex Laboratories

Philip Nerenberg, Lab Director

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

Amec Environment & Infrastructure, Inc	Project: **IRP**	
7376 SW Durham Road	Project Number: 2-61M-122652	**Reported:**
Portland, OR 97224	Project Manager: Leonard Farr	03/01/13 09:23

Notes and Definitions

Qualifiers:

Q-04	Percent recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
TCLP	This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 1302515.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepency with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

Philip Nerenberg, Lab Director

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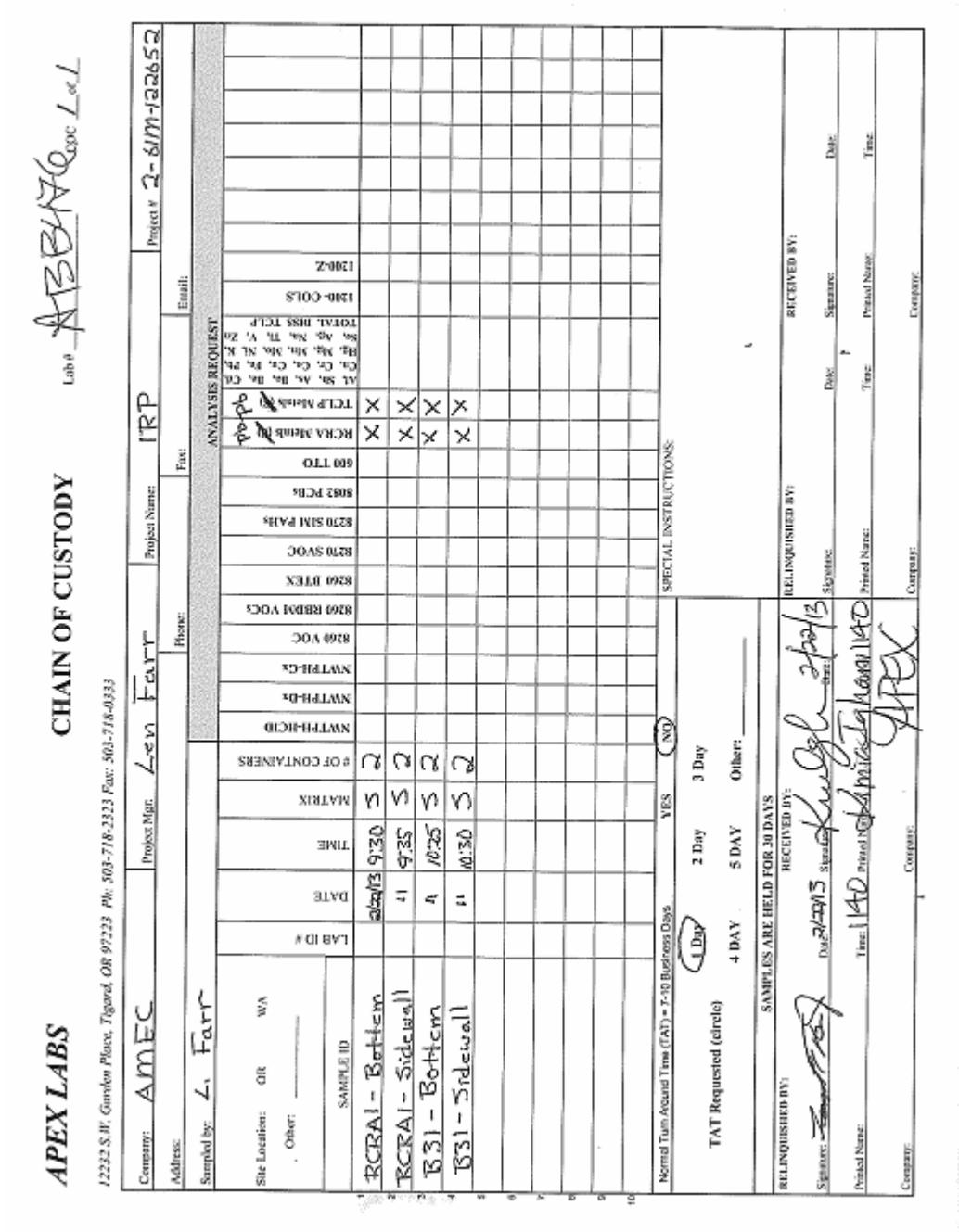
Amec Environment & Infrastructure, Inc	Project: **IRP**	
7376 SW Durham Road	Project Number: 2-61M-122652	**Reported:**
Portland, OR 97224	Project Manager: Leonard Farr	03/01/13 09:23



APEX LABS **CHAIN OF CUSTODY** Lab # ABBA76 COC 1 of 1

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

Company: AMEC | Project Mgr: Len Farr | Project Name: IRP | Project # 2-61M-122652

Address: | Phone: | Fax: | Email:

Sampled by: L. Farr

Site Location: OR WA Other: _____

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOC	8260 RBDM VOCs	8260 BTEX	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (Pb)	TCLP Metals (Pb)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL HSS TCLP	1200-COLS	1200-Z
RCRA1 - Bottom		2/22/13	9:30	S	2											X	X			
RCRA1 - Sidewall		"	9:35	S	2											X	X			
B31 - Bottom		"	10:25	S	2											X	X			
B31 - Sidewall		"	10:30	S	2											X	X			

Normal Turn Around Time (TAT) = 7-10 Business Days YES NO

TAT Requested (circle) 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: _____

SAMPLES ARE HELD FOR 30 DAYS

SPECIAL INSTRUCTIONS:

RELINQUISHED BY: Signature: [signature] Date: 2/22/13 Printed Name: Time: 1140 Company: Company:

RECEIVED BY: Signature: [signature] Date: 2/22/13 Printed Name: Admin Tgham 1140 Company: APEX

RELINQUISHED BY: Signature: Date: Printed Name: Time: Company:

RECEIVED BY: Signature: Date: Printed Name: Time: Company:

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B192**	Project Mgr:	John O'Donovan
Received:	2/25/13 15:30	WQDB #:	Janus825
Submitted By:	CSA/Consultant		

Sample	Laboratory ID	Matrix	Type	Sample Collection Date Start	Sample Collection Date End	Qualifier
02252013_CS	W13B192-01	Soil	Composite	02/25/13 14:30	02/25/13 14:30	

02252013_CS : W13B192-01

General Chemistry

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Total solids	**77.6**	% W/W	0.01		B13B386	02/26/13	02/27/13	SM 2540G	

Total Metals

Total Metals by ICPMS

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Arsenic	**6.05**	mg/kg dry	0.500	20	B13C006	03/01/13	03/05/13	EPA 6020	
Barium	**149**	mg/kg dry	0.100	20	B13C006	03/01/13	03/05/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C006	03/01/13	03/05/13	EPA 6020	
Chromium	**20.9**	mg/kg dry	0.500	20	B13C006	03/01/13	03/05/13	EPA 6020	
Lead	**9.11**	mg/kg dry	0.100	20	B13C006	03/01/13	03/05/13	EPA 6020	
Mercury	**0.0245**	mg/kg dry	0.0100	20	B13C006	03/01/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C006	03/01/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C006	03/01/13	03/05/13	EPA 6020	

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	

Surrogate	*Result*	*Expected*	*%Rec*	*Limits(%)*

Reported: 03/22/13 06:29

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B192**	Project Mgr:	John O'Donovan

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Semivolatile Organics - SIM									
Polynuclear Aromatic Hydrocarbons by GCMS-SIM									
2-Methylnaphthalene-d10	*73*		*114 64%*	*31.9-133*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*	
Fluoranthene-d10	*96*		*114 84%*	*64.7-154*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*	
Polychlorinated Biphenyls (PCBs)									
PCB Aroclors by GC-ECD									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1260	**43.6**	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*14.9*		*12.6*	*118%*	*60.3-141*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*
Decachlorobiphenyl	*15.0*		*12.6*	*119%*	*48.6-164*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*

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Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B192**	Project Mgr:	John O'Donovan

Quality Control Report

General Chemistry - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Solids - Batch B13B386									
Duplicate (B13B386-DUP1)			**Source: W13B192-01**						
Total solids	**78.4**	% W/W	0.01		77.6		1 *(5)*	02/26/13 :02/27/13	

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C006									
Blank (B13C006-BLK1)									
Arsenic	ND	mg/kg wet	0.500					03/01/13 :03/05/13	
Barium	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Cadmium	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Chromium	ND	mg/kg wet	0.500					03/01/13 :03/05/13	
Lead	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Mercury	ND	mg/kg wet	0.0100					03/01/13 :03/05/13	
Selenium	ND	mg/kg wet	1.00					03/01/13 :03/05/13	
Silver	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Standard Reference Material (B13C006-SRM1)									
Arsenic	**93.1**	mg/kg wet	0.500	94.5		98 *(75-125)*		03/01/13 :03/05/13	
Barium	**171**	mg/kg wet	0.100	188		91 *(75-125)*		03/01/13 :03/05/13	
Cadmium	**59.1**	mg/kg wet	0.100	60.5		98 *(75-125)*		03/01/13 :03/05/13	
Chromium	**75.3**	mg/kg wet	0.500	82.2		92 *(75-125)*		03/01/13 :03/05/13	
Lead	**97.6**	mg/kg wet	0.100	91.8		106 *(75-125)*		03/01/13 :03/05/13	
Mercury	**3.470**	mg/kg wet	0.0100	3.69		94 *(75-125)*		03/01/13 :03/05/13	
Selenium	**86.4**	mg/kg wet	1.00	91.6		94 *(75-125)*		03/01/13 :03/05/13	
Silver	**33.6**	mg/kg wet	0.100	34.4		98 *(75-125)*		03/01/13 :03/05/13	
Duplicate (B13C006-DUP1)			**Source: W13B177-03**						
Arsenic	**5.50**	mg/kg dry	0.500		5.11		7 *(20)*	03/01/13 :03/05/13	
Barium	**224**	mg/kg dry	0.100		221		1 *(20)*	03/01/13 :03/05/13	
Cadmium	ND	mg/kg dry	0.100		ND		*(20)*	03/01/13 :03/05/13	
Chromium	**48.1**	mg/kg dry	0.500		48.4		0.5 *(20)*	03/01/13 :03/05/13	
Lead	**13.4**	mg/kg dry	0.100		15.6		15 *(20)*	03/01/13 :03/05/13	
Mercury	**0.02370**	mg/kg dry	0.0100		0.02368		0.1 *(20)*	03/01/13 :03/05/13	
Selenium	ND	mg/kg dry	1.00		ND		*(20)*	03/01/13 :03/05/13	
Silver	ND	mg/kg dry	0.100		ND		*(20)*	03/01/13 :03/05/13	
Matrix Spike (B13C006-MS1)			**Source: W13B177-03**						
Arsenic	**21.8**	mg/kg dry	0.500	18.2	5.11	92 *(75-125)*		03/01/13 :03/05/13	
Barium	**487**	mg/kg dry	0.100	273	221	98 *(75-125)*		03/01/13 :03/05/13	

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Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B192**	Project Mgr:	John O'Donovan

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C006									
Matrix Spike (B13C006-MS1)			**Source: W13B177-03**						
Cadmium	**17.5**	mg/kg dry	0.100	18.2	ND	96 *(75-125)*		03/01/13 :03/05/13	
Chromium	**101**	mg/kg dry	0.500	54.6	48.4	97 *(75-125)*		03/01/13 :03/05/13	
Lead	**101**	mg/kg dry	0.100	91.0	15.6	94 *(75-125)*		03/01/13 :03/05/13	
Mercury	**0.9064**	mg/kg dry	0.0100	0.910	0.02368	97 *(75-125)*		03/01/13 :03/05/13	
Selenium	**83.2**	mg/kg dry	1.00	91.0	ND	91 *(75-125)*		03/01/13 :03/05/13	
Silver	**17.5**	mg/kg dry	0.100	18.2	ND	96 *(75-125)*		03/01/13 :03/05/13	

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B192**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Blank (B13C037-BLK1)									
Acenaphthene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Anthracene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Chrysene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluorene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Naphthalene	ND	ug/kg wet	40					03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*70*		ug/kg wet	*100*		70		03/04/13 :03/04/13	
Fluoranthene-d10	*92*		ug/kg wet	*100*		92		03/04/13 :03/04/13	
Blank (B13C037-BLK2)									
Acenaphthene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Anthracene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Chrysene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluorene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Naphthalene	ND	ug/kg wet	40					03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*64*		ug/kg wet	*100*		64		03/04/13 :03/04/13	
Fluoranthene-d10	*89*		ug/kg wet	*100*		89		03/04/13 :03/04/13	
LCS (B13C037-BS1)									

Reported: 03/22/13 06:29

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B192**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
LCS (B13C037-BS1)									
Acenaphthene	**35.6**	ug/kg wet	20	40.0		89 *(50-150)*		03/04/13 :03/04/13	
Acenaphthylene	**37.6**	ug/kg wet	20	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Anthracene	**37.2**	ug/kg wet	20	40.0		93 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)anthracene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)pyrene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Benzo(b)fluoranthene	**36.0**	ug/kg wet	10	40.0		90 *(50-150)*		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	**38.8**	ug/kg wet	10	40.0		97 *(50-150)*		03/04/13 :03/04/13	
Benzo(k)fluoranthene	**35.6**	ug/kg wet	10	40.0		89 *(50-150)*		03/04/13 :03/04/13	
Chrysene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	**36.0**	ug/kg wet	10	40.0		90 *(50-150)*		03/04/13 :03/04/13	
Fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Fluorene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Naphthalene	**32.0**	ug/kg wet	20	40.0		80 *(50-150)*		03/04/13 :03/04/13	
Phenanthrene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Pyrene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*66*		ug/kg wet	*100*		66 *(31.9-133)*		03/04/13 :03/04/13	
Fluoranthene-d10	*89*		ug/kg wet	*100*		89 *(64.7-154)*		03/04/13 :03/04/13	
LCS (B13C037-BS2)									
Acenaphthene	**37.6**	ug/kg wet	20	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Acenaphthylene	**38.4**	ug/kg wet	20	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Anthracene	**38.4**	ug/kg wet	20	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)anthracene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)pyrene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Benzo(b)fluoranthene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	**39.6**	ug/kg wet	10	40.0		99 *(50-150)*		03/04/13 :03/04/13	
Benzo(k)fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Chrysene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/04/13 :03/04/13	
Fluoranthene	**38.0**	ug/kg wet	10	40.0		95 *(50-150)*		03/04/13 :03/04/13	
Fluorene	**38.0**	ug/kg wet	20	40.0		95 *(50-150)*		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Naphthalene	**33.6**	ug/kg wet	20	40.0		84 *(50-150)*		03/04/13 :03/04/13	
Phenanthrene	**38.4**	ug/kg wet	20	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Pyrene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*65*		ug/kg wet	*100*		65 *(31.9-133)*		03/04/13 :03/04/13	
Fluoranthene-d10	*92*		ug/kg wet	*100*		92 *(64.7-154)*		03/04/13 :03/04/13	
Duplicate (B13C037-DUP1)			**Source: W13B210-01**						

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Jennifer Shackelford

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City of Portland
Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B192**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Duplicate (B13C037-DUP1)			**Source: W13B210-01**						
Acenaphthene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Acenaphthylene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Anthracene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Chrysene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Fluorene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Naphthalene	ND	ug/kg dry	40		ND		(50)	03/04/13 :03/05/13	
Phenanthrene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*73*		ug/kg dry	*107*		68		03/04/13 :03/05/13	
Fluoranthene-d10	*89*		ug/kg dry	*107*		84		03/04/13 :03/05/13	
Duplicate (B13C037-DUP2)			**Source: W13C011-03**						
Acenaphthene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Anthracene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Chrysene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluorene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Naphthalene	ND	ug/kg dry	40		ND		(50)	03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*62*		ug/kg dry	*115*		54		03/04/13 :03/04/13	
Fluoranthene-d10	*100*		ug/kg dry	*115*		90		03/04/13 :03/04/13	
Duplicate (B13C037-DUP3)			**Source: W13C011-05**						

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B192**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Duplicate (B13C037-DUP3)			**Source: W13C011-05**						
Acenaphthene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Acenaphthylene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Anthracene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Benzo(a)anthracene	**35.8**	ug/kg dry	10		37.3		4 (50)	03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Chrysene	**144**	ug/kg dry	10		142		1 (50)	03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg dry	250		ND		(50)	03/04/13 :03/04/13	D4, M15
Fluorene	**2560**	ug/kg dry	200		2850		11 (50)	03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Naphthalene	ND	ug/kg dry	1000		ND		(50)	03/04/13 :03/04/13	D4, M15
Phenanthrene	**5700**	ug/kg dry	200		6330		11 (50)	03/04/13 :03/05/13	
Pyrene	**743**	ug/kg dry	10		778		5 (50)	03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*110*		ug/kg dry	*119*		96		03/04/13 :03/04/13	
Fluoranthene-d10	*120*		ug/kg dry	*119*		102		03/04/13 :03/04/13	
Matrix Spike (B13C037-MS1)			**Source: W13B210-01**						
Acenaphthene	**105**	ug/kg dry	20	115	ND	91 (50-150)		03/04/13 :03/05/13	
Acenaphthylene	**108**	ug/kg dry	20	115	ND	94 (50-150)		03/04/13 :03/05/13	
Anthracene	**106**	ug/kg dry	20	115	ND	92 (50-150)		03/04/13 :03/05/13	
Benzo(a)anthracene	**109**	ug/kg dry	10	115	ND	94 (50-150)		03/04/13 :03/05/13	
Benzo(a)pyrene	**109**	ug/kg dry	10	115	ND	95 (50-150)		03/04/13 :03/05/13	
Benzo(b)fluoranthene	**103**	ug/kg dry	10	115	ND	90 (50-150)		03/04/13 :03/05/13	
Benzo(g,h,i)perylene	**113**	ug/kg dry	10	115	ND	98 (50-150)		03/04/13 :03/05/13	
Benzo(k)fluoranthene	**102**	ug/kg dry	10	115	ND	88 (50-150)		03/04/13 :03/05/13	
Chrysene	**106**	ug/kg dry	10	115	ND	92 (50-150)		03/04/13 :03/05/13	
Dibenzo(a,h)anthracene	**107**	ug/kg dry	10	115	ND	93 (50-150)		03/04/13 :03/05/13	
Fluoranthene	**108**	ug/kg dry	10	115	ND	94 (50-150)		03/04/13 :03/05/13	
Fluorene	**106**	ug/kg dry	20	115	ND	92 (50-150)		03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	**111**	ug/kg dry	10	115	ND	96 (50-150)		03/04/13 :03/05/13	
Naphthalene	**101**	ug/kg dry	40	115	ND	88 (50-150)		03/04/13 :03/05/13	
Phenanthrene	**104**	ug/kg dry	20	115	ND	90 (50-150)		03/04/13 :03/05/13	
Pyrene	**108**	ug/kg dry	10	115	ND	94 (50-150)		03/04/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*74*		ug/kg dry	*115*		64 (31.9-133)		03/04/13 :03/05/13	
Fluoranthene-d10	*91*		ug/kg dry	*115*		79 (64.7-154)		03/04/13 :03/05/13	
Matrix Spike (B13C037-MS2)			**Source: W13C011-03**						

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B192**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Matrix Spike (B13C037-MS2)			**Source: W13C011-03**						
Acenaphthene	**110**	ug/kg dry	20	121	ND	91 *(50-150)*		03/04/13 :03/04/13	
Acenaphthylene	**117**	ug/kg dry	20	121	ND	97 *(50-150)*		03/04/13 :03/04/13	
Anthracene	**115**	ug/kg dry	20	121	ND	95 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)anthracene	**121**	ug/kg dry	10	121	ND	100 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)pyrene	**125**	ug/kg dry	10	121	ND	104 *(50-150)*		03/04/13 :03/04/13	
Benzo(b)fluoranthene	**118**	ug/kg dry	10	121	ND	98 *(50-150)*		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	**132**	ug/kg dry	10	121	ND	109 *(50-150)*		03/04/13 :03/04/13	
Benzo(k)fluoranthene	**114**	ug/kg dry	10	121	ND	94 *(50-150)*		03/04/13 :03/04/13	
Chrysene	**121**	ug/kg dry	10	121	ND	100 *(50-150)*		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	**118**	ug/kg dry	10	121	ND	98 *(50-150)*		03/04/13 :03/04/13	
Fluoranthene	**123**	ug/kg dry	10	121	ND	102 *(50-150)*		03/04/13 :03/04/13	
Fluorene	**112**	ug/kg dry	20	121	ND	93 *(50-150)*		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	**127**	ug/kg dry	10	121	ND	105 *(50-150)*		03/04/13 :03/04/13	
Naphthalene	**108**	ug/kg dry	40	121	ND	89 *(50-150)*		03/04/13 :03/04/13	
Phenanthrene	**114**	ug/kg dry	20	121	ND	94 *(50-150)*		03/04/13 :03/04/13	
Pyrene	**126**	ug/kg dry	10	121	ND	105 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*69*		ug/kg dry	*121*		58 *(31.9-133)*		03/04/13 :03/04/13	
Fluoranthene-d10	*110*		ug/kg dry	*121*		90 *(64.7-154)*		03/04/13 :03/04/13	

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B192**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs) - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
PCB Aroclors by GC-ECD - Batch B13C018									
Blank (B13C018-BLK1)									
Aroclor 1016/1242	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1221	ND	ug/kg wet	20.0					03/01/13 :03/06/13	
Aroclor 1232	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1248	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1254	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1260	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1262	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1268	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Surrogate									
Tetrachloro-m-xylene	*11.4*		ug/kg wet	*10.0*		114		03/01/13 :03/06/13	
Decachlorobiphenyl	*13.0*		ug/kg wet	*10.0*		130		03/01/13 :03/06/13	
LCS (B13C018-BS1)									
Aroclor 1016/1242	**119.7**	ug/kg wet	10.0	100		120 *(78.7-127)*		03/01/13 :03/06/13	
Aroclor 1260	**108.4**	ug/kg wet	10.0	100		108 *(80.9-139)*		03/01/13 :03/06/13	
Surrogate									
Tetrachloro-m-xylene	*11.4*		ug/kg wet	*10.0*		114 *(60.3-141)*		03/01/13 :03/06/13	
Decachlorobiphenyl	*12.1*		ug/kg wet	*10.0*		121 *(48.6-164)*		03/01/13 :03/06/13	
Matrix Spike (B13C018-MS1)			**Source: W13B192-01**						
Aroclor 1016/1242	**148.7**	ug/kg dry	10.0	123	ND	121 *(50.8-144)*		03/01/13 :03/06/13	
Aroclor 1260	**174.4**	ug/kg dry	10.0	123	43.62	107 *(33-158)*		03/01/13 :03/06/13	
Surrogate									
Tetrachloro-m-xylene	*13.8*		ug/kg dry	*12.3*		113 *(60.3-141)*		03/01/13 :03/06/13	
Decachlorobiphenyl	*15.1*		ug/kg dry	*12.3*		123 *(48.6-164)*		03/01/13 :03/06/13	
Matrix Spike Dup (B13C018-MSD1)			**Source: W13B192-01**						
Aroclor 1016/1242	**146.7**	ug/kg dry	10.0	129	ND	114 *(50.8-144)*	1 *(20)*	03/01/13 :03/06/13	
Aroclor 1260	**207.0**	ug/kg dry	10.0	129	43.62	126 *(33-158)*	17 *(20)*	03/01/13 :03/06/13	
Surrogate									
Tetrachloro-m-xylene	*14.0*		ug/kg dry	*12.9*		108 *(60.3-141)*		03/01/13 :03/06/13	
Decachlorobiphenyl	*15.0*		ug/kg dry	*12.9*		116 *(48.6-164)*		03/01/13 :03/06/13	

Qualifiers

D4	Reporting limit is raised for this analyte due to non-target matrix interference.
M15	The result is an estimate due to chromatographic interference that affected quantitation.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference

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Portland, Oregon 97203-4552
Sample Custodian: (503) 823-5696
General Lab: (503) 823-5681

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 2-25-2013

Work Order #: W13B192

Collected By: Graeme Taylor

Client Name: Coordinated Site ~~Assessment~~ Analysis
m2 2/25/13

Project Name: Kenton Brass Foundry

Requested Analyses

Lab Number	Sample ID	Sample Date	Sample Time	Grab or Comp	Sample Matrix	SVOCs	RCRA 8 Metals	PCB Aroclors	Comments
01	02252013_CS	2-25-2013	1430	C	S	X	X	X	

Relinquished By:	Date:	Received By:	Date:	Relinquished By:	Date:	Received By:	Date:
Signature: Graeme Taylor	2-25-13	Signature:	2/25/13	Signature:		Signature:	
Printed Name: Graeme Taylor	Time: 1530	Printed Name: MacKenzie Tich	Time: 1530	Printed Name:	Time:	Printed Name:	Time:

CoC_Generic_new.xls

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B195**	Project Mgr:	John O'Donovan
Received:	2/26/13 14:12	WQDB #:	Janus825
Submitted By:	CSA/Consultant		

Sample	Laboratory ID	Matrix	Type	Sample Collection Date Start	Sample Collection Date End	Qualifier
02262013-CS	W13B195-01	Soil	Composite	02/26/13 13:25	02/26/13 13:25	

02262013-CS : W13B195-01

General Chemistry

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Total solids	**72.8**	% W/W	0.01		B13B387	02/26/13	02/27/13	SM 2540G	

Total Metals

Total Metals by ICPMS

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Arsenic	**7.01**	mg/kg dry	0.500	20	B13C006	03/01/13	03/05/13	EPA 6020	
Barium	**161**	mg/kg dry	0.100	20	B13C006	03/01/13	03/05/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C006	03/01/13	03/05/13	EPA 6020	
Chromium	**23.8**	mg/kg dry	0.500	20	B13C006	03/01/13	03/05/13	EPA 6020	
Lead	**9.75**	mg/kg dry	0.100	20	B13C006	03/01/13	03/05/13	EPA 6020	
Mercury	**0.0275**	mg/kg dry	0.0100	20	B13C006	03/01/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C006	03/01/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C006	03/01/13	03/05/13	EPA 6020	

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	

Surrogate	*Result*	*Expected*	*%Rec*	*Limits(%)*

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B195**	Project Mgr:	John O'Donovan

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Semivolatile Organics - SIM									
Polynuclear Aromatic Hydrocarbons by GCMS-SIM									
2-Methylnaphthalene-d10	*59*		*130 45%*	*31.9-133*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*	
Fluoranthene-d10	*100*		*130 78%*	*64.7-154*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*	
Polychlorinated Biphenyls (PCBs)									
PCB Aroclors by GC-ECD									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1260	**16.2**	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***					
Tetrachloro-m-xylene	*17.5*	*13.3*	*131%*	*60.3-141*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*	
Decachlorobiphenyl	*18.9*	*13.3*	*141%*	*48.6-164*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*	

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B195**	Project Mgr:	John O'Donovan

Quality Control Report

General Chemistry - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Solids - Batch B13B387									
Duplicate (B13B387-DUP1)			**Source: W13B195-01**						
Total solids	**72.9**	% W/W	0.01		72.8		0.2 *(5)*	02/26/13 :02/27/13	

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C006									
Blank (B13C006-BLK1)									
Arsenic	ND	mg/kg wet	0.500					03/01/13 :03/05/13	
Barium	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Cadmium	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Chromium	ND	mg/kg wet	0.500					03/01/13 :03/05/13	
Lead	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Mercury	ND	mg/kg wet	0.0100					03/01/13 :03/05/13	
Selenium	ND	mg/kg wet	1.00					03/01/13 :03/05/13	
Silver	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Standard Reference Material (B13C006-SRM1)									
Arsenic	**93.1**	mg/kg wet	0.500	94.5		98 *(75-125)*		03/01/13 :03/05/13	
Barium	**171**	mg/kg wet	0.100	188		91 *(75-125)*		03/01/13 :03/05/13	
Cadmium	**59.1**	mg/kg wet	0.100	60.5		98 *(75-125)*		03/01/13 :03/05/13	
Chromium	**75.3**	mg/kg wet	0.500	82.2		92 *(75-125)*		03/01/13 :03/05/13	
Lead	**97.6**	mg/kg wet	0.100	91.8		106 *(75-125)*		03/01/13 :03/05/13	
Mercury	**3.470**	mg/kg wet	0.0100	3.69		94 *(75-125)*		03/01/13 :03/05/13	
Selenium	**86.4**	mg/kg wet	1.00	91.6		94 *(75-125)*		03/01/13 :03/05/13	
Silver	**33.6**	mg/kg wet	0.100	34.4		98 *(75-125)*		03/01/13 :03/05/13	
Duplicate (B13C006-DUP1)			**Source: W13B177-03**						
Arsenic	**5.50**	mg/kg dry	0.500		5.11		7 *(20)*	03/01/13 :03/05/13	
Barium	**224**	mg/kg dry	0.100		221		1 *(20)*	03/01/13 :03/05/13	
Cadmium	ND	mg/kg dry	0.100		ND		*(20)*	03/01/13 :03/05/13	
Chromium	**48.1**	mg/kg dry	0.500		48.4		0.5 *(20)*	03/01/13 :03/05/13	
Lead	**13.4**	mg/kg dry	0.100		15.6		15 *(20)*	03/01/13 :03/05/13	
Mercury	**0.02370**	mg/kg dry	0.0100		0.02368		0.1 *(20)*	03/01/13 :03/05/13	
Selenium	ND	mg/kg dry	1.00		ND		*(20)*	03/01/13 :03/05/13	
Silver	ND	mg/kg dry	0.100		ND		*(20)*	03/01/13 :03/05/13	
Matrix Spike (B13C006-MS1)			**Source: W13B177-03**						
Arsenic	**21.8**	mg/kg dry	0.500	18.2	5.11	92 *(75-125)*		03/01/13 :03/05/13	
Barium	**487**	mg/kg dry	0.100	273	221	98 *(75-125)*		03/01/13 :03/05/13	

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B195**	Project Mgr:	John O'Donovan

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C006									
Matrix Spike (B13C006-MS1)			**Source: W13B177-03**						
Cadmium	**17.5**	mg/kg dry	0.100	18.2	ND	96 *(75-125)*		03/01/13 :03/05/13	
Chromium	**101**	mg/kg dry	0.500	54.6	48.4	97 *(75-125)*		03/01/13 :03/05/13	
Lead	**101**	mg/kg dry	0.100	91.0	15.6	94 *(75-125)*		03/01/13 :03/05/13	
Mercury	**0.9064**	mg/kg dry	0.0100	0.910	0.02368	97 *(75-125)*		03/01/13 :03/05/13	
Selenium	**83.2**	mg/kg dry	1.00	91.0	ND	91 *(75-125)*		03/01/13 :03/05/13	
Silver	**17.5**	mg/kg dry	0.100	18.2	ND	96 *(75-125)*		03/01/13 :03/05/13	

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B195**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Blank (B13C037-BLK1)									
Acenaphthene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Anthracene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Chrysene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluorene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Naphthalene	ND	ug/kg wet	40					03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*70*		ug/kg wet	*100*		70		03/04/13 :03/04/13	
Fluoranthene-d10	*92*		ug/kg wet	*100*		92		03/04/13 :03/04/13	
Blank (B13C037-BLK2)									
Acenaphthene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Anthracene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Chrysene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluorene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Naphthalene	ND	ug/kg wet	40					03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*64*		ug/kg wet	*100*		64		03/04/13 :03/04/13	
Fluoranthene-d10	*89*		ug/kg wet	*100*		89		03/04/13 :03/04/13	
LCS (B13C037-BS1)									

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B195**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
LCS (B13C037-BS1)									
Acenaphthene	**35.6**	ug/kg wet	20	40.0		89 *(50-150)*		03/04/13 :03/04/13	
Acenaphthylene	**37.6**	ug/kg wet	20	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Anthracene	**37.2**	ug/kg wet	20	40.0		93 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)anthracene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)pyrene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Benzo(b)fluoranthene	**36.0**	ug/kg wet	10	40.0		90 *(50-150)*		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	**38.8**	ug/kg wet	10	40.0		97 *(50-150)*		03/04/13 :03/04/13	
Benzo(k)fluoranthene	**35.6**	ug/kg wet	10	40.0		89 *(50-150)*		03/04/13 :03/04/13	
Chrysene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	**36.0**	ug/kg wet	10	40.0		90 *(50-150)*		03/04/13 :03/04/13	
Fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Fluorene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Naphthalene	**32.0**	ug/kg wet	20	40.0		80 *(50-150)*		03/04/13 :03/04/13	
Phenanthrene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Pyrene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*66*		ug/kg wet	*100*		66 *(31.9-133)*		03/04/13 :03/04/13	
Fluoranthene-d10	*89*		ug/kg wet	*100*		89 *(64.7-154)*		03/04/13 :03/04/13	
LCS (B13C037-BS2)									
Acenaphthene	**37.6**	ug/kg wet	20	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Acenaphthylene	**38.4**	ug/kg wet	20	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Anthracene	**38.4**	ug/kg wet	20	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)anthracene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)pyrene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Benzo(b)fluoranthene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	**39.6**	ug/kg wet	10	40.0		99 *(50-150)*		03/04/13 :03/04/13	
Benzo(k)fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Chrysene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/04/13 :03/04/13	
Fluoranthene	**38.0**	ug/kg wet	10	40.0		95 *(50-150)*		03/04/13 :03/04/13	
Fluorene	**38.0**	ug/kg wet	20	40.0		95 *(50-150)*		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Naphthalene	**33.6**	ug/kg wet	20	40.0		84 *(50-150)*		03/04/13 :03/04/13	
Phenanthrene	**38.4**	ug/kg wet	20	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Pyrene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*65*		ug/kg wet	*100*		65 *(31.9-133)*		03/04/13 :03/04/13	
Fluoranthene-d10	*92*		ug/kg wet	*100*		92 *(64.7-154)*		03/04/13 :03/04/13	
Duplicate (B13C037-DUP1)			**Source: W13B210-01**						

Reported: 03/22/13 06:29

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B195**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Duplicate (B13C037-DUP1)			**Source: W13B210-01**						
Acenaphthene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Acenaphthylene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Anthracene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Chrysene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Fluorene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Naphthalene	ND	ug/kg dry	40		ND		(50)	03/04/13 :03/05/13	
Phenanthrene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*73*		ug/kg dry	*107*		68		03/04/13 :03/05/13	
Fluoranthene-d10	*89*		ug/kg dry	*107*		84		03/04/13 :03/05/13	
Duplicate (B13C037-DUP2)			**Source: W13C011-03**						
Acenaphthene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Anthracene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Chrysene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluorene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Naphthalene	ND	ug/kg dry	40		ND		(50)	03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*62*		ug/kg dry	*115*		54		03/04/13 :03/04/13	
Fluoranthene-d10	*100*		ug/kg dry	*115*		90		03/04/13 :03/04/13	
Duplicate (B13C037-DUP3)			**Source: W13C011-05**						

Reported: 03/22/13 06:29

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Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B195**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Duplicate (B13C037-DUP3)			**Source: W13C011-05**						
Acenaphthene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Acenaphthylene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Anthracene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Benzo(a)anthracene	**35.8**	ug/kg dry	10		37.3		4 (50)	03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Chrysene	**144**	ug/kg dry	10		142		1 (50)	03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg dry	250		ND		(50)	03/04/13 :03/04/13	D4, M15
Fluorene	**2560**	ug/kg dry	200		2850		11 (50)	03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Naphthalene	ND	ug/kg dry	1000		ND		(50)	03/04/13 :03/04/13	D4, M15
Phenanthrene	**5700**	ug/kg dry	200		6330		11 (50)	03/04/13 :03/05/13	
Pyrene	**743**	ug/kg dry	10		778		5 (50)	03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*110*		ug/kg dry	*119*		96		03/04/13 :03/04/13	
Fluoranthene-d10	*120*		ug/kg dry	*119*		102		03/04/13 :03/04/13	
Matrix Spike (B13C037-MS1)			**Source: W13B210-01**						
Acenaphthene	**105**	ug/kg dry	20	115	ND	91 (50-150)		03/04/13 :03/05/13	
Acenaphthylene	**108**	ug/kg dry	20	115	ND	94 (50-150)		03/04/13 :03/05/13	
Anthracene	**106**	ug/kg dry	20	115	ND	92 (50-150)		03/04/13 :03/05/13	
Benzo(a)anthracene	**109**	ug/kg dry	10	115	ND	94 (50-150)		03/04/13 :03/05/13	
Benzo(a)pyrene	**109**	ug/kg dry	10	115	ND	95 (50-150)		03/04/13 :03/05/13	
Benzo(b)fluoranthene	**103**	ug/kg dry	10	115	ND	90 (50-150)		03/04/13 :03/05/13	
Benzo(g,h,i)perylene	**113**	ug/kg dry	10	115	ND	98 (50-150)		03/04/13 :03/05/13	
Benzo(k)fluoranthene	**102**	ug/kg dry	10	115	ND	88 (50-150)		03/04/13 :03/05/13	
Chrysene	**106**	ug/kg dry	10	115	ND	92 (50-150)		03/04/13 :03/05/13	
Dibenzo(a,h)anthracene	**107**	ug/kg dry	10	115	ND	93 (50-150)		03/04/13 :03/05/13	
Fluoranthene	**108**	ug/kg dry	10	115	ND	94 (50-150)		03/04/13 :03/05/13	
Fluorene	**106**	ug/kg dry	20	115	ND	92 (50-150)		03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	**111**	ug/kg dry	10	115	ND	96 (50-150)		03/04/13 :03/05/13	
Naphthalene	**101**	ug/kg dry	40	115	ND	88 (50-150)		03/04/13 :03/05/13	
Phenanthrene	**104**	ug/kg dry	20	115	ND	90 (50-150)		03/04/13 :03/05/13	
Pyrene	**108**	ug/kg dry	10	115	ND	94 (50-150)		03/04/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*74*		ug/kg dry	*115*		64 (31.9-133)		03/04/13 :03/05/13	
Fluoranthene-d10	*91*		ug/kg dry	*115*		79 (64.7-154)		03/04/13 :03/05/13	
Matrix Spike (B13C037-MS2)			**Source: W13C011-03**						

Reported: 03/22/13 06:29

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Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B195**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Matrix Spike (B13C037-MS2)			**Source: W13C011-03**						
Acenaphthene	**110**	ug/kg dry	20	121	ND	91 *(50-150)*		03/04/13 :03/04/13	
Acenaphthylene	**117**	ug/kg dry	20	121	ND	97 *(50-150)*		03/04/13 :03/04/13	
Anthracene	**115**	ug/kg dry	20	121	ND	95 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)anthracene	**121**	ug/kg dry	10	121	ND	100 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)pyrene	**125**	ug/kg dry	10	121	ND	104 *(50-150)*		03/04/13 :03/04/13	
Benzo(b)fluoranthene	**118**	ug/kg dry	10	121	ND	98 *(50-150)*		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	**132**	ug/kg dry	10	121	ND	109 *(50-150)*		03/04/13 :03/04/13	
Benzo(k)fluoranthene	**114**	ug/kg dry	10	121	ND	94 *(50-150)*		03/04/13 :03/04/13	
Chrysene	**121**	ug/kg dry	10	121	ND	100 *(50-150)*		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	**118**	ug/kg dry	10	121	ND	98 *(50-150)*		03/04/13 :03/04/13	
Fluoranthene	**123**	ug/kg dry	10	121	ND	102 *(50-150)*		03/04/13 :03/04/13	
Fluorene	**112**	ug/kg dry	20	121	ND	93 *(50-150)*		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	**127**	ug/kg dry	10	121	ND	105 *(50-150)*		03/04/13 :03/04/13	
Naphthalene	**108**	ug/kg dry	40	121	ND	89 *(50-150)*		03/04/13 :03/04/13	
Phenanthrene	**114**	ug/kg dry	20	121	ND	94 *(50-150)*		03/04/13 :03/04/13	
Pyrene	**126**	ug/kg dry	10	121	ND	105 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*69*		ug/kg dry	*121*		58 *(31.9-133)*		03/04/13 :03/04/13	
Fluoranthene-d10	*110*		ug/kg dry	*121*		90 *(64.7-154)*		03/04/13 :03/04/13	

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B195**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs) - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
PCB Aroclors by GC-ECD - Batch B13C018									
Blank (B13C018-BLK1)									
Aroclor 1016/1242	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1221	ND	ug/kg wet	20.0					03/01/13 :03/06/13	
Aroclor 1232	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1248	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1254	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1260	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1262	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1268	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Surrogate									
Tetrachloro-m-xylene	*11.4*		ug/kg wet	*10.0*		114		03/01/13 :03/06/13	
Decachlorobiphenyl	*13.0*		ug/kg wet	*10.0*		130		03/01/13 :03/06/13	
LCS (B13C018-BS1)									
Aroclor 1016/1242	**119.7**	ug/kg wet	10.0	100		120 *(78.7-127)*		03/01/13 :03/06/13	
Aroclor 1260	**108.4**	ug/kg wet	10.0	100		108 *(80.9-139)*		03/01/13 :03/06/13	
Surrogate									
Tetrachloro-m-xylene	*11.4*		ug/kg wet	*10.0*		114 *(60.3-141)*		03/01/13 :03/06/13	
Decachlorobiphenyl	*12.1*		ug/kg wet	*10.0*		121 *(48.6-164)*		03/01/13 :03/06/13	
Matrix Spike (B13C018-MS1)			**Source: W13B192-01**						
Aroclor 1016/1242	**148.7**	ug/kg dry	10.0	123	ND	121 *(50.8-144)*		03/01/13 :03/06/13	
Aroclor 1260	**174.4**	ug/kg dry	10.0	123	43.62	107 *(33-158)*		03/01/13 :03/06/13	
Surrogate									
Tetrachloro-m-xylene	*13.8*		ug/kg dry	*12.3*		113 *(60.3-141)*		03/01/13 :03/06/13	
Decachlorobiphenyl	*15.1*		ug/kg dry	*12.3*		123 *(48.6-164)*		03/01/13 :03/06/13	
Matrix Spike Dup (B13C018-MSD1)			**Source: W13B192-01**						
Aroclor 1016/1242	**146.7**	ug/kg dry	10.0	129	ND	114 *(50.8-144)*	1 *(20)*	03/01/13 :03/06/13	
Aroclor 1260	**207.0**	ug/kg dry	10.0	129	43.62	126 *(33-158)*	17 *(20)*	03/01/13 :03/06/13	
Surrogate									
Tetrachloro-m-xylene	*14.0*		ug/kg dry	*12.9*		108 *(60.3-141)*		03/01/13 :03/06/13	
Decachlorobiphenyl	*15.0*		ug/kg dry	*12.9*		116 *(48.6-164)*		03/01/13 :03/06/13	

Qualifiers

D4	Reporting limit is raised for this analyte due to non-target matrix interference.
M15	The result is an estimate due to chromatographic interference that affected quantitation.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference

Reported: 03/22/13 06:29

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Jennifer Shackelford, Laboratory Coordinator QA/QC

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
Sample Custodian: (503) 823-5696
General Lab: (503) 823-5681

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 2-26-2013
Work Order #: W13B195
Collected By: G. Taylor

Client Name:
Project Name: Kenton Brass Foundry

Requested Analyses

Lab Number	Comments	Sample ID	Sample Date	Sample Time	Grab or Comp	Sample Matrix	PCB Aroclors	RCRA 8 Metals	PAHs 8270 SIM
01		02262013_CS	2-26-13	1325	C	S	X	X	X

Relinquished By:	Date:	Received By:	Date:	Relinquished By:	Date:	Received By:	Date:
Signature: Graeme Taylor	2-26-13	Signature:	2/26/13	Signature:		Signature:	
Printed Name: Graeme Taylor	Time: 1412	Printed Name: Mackenzie Zirk	Time: 1412	Printed Name:	Time:	Printed Name:	Time:

CoC_Generic_new.xls

Page _____ of _____

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan
Received:	2/27/13 16:40	WQDB #:	Janus825
Submitted By:	CSA/Consultant		

Sample	Laboratory ID	Matrix	Type	Sample Collection Date Start	Sample Collection Date End	Qualifier
SW-W-1	W13B210-01	Soil	Composite	02/26/13 14:30	02/26/13 14:30	
SW-S-1	W13B210-02	Soil	Composite	02/26/13 15:00	02/26/13 15:00	
2-26-2013-CS2	W13B210-03	Soil	Composite	02/26/13 15:45	02/26/13 15:45	
2-27-2013-CB1	W13B210-04	Soil	Composite	02/27/13 13:30	02/27/13 13:30	
2-27-2013-CB2	W13B210-05	Soil	Composite	02/27/13 14:00	02/27/13 14:00	
SW-W-2	W13B210-06	Soil	Composite	02/27/13 14:25	02/27/13 14:25	
2-27-2013-CB3	W13B210-07	Soil	Composite	02/27/13 14:45	02/27/13 14:45	

General Chemistry

Total Solids

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
SW-W-1 : W13B210-01									
Total solids	**79.6**	% W/W	0.01		B13B427	02/28/13	03/01/13	SM 2540G	
SW-S-1 : W13B210-02									
Total solids	**76.7**	% W/W	0.01		B13B427	02/28/13	03/01/13	SM 2540G	
2-26-2013-CS2 : W13B210-03									
Total solids	**73.5**	% W/W	0.01		B13B427	02/28/13	03/01/13	SM 2540G	
2-27-2013-CB1 : W13B210-04									
Total solids	**72.1**	% W/W	0.01		B13B427	02/28/13	03/01/13	SM 2540G	
2-27-2013-CB2 : W13B210-05									
Total solids	**76.5**	% W/W	0.01		B13B427	02/28/13	03/01/13	SM 2540G	
SW-W-2 : W13B210-06									
Total solids	**73.5**	% W/W	0.01		B13B427	02/28/13	03/01/13	SM 2540G	
2-27-2013-CB3 : W13B210-07									
Total solids	**74.6**	% W/W	0.01		B13B427	02/28/13	03/01/13	SM 2540G	

Reported: 03/25/13 10:26

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Total Metals

Total Metals by ICPMS

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
SW-W-1 : W13B210-01									
Arsenic	**5.00**	mg/kg dry	0.500	20	B13C007	03/01/13	03/05/13	EPA 6020	
Barium	**157**	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Cadmium	**0.102**	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Chromium	**20.7**	mg/kg dry	0.500	20	B13C007	03/01/13	03/05/13	EPA 6020	
Lead	**8.21**	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Mercury	**0.0185**	mg/kg dry	0.0100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C007	03/01/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
SW-S-1 : W13B210-02									
Arsenic	**5.98**	mg/kg dry	0.500	20	B13C007	03/01/13	03/05/13	EPA 6020	
Barium	**156**	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Cadmium	**0.123**	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Chromium	**22.6**	mg/kg dry	0.500	20	B13C007	03/01/13	03/05/13	EPA 6020	
Lead	**10.1**	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Mercury	**0.0285**	mg/kg dry	0.0100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C007	03/01/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
2-26-2013-CS2 : W13B210-03									
Arsenic	**5.20**	mg/kg dry	0.500	20	B13C007	03/01/13	03/05/13	EPA 6020	
Barium	**157**	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Chromium	**21.6**	mg/kg dry	0.500	20	B13C007	03/01/13	03/05/13	EPA 6020	
Lead	**9.97**	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Mercury	**0.0253**	mg/kg dry	0.0100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C007	03/01/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
2-27-2013-CB1 : W13B210-04									
Arsenic	**6.24**	mg/kg dry	0.500	20	B13C007	03/01/13	03/05/13	EPA 6020	
Barium	**179**	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Chromium	**26.0**	mg/kg dry	0.500	20	B13C007	03/01/13	03/05/13	EPA 6020	
Lead	**10.3**	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Mercury	**0.0182**	mg/kg dry	0.0100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C007	03/01/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
2-27-2013-CB2 : W13B210-05									
Arsenic	**4.27**	mg/kg dry	0.500	20	B13C007	03/01/13	03/05/13	EPA 6020	
Barium	**142**	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Total Metals

Total Metals by ICPMS

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
2-27-2013-CB2 : W13B210-05									
Chromium	**18.9**	mg/kg dry	0.500	20	B13C007	03/01/13	03/05/13	EPA 6020	
Lead	**7.90**	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Mercury	**0.0153**	mg/kg dry	0.0100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C007	03/01/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
SW-W-2 : W13B210-06									
Arsenic	**6.16**	mg/kg dry	0.500	20	B13C007	03/01/13	03/05/13	EPA 6020	
Barium	**168**	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Chromium	**24.1**	mg/kg dry	0.500	20	B13C007	03/01/13	03/05/13	EPA 6020	
Lead	**10.6**	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Mercury	**0.0190**	mg/kg dry	0.0100	20	B13C007	03/01/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C007	03/01/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C007	03/01/13	03/05/13	EPA 6020	
2-27-2013-CB3 : W13B210-07									
Arsenic	**5.91**	mg/kg dry	0.500	20	B13C008	03/01/13	03/05/13	EPA 6020	
Barium	**154**	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Chromium	**23.9**	mg/kg dry	0.500	20	B13C008	03/01/13	03/05/13	EPA 6020	
Lead	**10.2**	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Mercury	**0.0183**	mg/kg dry	0.0100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C008	03/01/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

SW-W-1 : W13B210-01

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*79*	*125*	*63%*	*31.9-133*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*
Fluoranthene-d10	*110*	*125*	*87%*	*64.7-154*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*

SW-S-1 : W13B210-02

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*70*	*113*	*62%*	*31.9-133*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*
Fluoranthene-d10	*90*	*113*	*79%*	*64.7-154*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*

2-26-2013-CS2 : W13B210-03

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

2-26-2013-CS2 : W13B210-03

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*68*	*126*	*54%*	*31.9-133*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*
Fluoranthene-d10	*110*	*126*	*85%*	*64.7-154*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*

2-27-2013-CB1 : W13B210-04

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*52*	*129*	*40%*	*31.9-133*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*
Fluoranthene-d10	*98*	*129*	*76%*	*64.7-154*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*

2-27-2013-CB2 : W13B210-05

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

2-27-2013-CB2 : W13B210-05

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*130*	*234*	*56%*	*31.9-133*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*
Fluoranthene-d10	*190*	*234*	*79%*	*64.7-154*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*

SW-W-2 : W13B210-06

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*60*	*122*	*50%*	*31.9-133*	*B13C071*	*03/05/13*	*03/05/13*	*EPA 8270-SIM*
Fluoranthene-d10	*110*	*122*	*86%*	*64.7-154*	*B13C071*	*03/05/13*	*03/05/13*	*EPA 8270-SIM*

2-27-2013-CB3 : W13B210-07

Reported: 03/25/13 10:26

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

2-27-2013-CB3 : W13B210-07

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*59*	*124*	*48%*	*31.9-133*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*
Fluoranthene-d10	*95*	*124*	*77%*	*64.7-154*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*

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City of Portland
Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs)

PCB Aroclors by GC-ECD

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
SW-W-1 : W13B210-01									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1260	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*14.1*		*12.2*	*116%*	*60.3-141*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*
Decachlorobiphenyl	*14.8*		*12.2*	*121%*	*48.6-164*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*
SW-S-1 : W13B210-02									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1260	**91.4**	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*17.7*		*12.5*	*141%*	*60.3-141*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*	*SU6*
Decachlorobiphenyl	*14.6*		*12.5*	*116%*	*48.6-164*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*
2-26-2013-CS2 : W13B210-03									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1260	**15.7**	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*15.2*		*13.2*	*115%*	*60.3-141*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*
Decachlorobiphenyl	*16.4*		*13.2*	*125%*	*48.6-164*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*
2-27-2013-CB1 : W13B210-04									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs)

PCB Aroclors by GC-ECD

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
2-27-2013-CB1 : W13B210-04									
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1260	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*12.7*		*13.5*	*94%*	*60.3-141*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*
Decachlorobiphenyl	*13.5*		*13.5*	*100%*	*48.6-164*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*
2-27-2013-CB2 : W13B210-05									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1260	**40.6**	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*11.2*		*12.6*	*89%*	*60.3-141*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*
Decachlorobiphenyl	*11.4*		*12.6*	*91%*	*48.6-164*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*
SW-W-2 : W13B210-06									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1260	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*10.2*		*13.4*	*76%*	*60.3-141*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*
Decachlorobiphenyl	*8.69*		*13.4*	*65%*	*48.6-164*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*
2-27-2013-CB3 : W13B210-07									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1260	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs)

PCB Aroclors by GC-ECD

2-27-2013-CB3 : W13B210-07

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C018	03/01/13	03/06/13	EPA 8082	

Surrogate	*Result*	*Expected*	*%Rec*	*Limits(%)*					
Tetrachloro-m-xylene	*13.6*	*13.0*	*105%*	*60.3-141*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*	
Decachlorobiphenyl	*15.2*	*13.0*	*117%*	*48.6-164*	*B13C018*	*03/01/13*	*03/06/13*	*EPA 8082*	

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Quality Control Report

General Chemistry - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Solids - Batch B13B427									
Duplicate (B13B427-DUP1)			**Source: W13B209-04**						
Total solids	**78.5**	% W/W	0.01		76.8		2 *(5)*	02/28/13 :03/01/13	
Duplicate (B13B427-DUP2)			**Source: W13B210-05**						
Total solids	**77.1**	% W/W	0.01		76.5		0.9 *(5)*	02/28/13 :03/01/13	

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C007									
Blank (B13C007-BLK1)									
Arsenic	ND	mg/kg wet	0.500					03/01/13 :03/05/13	
Barium	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Cadmium	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Chromium	ND	mg/kg wet	0.500					03/01/13 :03/05/13	
Lead	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Mercury	ND	mg/kg wet	0.0100					03/01/13 :03/05/13	
Selenium	ND	mg/kg wet	1.00					03/01/13 :03/05/13	
Silver	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Standard Reference Material (B13C007-SRM1)									
Arsenic	**95.7**	mg/kg wet	0.500	94.5		101 *(75-125)*		03/01/13 :03/05/13	
Barium	**198**	mg/kg wet	0.100	188		105 *(75-125)*		03/01/13 :03/05/13	
Cadmium	**59.9**	mg/kg wet	0.100	60.5		99 *(75-125)*		03/01/13 :03/05/13	
Chromium	**86.2**	mg/kg wet	0.500	82.2		105 *(75-125)*		03/01/13 :03/05/13	
Lead	**96.7**	mg/kg wet	0.100	91.8		105 *(75-125)*		03/01/13 :03/05/13	
Mercury	**3.465**	mg/kg wet	0.0100	3.69		94 *(75-125)*		03/01/13 :03/05/13	
Selenium	**90.1**	mg/kg wet	1.00	91.6		98 *(75-125)*		03/01/13 :03/05/13	
Silver	**35.5**	mg/kg wet	0.100	34.4		103 *(75-125)*		03/01/13 :03/05/13	
Duplicate (B13C007-DUP1)			**Source: W13B209-02**						
Arsenic	**2.97**	mg/kg dry	0.500		3.02		2 *(20)*	03/01/13 :03/05/13	
Barium	**149**	mg/kg dry	0.100		156		5 *(20)*	03/01/13 :03/05/13	
Cadmium	ND	mg/kg dry	0.100		ND		*(20)*	03/01/13 :03/05/13	
Chromium	**28.8**	mg/kg dry	0.500		29.4		2 *(20)*	03/01/13 :03/05/13	
Lead	**16.6**	mg/kg dry	0.100		16.9		2 *(20)*	03/01/13 :03/05/13	
Mercury	**0.03699**	mg/kg dry	0.0100		0.03795		3 *(20)*	03/01/13 :03/05/13	
Selenium	ND	mg/kg dry	1.00		ND		*(20)*	03/01/13 :03/05/13	
Silver	ND	mg/kg dry	0.100		ND		*(20)*	03/01/13 :03/05/13	
Matrix Spike (B13C007-MS1)			**Source: W13B209-02**						

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C007									
Matrix Spike (B13C007-MS1)			**Source: W13B209-02**						
Arsenic	**17.9**	mg/kg dry	0.500	16.9	3.02	88 *(75-125)*		03/01/13 :03/05/13	
Barium	**387**	mg/kg dry	0.100	254	156	91 *(75-125)*		03/01/13 :03/05/13	
Cadmium	**16.3**	mg/kg dry	0.100	16.9	ND	96 *(75-125)*		03/01/13 :03/05/13	
Chromium	**78.0**	mg/kg dry	0.500	50.7	29.4	96 *(75-125)*		03/01/13 :03/05/13	
Lead	**97.6**	mg/kg dry	0.100	84.5	16.9	96 *(75-125)*		03/01/13 :03/05/13	
Mercury	**0.8492**	mg/kg dry	0.0100	0.845	0.03795	96 *(75-125)*		03/01/13 :03/05/13	
Selenium	**78.3**	mg/kg dry	1.00	84.5	ND	93 *(75-125)*		03/01/13 :03/05/13	
Silver	**16.1**	mg/kg dry	0.100	16.9	ND	95 *(75-125)*		03/01/13 :03/05/13	
Total Metals by ICPMS - Batch B13C008									
Blank (B13C008-BLK1)									
Arsenic	ND	mg/kg wet	0.500					03/01/13 :03/05/13	
Barium	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Cadmium	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Chromium	ND	mg/kg wet	0.500					03/01/13 :03/05/13	
Lead	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Mercury	ND	mg/kg wet	0.0100					03/01/13 :03/05/13	
Selenium	ND	mg/kg wet	1.00					03/01/13 :03/05/13	
Silver	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Standard Reference Material (B13C008-SRM1)									
Arsenic	**99.5**	mg/kg wet	0.500	94.5		105 *(75-125)*		03/01/13 :03/05/13	
Barium	**179**	mg/kg wet	0.100	188		95 *(75-125)*		03/01/13 :03/05/13	
Cadmium	**60.8**	mg/kg wet	0.100	60.5		100 *(75-125)*		03/01/13 :03/05/13	
Chromium	**84.3**	mg/kg wet	0.500	82.2		103 *(75-125)*		03/01/13 :03/05/13	
Lead	**92.6**	mg/kg wet	0.100	91.8		101 *(75-125)*		03/01/13 :03/05/13	
Mercury	**3.510**	mg/kg wet	0.0100	3.69		95 *(75-125)*		03/01/13 :03/05/13	
Selenium	**93.6**	mg/kg wet	1.00	91.6		102 *(75-125)*		03/01/13 :03/05/13	
Silver	**36.3**	mg/kg wet	0.100	34.4		106 *(75-125)*		03/01/13 :03/05/13	
Duplicate (B13C008-DUP1)			**Source: W13B210-07**						
Arsenic	**6.04**	mg/kg dry	0.500		5.91		2 *(20)*	03/01/13 :03/05/13	
Barium	**157**	mg/kg dry	0.100		154		2 *(20)*	03/01/13 :03/05/13	
Cadmium	ND	mg/kg dry	0.100		ND		*(20)*	03/01/13 :03/05/13	
Chromium	**24.9**	mg/kg dry	0.500		23.9		4 *(20)*	03/01/13 :03/05/13	
Lead	**10.5**	mg/kg dry	0.100		10.2		2 *(20)*	03/01/13 :03/05/13	
Mercury	**0.01681**	mg/kg dry	0.0100		0.01835		9 *(20)*	03/01/13 :03/05/13	
Selenium	ND	mg/kg dry	1.00		ND		*(20)*	03/01/13 :03/05/13	
Silver	ND	mg/kg dry	0.100		ND		*(20)*	03/01/13 :03/05/13	
Matrix Spike (B13C008-MS1)			**Source: W13B210-07**						
Arsenic	**19.3**	mg/kg dry	0.500	14.3	5.91	94 *(75-125)*		03/01/13 :03/05/13	
Barium	**363**	mg/kg dry	0.100	214	154	98 *(75-125)*		03/01/13 :03/05/13	
Cadmium	**14.1**	mg/kg dry	0.100	14.3	ND	99 *(75-125)*		03/01/13 :03/05/13	

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C008									
Matrix Spike (B13C008-MS1)			**Source: W13B210-07**						
Chromium	**64.5**	mg/kg dry	0.500	42.8	23.9	95 *(75-125)*		03/01/13 :03/05/13	
Lead	**79.4**	mg/kg dry	0.100	71.3	10.2	97 *(75-125)*		03/01/13 :03/05/13	
Mercury	**0.7246**	mg/kg dry	0.0100	0.713	0.01835	99 *(75-125)*		03/01/13 :03/05/13	
Selenium	**68.4**	mg/kg dry	1.00	71.3	ND	96 *(75-125)*		03/01/13 :03/05/13	
Silver	**13.9**	mg/kg dry	0.100	14.3	ND	98 *(75-125)*		03/01/13 :03/05/13	

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Blank (B13C037-BLK1)									
Acenaphthene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Anthracene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Chrysene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluorene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Naphthalene	ND	ug/kg wet	40					03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*70*		ug/kg wet	*100*		70		03/04/13 :03/04/13	
Fluoranthene-d10	*92*		ug/kg wet	*100*		92		03/04/13 :03/04/13	
Blank (B13C037-BLK2)									
Acenaphthene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Anthracene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Chrysene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluorene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Naphthalene	ND	ug/kg wet	40					03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*64*		ug/kg wet	*100*		64		03/04/13 :03/04/13	
Fluoranthene-d10	*89*		ug/kg wet	*100*		89		03/04/13 :03/04/13	
LCS (B13C037-BS1)									

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
LCS (B13C037-BS1)									
Acenaphthene	**35.6**	ug/kg wet	20	40.0		89 *(50-150)*		03/04/13 :03/04/13	
Acenaphthylene	**37.6**	ug/kg wet	20	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Anthracene	**37.2**	ug/kg wet	20	40.0		93 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)anthracene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)pyrene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Benzo(b)fluoranthene	**36.0**	ug/kg wet	10	40.0		90 *(50-150)*		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	**38.8**	ug/kg wet	10	40.0		97 *(50-150)*		03/04/13 :03/04/13	
Benzo(k)fluoranthene	**35.6**	ug/kg wet	10	40.0		89 *(50-150)*		03/04/13 :03/04/13	
Chrysene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	**36.0**	ug/kg wet	10	40.0		90 *(50-150)*		03/04/13 :03/04/13	
Fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Fluorene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Naphthalene	**32.0**	ug/kg wet	20	40.0		80 *(50-150)*		03/04/13 :03/04/13	
Phenanthrene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Pyrene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*66*		ug/kg wet	*100*		66 *(31.9-133)*		03/04/13 :03/04/13	
Fluoranthene-d10	*89*		ug/kg wet	*100*		89 *(64.7-154)*		03/04/13 :03/04/13	
LCS (B13C037-BS2)									
Acenaphthene	**37.6**	ug/kg wet	20	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Acenaphthylene	**38.4**	ug/kg wet	20	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Anthracene	**38.4**	ug/kg wet	20	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)anthracene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)pyrene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Benzo(b)fluoranthene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	**39.6**	ug/kg wet	10	40.0		99 *(50-150)*		03/04/13 :03/04/13	
Benzo(k)fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Chrysene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/04/13 :03/04/13	
Fluoranthene	**38.0**	ug/kg wet	10	40.0		95 *(50-150)*		03/04/13 :03/04/13	
Fluorene	**38.0**	ug/kg wet	20	40.0		95 *(50-150)*		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Naphthalene	**33.6**	ug/kg wet	20	40.0		84 *(50-150)*		03/04/13 :03/04/13	
Phenanthrene	**38.4**	ug/kg wet	20	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Pyrene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*65*		ug/kg wet	*100*		65 *(31.9-133)*		03/04/13 :03/04/13	
Fluoranthene-d10	*92*		ug/kg wet	*100*		92 *(64.7-154)*		03/04/13 :03/04/13	
Duplicate (B13C037-DUP1)			**Source: W13B210-01**						

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City of Portland
Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Duplicate (B13C037-DUP1)			**Source: W13B210-01**						
Acenaphthene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Acenaphthylene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Anthracene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Chrysene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Fluorene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Naphthalene	ND	ug/kg dry	40		ND		(50)	03/04/13 :03/05/13	
Phenanthrene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*73*		ug/kg dry	*107*		68		03/04/13 :03/05/13	
Fluoranthene-d10	*89*		ug/kg dry	*107*		84		03/04/13 :03/05/13	
Duplicate (B13C037-DUP2)			**Source: W13C011-03**						
Acenaphthene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Anthracene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Chrysene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluorene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Naphthalene	ND	ug/kg dry	40		ND		(50)	03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*62*		ug/kg dry	*115*		54		03/04/13 :03/04/13	
Fluoranthene-d10	*100*		ug/kg dry	*115*		90		03/04/13 :03/04/13	
Duplicate (B13C037-DUP3)			**Source: W13C011-05**						

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Duplicate (B13C037-DUP3)			**Source: W13C011-05**						
Acenaphthene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Acenaphthylene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Anthracene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Benzo(a)anthracene	**35.8**	ug/kg dry	10		37.3		4 (50)	03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Chrysene	**144**	ug/kg dry	10		142		1 (50)	03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg dry	250		ND		(50)	03/04/13 :03/04/13	D4, M15
Fluorene	**2560**	ug/kg dry	200		2850		11 (50)	03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Naphthalene	ND	ug/kg dry	1000		ND		(50)	03/04/13 :03/04/13	D4, M15
Phenanthrene	**5700**	ug/kg dry	200		6330		11 (50)	03/04/13 :03/05/13	
Pyrene	**743**	ug/kg dry	10		778		5 (50)	03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*110*		ug/kg dry	*119*		96		03/04/13 :03/04/13	
Fluoranthene-d10	*120*		ug/kg dry	*119*		102		03/04/13 :03/04/13	
Matrix Spike (B13C037-MS1)			**Source: W13B210-01**						
Acenaphthene	**105**	ug/kg dry	20	115	ND	91 (50-150)		03/04/13 :03/05/13	
Acenaphthylene	**108**	ug/kg dry	20	115	ND	94 (50-150)		03/04/13 :03/05/13	
Anthracene	**106**	ug/kg dry	20	115	ND	92 (50-150)		03/04/13 :03/05/13	
Benzo(a)anthracene	**109**	ug/kg dry	10	115	ND	94 (50-150)		03/04/13 :03/05/13	
Benzo(a)pyrene	**109**	ug/kg dry	10	115	ND	95 (50-150)		03/04/13 :03/05/13	
Benzo(b)fluoranthene	**103**	ug/kg dry	10	115	ND	90 (50-150)		03/04/13 :03/05/13	
Benzo(g,h,i)perylene	**113**	ug/kg dry	10	115	ND	98 (50-150)		03/04/13 :03/05/13	
Benzo(k)fluoranthene	**102**	ug/kg dry	10	115	ND	88 (50-150)		03/04/13 :03/05/13	
Chrysene	**106**	ug/kg dry	10	115	ND	92 (50-150)		03/04/13 :03/05/13	
Dibenzo(a,h)anthracene	**107**	ug/kg dry	10	115	ND	93 (50-150)		03/04/13 :03/05/13	
Fluoranthene	**108**	ug/kg dry	10	115	ND	94 (50-150)		03/04/13 :03/05/13	
Fluorene	**106**	ug/kg dry	20	115	ND	92 (50-150)		03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	**111**	ug/kg dry	10	115	ND	96 (50-150)		03/04/13 :03/05/13	
Naphthalene	**101**	ug/kg dry	40	115	ND	88 (50-150)		03/04/13 :03/05/13	
Phenanthrene	**104**	ug/kg dry	20	115	ND	90 (50-150)		03/04/13 :03/05/13	
Pyrene	**108**	ug/kg dry	10	115	ND	94 (50-150)		03/04/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*74*		ug/kg dry	*115*		64 (31.9-133)		03/04/13 :03/05/13	
Fluoranthene-d10	*91*		ug/kg dry	*115*		79 (64.7-154)		03/04/13 :03/05/13	
Matrix Spike (B13C037-MS2)			**Source: W13C011-03**						

Reported: 03/25/13 10:26

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Matrix Spike (B13C037-MS2)			**Source: W13C011-03**						
Acenaphthene	**110**	ug/kg dry	20	121	ND	91 *(50-150)*		03/04/13 :03/04/13	
Acenaphthylene	**117**	ug/kg dry	20	121	ND	97 *(50-150)*		03/04/13 :03/04/13	
Anthracene	**115**	ug/kg dry	20	121	ND	95 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)anthracene	**121**	ug/kg dry	10	121	ND	100 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)pyrene	**125**	ug/kg dry	10	121	ND	104 *(50-150)*		03/04/13 :03/04/13	
Benzo(b)fluoranthene	**118**	ug/kg dry	10	121	ND	98 *(50-150)*		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	**132**	ug/kg dry	10	121	ND	109 *(50-150)*		03/04/13 :03/04/13	
Benzo(k)fluoranthene	**114**	ug/kg dry	10	121	ND	94 *(50-150)*		03/04/13 :03/04/13	
Chrysene	**121**	ug/kg dry	10	121	ND	100 *(50-150)*		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	**118**	ug/kg dry	10	121	ND	98 *(50-150)*		03/04/13 :03/04/13	
Fluoranthene	**123**	ug/kg dry	10	121	ND	102 *(50-150)*		03/04/13 :03/04/13	
Fluorene	**112**	ug/kg dry	20	121	ND	93 *(50-150)*		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	**127**	ug/kg dry	10	121	ND	105 *(50-150)*		03/04/13 :03/04/13	
Naphthalene	**108**	ug/kg dry	40	121	ND	89 *(50-150)*		03/04/13 :03/04/13	
Phenanthrene	**114**	ug/kg dry	20	121	ND	94 *(50-150)*		03/04/13 :03/04/13	
Pyrene	**126**	ug/kg dry	10	121	ND	105 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*69*		ug/kg dry	*121*		58 *(31.9-133)*		03/04/13 :03/04/13	
Fluoranthene-d10	*110*		ug/kg dry	*121*		90 *(64.7-154)*		03/04/13 :03/04/13	
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C071									
Blank (B13C071-BLK1)									
Acenaphthene	ND	ug/kg wet	20					03/05/13 :03/05/13	
Acenaphthylene	ND	ug/kg wet	20					03/05/13 :03/05/13	
Anthracene	ND	ug/kg wet	20					03/05/13 :03/05/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Chrysene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Fluoranthene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Fluorene	ND	ug/kg wet	20					03/05/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Naphthalene	ND	ug/kg wet	40					03/05/13 :03/05/13	
Phenanthrene	ND	ug/kg wet	20					03/05/13 :03/05/13	
Pyrene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*77*		ug/kg wet	*100*		77		03/05/13 :03/05/13	
Fluoranthene-d10	*88*		ug/kg wet	*100*		88		03/05/13 :03/05/13	

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Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C071									
LCS (B13C071-BS1)									
Acenaphthene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/05/13 :03/05/13	
Acenaphthylene	**36.8**	ug/kg wet	20	40.0		92 *(50-150)*		03/05/13 :03/05/13	
Anthracene	**36.0**	ug/kg wet	20	40.0		90 *(50-150)*		03/05/13 :03/05/13	
Benzo(a)anthracene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/05/13 :03/05/13	
Benzo(a)pyrene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/05/13 :03/05/13	
Benzo(b)fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/05/13 :03/05/13	
Benzo(g,h,i)perylene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/05/13 :03/05/13	
Benzo(k)fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/05/13 :03/05/13	
Chrysene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/05/13 :03/05/13	
Dibenzo(a,h)anthracene	**34.4**	ug/kg wet	10	40.0		86 *(50-150)*		03/05/13 :03/05/13	
Fluoranthene	**37.2**	ug/kg wet	10	40.0		93 *(50-150)*		03/05/13 :03/05/13	
Fluorene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/05/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	**36.0**	ug/kg wet	10	40.0		90 *(50-150)*		03/05/13 :03/05/13	
Naphthalene	**30.8**	ug/kg wet	20	40.0		77 *(50-150)*		03/05/13 :03/05/13	
Phenanthrene	**36.8**	ug/kg wet	20	40.0		92 *(50-150)*		03/05/13 :03/05/13	
Pyrene	**37.2**	ug/kg wet	10	40.0		93 *(50-150)*		03/05/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*77*		ug/kg wet	*100*		77 *(31.9-133)*		03/05/13 :03/05/13	
Fluoranthene-d10	*87*		ug/kg wet	*100*		87 *(64.7-154)*		03/05/13 :03/05/13	
Duplicate (B13C071-DUP1)			**Source: W13C018-02**						
Acenaphthene	ND	ug/kg dry	20		ND		*(50)*	03/05/13 :03/05/13	
Acenaphthylene	ND	ug/kg dry	20		ND		*(50)*	03/05/13 :03/05/13	
Anthracene	ND	ug/kg dry	20		ND		*(50)*	03/05/13 :03/05/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		*(50)*	03/05/13 :03/05/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		*(50)*	03/05/13 :03/05/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		*(50)*	03/05/13 :03/05/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		*(50)*	03/05/13 :03/05/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		*(50)*	03/05/13 :03/05/13	
Chrysene	ND	ug/kg dry	10		ND		*(50)*	03/05/13 :03/05/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		*(50)*	03/05/13 :03/05/13	
Fluoranthene	ND	ug/kg dry	10		ND		*(50)*	03/05/13 :03/05/13	
Fluorene	ND	ug/kg dry	20		ND		*(50)*	03/05/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		*(50)*	03/05/13 :03/05/13	
Naphthalene	ND	ug/kg dry	40		ND		*(50)*	03/05/13 :03/05/13	
Phenanthrene	ND	ug/kg dry	20		ND		*(50)*	03/05/13 :03/05/13	
Pyrene	ND	ug/kg dry	10		ND		*(50)*	03/05/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*100*		ug/kg dry	*132*		77		03/05/13 :03/05/13	
Fluoranthene-d10	*110*		ug/kg dry	*132*		83		03/05/13 :03/05/13	
Matrix Spike (B13C071-MS1)			**Source: W13C018-02**						

Reported: 03/25/13 10:26

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C071									
Matrix Spike (B13C071-MS1)			**Source: W13C018-02**						
Acenaphthene	**120**	ug/kg dry	20	132	ND	91 *(50-150)*		03/05/13 :03/05/13	
Acenaphthylene	**130**	ug/kg dry	20	132	ND	98 *(50-150)*		03/05/13 :03/05/13	
Anthracene	**138**	ug/kg dry	20	132	ND	104 *(50-150)*		03/05/13 :03/05/13	
Benzo(a)anthracene	**130**	ug/kg dry	10	132	ND	98 *(50-150)*		03/05/13 :03/05/13	
Benzo(a)pyrene	**131**	ug/kg dry	10	132	ND	99 *(50-150)*		03/05/13 :03/05/13	
Benzo(b)fluoranthene	**121**	ug/kg dry	10	132	ND	92 *(50-150)*		03/05/13 :03/05/13	
Benzo(g,h,i)perylene	**140**	ug/kg dry	10	132	ND	106 *(50-150)*		03/05/13 :03/05/13	
Benzo(k)fluoranthene	**121**	ug/kg dry	10	132	ND	92 *(50-150)*		03/05/13 :03/05/13	
Chrysene	**124**	ug/kg dry	10	132	ND	94 *(50-150)*		03/05/13 :03/05/13	
Dibenzo(a,h)anthracene	**135**	ug/kg dry	10	132	ND	102 *(50-150)*		03/05/13 :03/05/13	
Fluoranthene	**131**	ug/kg dry	10	132	ND	100 *(50-150)*		03/05/13 :03/05/13	
Fluorene	**125**	ug/kg dry	20	132	ND	95 *(50-150)*		03/05/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	**138**	ug/kg dry	10	132	ND	105 *(50-150)*		03/05/13 :03/05/13	
Naphthalene	**125**	ug/kg dry	40	132	ND	95 *(50-150)*		03/05/13 :03/05/13	
Phenanthrene	**129**	ug/kg dry	20	132	ND	98 *(50-150)*		03/05/13 :03/05/13	
Pyrene	**130**	ug/kg dry	10	132	ND	98 *(50-150)*		03/05/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*110*		ug/kg dry	*132*		81 *(31.9-133)*		03/05/13 :03/05/13	
Fluoranthene-d10	*130*		ug/kg dry	*132*		96 *(64.7-154)*		03/05/13 :03/05/13	

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs) - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
PCB Aroclors by GC-ECD - Batch B13C018									
Blank (B13C018-BLK1)									
Aroclor 1016/1242	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1221	ND	ug/kg wet	20.0					03/01/13 :03/06/13	
Aroclor 1232	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1248	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1254	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1260	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1262	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Aroclor 1268	ND	ug/kg wet	10.0					03/01/13 :03/06/13	
Surrogate									
Tetrachloro-m-xylene	*11.4*		ug/kg wet	*10.0*		114		03/01/13 :03/06/13	
Decachlorobiphenyl	*13.0*		ug/kg wet	*10.0*		130		03/01/13 :03/06/13	
LCS (B13C018-BS1)									
Aroclor 1016/1242	**119.7**	ug/kg wet	10.0	100		120 *(78.7-127)*		03/01/13 :03/06/13	
Aroclor 1260	**108.4**	ug/kg wet	10.0	100		108 *(80.9-139)*		03/01/13 :03/06/13	
Surrogate									
Tetrachloro-m-xylene	*11.4*		ug/kg wet	*10.0*		114 *(60.3-141)*		03/01/13 :03/06/13	
Decachlorobiphenyl	*12.1*		ug/kg wet	*10.0*		121 *(48.6-164)*		03/01/13 :03/06/13	
Matrix Spike (B13C018-MS1)			**Source: W13B192-01**						
Aroclor 1016/1242	**148.7**	ug/kg dry	10.0	123	ND	121 *(50.8-144)*		03/01/13 :03/06/13	
Aroclor 1260	**174.4**	ug/kg dry	10.0	123	43.62	107 *(33-158)*		03/01/13 :03/06/13	
Surrogate									
Tetrachloro-m-xylene	*13.8*		ug/kg dry	*12.3*		113 *(60.3-141)*		03/01/13 :03/06/13	
Decachlorobiphenyl	*15.1*		ug/kg dry	*12.3*		123 *(48.6-164)*		03/01/13 :03/06/13	
Matrix Spike Dup (B13C018-MSD1)			**Source: W13B192-01**						
Aroclor 1016/1242	**146.7**	ug/kg dry	10.0	129	ND	114 *(50.8-144)*	1 *(20)*	03/01/13 :03/06/13	
Aroclor 1260	**207.0**	ug/kg dry	10.0	129	43.62	126 *(33-158)*	17 *(20)*	03/01/13 :03/06/13	
Surrogate									
Tetrachloro-m-xylene	*14.0*		ug/kg dry	*12.9*		108 *(60.3-141)*		03/01/13 :03/06/13	
Decachlorobiphenyl	*15.0*		ug/kg dry	*12.9*		116 *(48.6-164)*		03/01/13 :03/06/13	

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Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B210**	Project Mgr:	John O'Donovan

Qualifiers

D4	Reporting limit is raised for this analyte due to non-target matrix interference.
M15	The result is an estimate due to chromatographic interference that affected quantitation.
SU6	Recovery for surrogate compound was high. No associated target analytes were detected and results are not affected.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

Date: 2/27/13

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
Sample Custodian: (503) 823-5696
General Lab: (503) 823-5681

City of Portland Chain-of-Custody

Bureau of Environmental Services

Lab Work Order #: W13B210
Collected By: L. Farr

Client Name: **Coordinated Site Analysis**
Project Number (if applicable):
Project Name: Kenton Brass Foundry
Contact Name: Len Farr

Requested Analyses

Follow-up Tests:
- ☐ Run TCLP metals if limit exceeded
- ☐ Run SPLP if limit exceeded (indicate which analyses in Remarks field)
- ☐ Run NWTPH-Dx and NWTPH-Gx if detects on NWTPH-HCID
- ☐ Run PAHs if detects on NWTPH-Dx
- ☐ Run VOCs if detects on NWTPH-Gx
- ☐ Run TOC if detects on NWTPH-HCID

Turn-Around-Time Request:
- ☐ Standard (10 business days)
- ☐ Rush (5 business days)
- ☐ Other:

Lab Number	Location ID	Sample Date	Sample Time	Grab or Comp	Sample Matrix	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	PCB Aroclors (low-level)	PAHs	Priority Pollutant 13 Metals	RCRA 8 Metals	Total Metals (As, Cd, Cr, Cu, Pb, Hg, Zn)	Total Metals (Cd, Cr, Pb)	VOCs	TOC						HOLD	# of Containers	Remarks
01	SW-W-1	2/26	14:30	C	S				X	X		X											4	
02	SW-S-1	2/26	15:00	C	S				X	X		X											4	
03	2-26-2013-CS2	2/26	15:45	C	S				X	X		X											5	
04	2-27-2013-CB1	2/27	13:30	C	S				X	X		X											4	
05	2-27-2013-CB2	2/27	14:00	C	S				X	X		X											3	
06	SW-W-2	2/27	14:25	C	S				X	X		X											3	
07	2-27-2013-CB3	2/27	14:45	C	S				X	X		X											3	

Relinquished By:	Received By:	Relinquished By:	Received By:
Signature:	Signature:	Signature:	Signature:
Date: 2/27/13	Date: 2/27/13	Date:	Date:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Time: 1640	Time: 1640	Time:	Time:

CSA Element COC

Page _____ of _____

City of Portland
Water Pollution Control Laboratory
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LABORATORY ANALYSIS REPORT

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B215**	Project Mgr:	John O'Donovan
Received:	2/28/13 15:35	WQDB #:	Janus825
Submitted By:	CSA/Consultant		

Sample	Laboratory ID	Matrix	Type	Sample Collection Date Start	Sample Collection Date End	Qualifier
SW-S-2	W13B215-01	Soil	Composite	02/27/13 15:10	02/27/13 15:10	
SW-E-1	W13B215-02	Soil	Composite	02/27/13 15:00	02/27/13 15:00	
2-28-2013-CS1	W13B215-03	Soil	Composite	02/28/13 11:00	02/28/13 11:00	
SW-E-2	W13B215-04	Soil	Composite	02/28/13 11:15	02/28/13 11:15	

General Chemistry

Total Solids

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
SW-S-2 : W13B215-01									
Total solids	**77.9**	% W/W	0.01		B13C016	03/01/13	03/02/13	SM 2540G	
SW-E-1 : W13B215-02									
Total solids	**75.1**	% W/W	0.01		B13C016	03/01/13	03/02/13	SM 2540G	
2-28-2013-CS1 : W13B215-03									
Total solids	**72.0**	% W/W	0.01		B13C016	03/01/13	03/02/13	SM 2540G	
SW-E-2 : W13B215-04									
Total solids	**73.3**	% W/W	0.01		B13C016	03/01/13	03/02/13	SM 2540G	

Total Metals

Total Metals by ICPMS

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
SW-S-2 : W13B215-01									
Arsenic	**3.76**	mg/kg dry	0.500	20	B13C008	03/01/13	03/05/13	EPA 6020	
Barium	**135**	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Cadmium	**0.107**	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Chromium	**22.2**	mg/kg dry	0.500	20	B13C008	03/01/13	03/05/13	EPA 6020	
Lead	**13.9**	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Mercury	**0.0167**	mg/kg dry	0.0100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C008	03/01/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
SW-E-1 : W13B215-02									
Arsenic	**5.45**	mg/kg dry	0.500	20	B13C008	03/01/13	03/05/13	EPA 6020	
Barium	**172**	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Cadmium	**0.105**	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Chromium	**23.9**	mg/kg dry	0.500	20	B13C008	03/01/13	03/05/13	EPA 6020	
Lead	**10.1**	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	

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Jennifer Shackelford

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B215**	Project Mgr:	John O'Donovan

Total Metals

Total Metals by ICPMS

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
SW-E-1 : W13B215-02									
Mercury	**0.0314**	mg/kg dry	0.0100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C008	03/01/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
2-28-2013-CS1 : W13B215-03									
Arsenic	**5.86**	mg/kg dry	0.500	20	B13C008	03/01/13	03/05/13	EPA 6020	
Barium	**158**	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Chromium	**24.3**	mg/kg dry	0.500	20	B13C008	03/01/13	03/05/13	EPA 6020	
Lead	**10.3**	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Mercury	**0.0187**	mg/kg dry	0.0100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C008	03/01/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
SW-E-2 : W13B215-04									
Arsenic	**6.34**	mg/kg dry	0.500	20	B13C008	03/01/13	03/05/13	EPA 6020	
Barium	**164**	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Cadmium	**0.119**	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Chromium	**24.5**	mg/kg dry	0.500	20	B13C008	03/01/13	03/05/13	EPA 6020	
Lead	**14.2**	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Mercury	**0.0243**	mg/kg dry	0.0100	20	B13C008	03/01/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C008	03/01/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C008	03/01/13	03/05/13	EPA 6020	

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B215**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

SW-S-2 : W13B215-01

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*68*	*120*	*57%*	*31.9-133*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*
Fluoranthene-d10	*100*	*120*	*86%*	*64.7-154*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*

SW-E-1 : W13B215-02

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*59*	*117*	*51%*	*31.9-133*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*
Fluoranthene-d10	*95*	*117*	*81%*	*64.7-154*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*

2-28-2013-CS1 : W13B215-03

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City of Portland
Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B215**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
2-28-2013-CS1 : W13B215-03									
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*63*		*131*	*48%*	*31.9-133*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*
Fluoranthene-d10	*110*		*131*	*82%*	*64.7-154*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*
SW-E-2 : W13B215-04									
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*62*		*125*	*49%*	*31.9-133*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*
Fluoranthene-d10	*100*		*125*	*80%*	*64.7-154*	*B13C037*	*03/04/13*	*03/05/13*	*EPA 8270-SIM*

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Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B215**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs)

PCB Aroclors by GC-ECD

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
SW-S-2 : W13B215-01									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1260	**118**	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*17.7*		*12.6*	*141%*	*60.3-141*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
Decachlorobiphenyl	*20.6*		*12.6*	*164%*	*48.6-164*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
SW-E-1 : W13B215-02									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1260	**20.2**	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*12.2*		*13.1*	*93%*	*60.3-141*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
Decachlorobiphenyl	*12.4*		*13.1*	*94%*	*48.6-164*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
2-28-2013-CS1 : W13B215-03									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1260	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*14.7*		*13.9*	*106%*	*60.3-141*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
Decachlorobiphenyl	*16.4*		*13.9*	*118%*	*48.6-164*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
SW-E-2 : W13B215-04									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B215**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs)

PCB Aroclors by GC-ECD

SW-E-2 : W13B215-04

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1260	**67.3**	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*13.2*	*13.6*	*97%*	*60.3-141*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
Decachlorobiphenyl	*14.1*	*13.6*	*103%*	*48.6-164*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B215**	Project Mgr:	John O'Donovan

Quality Control Report

General Chemistry - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Solids - Batch B13C016									
Duplicate (B13C016-DUP1)			**Source: W13B209-05**						
Total solids	**75.8**	% W/W	0.01		75.2		0.8 *(5)*	03/01/13 :03/02/13	

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C008									
Blank (B13C008-BLK1)									
Arsenic	ND	mg/kg wet	0.500					03/01/13 :03/05/13	
Barium	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Cadmium	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Chromium	ND	mg/kg wet	0.500					03/01/13 :03/05/13	
Lead	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Mercury	ND	mg/kg wet	0.0100					03/01/13 :03/05/13	
Selenium	ND	mg/kg wet	1.00					03/01/13 :03/05/13	
Silver	ND	mg/kg wet	0.100					03/01/13 :03/05/13	
Standard Reference Material (B13C008-SRM1)									
Arsenic	**99.5**	mg/kg wet	0.500	94.5		105 *(75-125)*		03/01/13 :03/05/13	
Barium	**179**	mg/kg wet	0.100	188		95 *(75-125)*		03/01/13 :03/05/13	
Cadmium	**60.8**	mg/kg wet	0.100	60.5		100 *(75-125)*		03/01/13 :03/05/13	
Chromium	**84.3**	mg/kg wet	0.500	82.2		103 *(75-125)*		03/01/13 :03/05/13	
Lead	**92.6**	mg/kg wet	0.100	91.8		101 *(75-125)*		03/01/13 :03/05/13	
Mercury	**3.510**	mg/kg wet	0.0100	3.69		95 *(75-125)*		03/01/13 :03/05/13	
Selenium	**93.6**	mg/kg wet	1.00	91.6		102 *(75-125)*		03/01/13 :03/05/13	
Silver	**36.3**	mg/kg wet	0.100	34.4		106 *(75-125)*		03/01/13 :03/05/13	
Duplicate (B13C008-DUP1)			**Source: W13B210-07**						
Arsenic	**6.04**	mg/kg dry	0.500		5.91		2 *(20)*	03/01/13 :03/05/13	
Barium	**157**	mg/kg dry	0.100		154		2 *(20)*	03/01/13 :03/05/13	
Cadmium	ND	mg/kg dry	0.100		ND		*(20)*	03/01/13 :03/05/13	
Chromium	**24.9**	mg/kg dry	0.500		23.9		4 *(20)*	03/01/13 :03/05/13	
Lead	**10.5**	mg/kg dry	0.100		10.2		2 *(20)*	03/01/13 :03/05/13	
Mercury	**0.01681**	mg/kg dry	0.0100		0.01835		9 *(20)*	03/01/13 :03/05/13	
Selenium	ND	mg/kg dry	1.00		ND		*(20)*	03/01/13 :03/05/13	
Silver	ND	mg/kg dry	0.100		ND		*(20)*	03/01/13 :03/05/13	
Matrix Spike (B13C008-MS1)			**Source: W13B210-07**						
Arsenic	**19.3**	mg/kg dry	0.500	14.3	5.91	94 *(75-125)*		03/01/13 :03/05/13	
Barium	**363**	mg/kg dry	0.100	214	154	98 *(75-125)*		03/01/13 :03/05/13	

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City of Portland
Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B215**	Project Mgr:	John O'Donovan

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C008									
Matrix Spike (B13C008-MS1)			**Source: W13B210-07**						
Cadmium	**14.1**	mg/kg dry	0.100	14.3	ND	99 *(75-125)*		03/01/13 :03/05/13	
Chromium	**64.5**	mg/kg dry	0.500	42.8	23.9	95 *(75-125)*		03/01/13 :03/05/13	
Lead	**79.4**	mg/kg dry	0.100	71.3	10.2	97 *(75-125)*		03/01/13 :03/05/13	
Mercury	**0.7246**	mg/kg dry	0.0100	0.713	0.01835	99 *(75-125)*		03/01/13 :03/05/13	
Selenium	**68.4**	mg/kg dry	1.00	71.3	ND	96 *(75-125)*		03/01/13 :03/05/13	
Silver	**13.9**	mg/kg dry	0.100	14.3	ND	98 *(75-125)*		03/01/13 :03/05/13	

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B215**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Blank (B13C037-BLK1)									
Acenaphthene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Anthracene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Chrysene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluorene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Naphthalene	ND	ug/kg wet	40					03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*70*		ug/kg wet	*100*		70		03/04/13 :03/04/13	
Fluoranthene-d10	*92*		ug/kg wet	*100*		92		03/04/13 :03/04/13	
Blank (B13C037-BLK2)									
Acenaphthene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Anthracene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Chrysene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluorene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Naphthalene	ND	ug/kg wet	40					03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*64*		ug/kg wet	*100*		64		03/04/13 :03/04/13	
Fluoranthene-d10	*89*		ug/kg wet	*100*		89		03/04/13 :03/04/13	
LCS (B13C037-BS1)									

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B215**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
LCS (B13C037-BS1)									
Acenaphthene	**35.6**	ug/kg wet	20	40.0		89 *(50-150)*		03/04/13 :03/04/13	
Acenaphthylene	**37.6**	ug/kg wet	20	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Anthracene	**37.2**	ug/kg wet	20	40.0		93 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)anthracene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)pyrene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Benzo(b)fluoranthene	**36.0**	ug/kg wet	10	40.0		90 *(50-150)*		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	**38.8**	ug/kg wet	10	40.0		97 *(50-150)*		03/04/13 :03/04/13	
Benzo(k)fluoranthene	**35.6**	ug/kg wet	10	40.0		89 *(50-150)*		03/04/13 :03/04/13	
Chrysene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	**36.0**	ug/kg wet	10	40.0		90 *(50-150)*		03/04/13 :03/04/13	
Fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Fluorene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Naphthalene	**32.0**	ug/kg wet	20	40.0		80 *(50-150)*		03/04/13 :03/04/13	
Phenanthrene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Pyrene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*66*		ug/kg wet	*100*		66 *(31.9-133)*		03/04/13 :03/04/13	
Fluoranthene-d10	*89*		ug/kg wet	*100*		89 *(64.7-154)*		03/04/13 :03/04/13	
LCS (B13C037-BS2)									
Acenaphthene	**37.6**	ug/kg wet	20	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Acenaphthylene	**38.4**	ug/kg wet	20	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Anthracene	**38.4**	ug/kg wet	20	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)anthracene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)pyrene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Benzo(b)fluoranthene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	**39.6**	ug/kg wet	10	40.0		99 *(50-150)*		03/04/13 :03/04/13	
Benzo(k)fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Chrysene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/04/13 :03/04/13	
Fluoranthene	**38.0**	ug/kg wet	10	40.0		95 *(50-150)*		03/04/13 :03/04/13	
Fluorene	**38.0**	ug/kg wet	20	40.0		95 *(50-150)*		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Naphthalene	**33.6**	ug/kg wet	20	40.0		84 *(50-150)*		03/04/13 :03/04/13	
Phenanthrene	**38.4**	ug/kg wet	20	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Pyrene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*65*		ug/kg wet	*100*		65 *(31.9-133)*		03/04/13 :03/04/13	
Fluoranthene-d10	*92*		ug/kg wet	*100*		92 *(64.7-154)*		03/04/13 :03/04/13	
Duplicate (B13C037-DUP1)			**Source: W13B210-01**						

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B215**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Duplicate (B13C037-DUP1)			**Source: W13B210-01**						
Acenaphthene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Acenaphthylene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Anthracene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Chrysene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Fluorene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Naphthalene	ND	ug/kg dry	40		ND		(50)	03/04/13 :03/05/13	
Phenanthrene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*73*		ug/kg dry	*107*		68		03/04/13 :03/05/13	
Fluoranthene-d10	*89*		ug/kg dry	*107*		84		03/04/13 :03/05/13	
Duplicate (B13C037-DUP2)			**Source: W13C011-03**						
Acenaphthene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Anthracene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Chrysene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluorene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Naphthalene	ND	ug/kg dry	40		ND		(50)	03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*62*		ug/kg dry	*115*		54		03/04/13 :03/04/13	
Fluoranthene-d10	*100*		ug/kg dry	*115*		90		03/04/13 :03/04/13	
Duplicate (B13C037-DUP3)			**Source: W13C011-05**						

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B215**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Duplicate (B13C037-DUP3)			**Source: W13C011-05**						
Acenaphthene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Acenaphthylene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Anthracene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Benzo(a)anthracene	**35.8**	ug/kg dry	10		37.3		4 (50)	03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Chrysene	**144**	ug/kg dry	10		142		1 (50)	03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg dry	250		ND		(50)	03/04/13 :03/04/13	D4, M15
Fluorene	**2560**	ug/kg dry	200		2850		11 (50)	03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Naphthalene	ND	ug/kg dry	1000		ND		(50)	03/04/13 :03/04/13	D4, M15
Phenanthrene	**5700**	ug/kg dry	200		6330		11 (50)	03/04/13 :03/05/13	
Pyrene	**743**	ug/kg dry	10		778		5 (50)	03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*110*		ug/kg dry	*119*		96		03/04/13 :03/04/13	
Fluoranthene-d10	*120*		ug/kg dry	*119*		102		03/04/13 :03/04/13	
Matrix Spike (B13C037-MS1)			**Source: W13B210-01**						
Acenaphthene	**105**	ug/kg dry	20	115	ND	91 (50-150)		03/04/13 :03/05/13	
Acenaphthylene	**108**	ug/kg dry	20	115	ND	94 (50-150)		03/04/13 :03/05/13	
Anthracene	**106**	ug/kg dry	20	115	ND	92 (50-150)		03/04/13 :03/05/13	
Benzo(a)anthracene	**109**	ug/kg dry	10	115	ND	94 (50-150)		03/04/13 :03/05/13	
Benzo(a)pyrene	**109**	ug/kg dry	10	115	ND	95 (50-150)		03/04/13 :03/05/13	
Benzo(b)fluoranthene	**103**	ug/kg dry	10	115	ND	90 (50-150)		03/04/13 :03/05/13	
Benzo(g,h,i)perylene	**113**	ug/kg dry	10	115	ND	98 (50-150)		03/04/13 :03/05/13	
Benzo(k)fluoranthene	**102**	ug/kg dry	10	115	ND	88 (50-150)		03/04/13 :03/05/13	
Chrysene	**106**	ug/kg dry	10	115	ND	92 (50-150)		03/04/13 :03/05/13	
Dibenzo(a,h)anthracene	**107**	ug/kg dry	10	115	ND	93 (50-150)		03/04/13 :03/05/13	
Fluoranthene	**108**	ug/kg dry	10	115	ND	94 (50-150)		03/04/13 :03/05/13	
Fluorene	**106**	ug/kg dry	20	115	ND	92 (50-150)		03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	**111**	ug/kg dry	10	115	ND	96 (50-150)		03/04/13 :03/05/13	
Naphthalene	**101**	ug/kg dry	40	115	ND	88 (50-150)		03/04/13 :03/05/13	
Phenanthrene	**104**	ug/kg dry	20	115	ND	90 (50-150)		03/04/13 :03/05/13	
Pyrene	**108**	ug/kg dry	10	115	ND	94 (50-150)		03/04/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*74*		ug/kg dry	*115*		64 (31.9-133)		03/04/13 :03/05/13	
Fluoranthene-d10	*91*		ug/kg dry	*115*		79 (64.7-154)		03/04/13 :03/05/13	
Matrix Spike (B13C037-MS2)			**Source: W13C011-03**						

Reported: 03/22/13 06:30

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Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B215**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Matrix Spike (B13C037-MS2)			**Source: W13C011-03**						
Acenaphthene	**110**	ug/kg dry	20	121	ND	91 *(50-150)*		03/04/13 :03/04/13	
Acenaphthylene	**117**	ug/kg dry	20	121	ND	97 *(50-150)*		03/04/13 :03/04/13	
Anthracene	**115**	ug/kg dry	20	121	ND	95 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)anthracene	**121**	ug/kg dry	10	121	ND	100 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)pyrene	**125**	ug/kg dry	10	121	ND	104 *(50-150)*		03/04/13 :03/04/13	
Benzo(b)fluoranthene	**118**	ug/kg dry	10	121	ND	98 *(50-150)*		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	**132**	ug/kg dry	10	121	ND	109 *(50-150)*		03/04/13 :03/04/13	
Benzo(k)fluoranthene	**114**	ug/kg dry	10	121	ND	94 *(50-150)*		03/04/13 :03/04/13	
Chrysene	**121**	ug/kg dry	10	121	ND	100 *(50-150)*		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	**118**	ug/kg dry	10	121	ND	98 *(50-150)*		03/04/13 :03/04/13	
Fluoranthene	**123**	ug/kg dry	10	121	ND	102 *(50-150)*		03/04/13 :03/04/13	
Fluorene	**112**	ug/kg dry	20	121	ND	93 *(50-150)*		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	**127**	ug/kg dry	10	121	ND	105 *(50-150)*		03/04/13 :03/04/13	
Naphthalene	**108**	ug/kg dry	40	121	ND	89 *(50-150)*		03/04/13 :03/04/13	
Phenanthrene	**114**	ug/kg dry	20	121	ND	94 *(50-150)*		03/04/13 :03/04/13	
Pyrene	**126**	ug/kg dry	10	121	ND	105 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*69*		ug/kg dry	*121*		58 *(31.9-133)*		03/04/13 :03/04/13	
Fluoranthene-d10	*110*		ug/kg dry	*121*		90 *(64.7-154)*		03/04/13 :03/04/13	

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13B215**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs) - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
PCB Aroclors by GC-ECD - Batch B13C116									
Blank (B13C116-BLK1)									
Aroclor 1016/1242	ND	ug/kg wet	10.0					03/06/13 :03/13/13	
Aroclor 1221	ND	ug/kg wet	20.0					03/06/13 :03/13/13	
Aroclor 1232	ND	ug/kg wet	10.0					03/06/13 :03/13/13	
Aroclor 1248	ND	ug/kg wet	10.0					03/06/13 :03/13/13	
Aroclor 1254	ND	ug/kg wet	10.0					03/06/13 :03/13/13	
Aroclor 1260	ND	ug/kg wet	10.0					03/06/13 :03/13/13	
Aroclor 1262	ND	ug/kg wet	10.0					03/06/13 :03/13/13	
Aroclor 1268	ND	ug/kg wet	10.0					03/06/13 :03/13/13	
Surrogate									
Tetrachloro-m-xylene	*10.7*		ug/kg wet	*10.0*		107		03/06/13 :03/13/13	
Decachlorobiphenyl	*13.2*		ug/kg wet	*10.0*		132		03/06/13 :03/13/13	
LCS (B13C116-BS1)									
Aroclor 1016/1242	**113.0**	ug/kg wet	10.0	100		113 *(78.7-127)*		03/06/13 :03/13/13	
Aroclor 1260	**101.9**	ug/kg wet	10.0	100		102 *(80.9-139)*		03/06/13 :03/13/13	
Surrogate									
Tetrachloro-m-xylene	*10.5*		ug/kg wet	*10.0*		105 *(60.3-141)*		03/06/13 :03/13/13	
Decachlorobiphenyl	*12.0*		ug/kg wet	*10.0*		120 *(48.6-164)*		03/06/13 :03/13/13	
Matrix Spike (B13C116-MS1)			**Source: W13B215-01**						
Aroclor 1016/1242	**133.7**	ug/kg dry	10.0	125	ND	107 *(50.8-144)*		03/06/13 :03/13/13	
Aroclor 1260	**202.6**	ug/kg dry	10.0	125	118.1	67 *(33-158)*		03/06/13 :03/13/13	
Surrogate									
Tetrachloro-m-xylene	*12.3*		ug/kg dry	*12.5*		98 *(60.3-141)*		03/06/13 :03/13/13	
Decachlorobiphenyl	*14.4*		ug/kg dry	*12.5*		115 *(48.6-164)*		03/06/13 :03/13/13	
Matrix Spike Dup (B13C116-MSD1)			**Source: W13B215-01**						
Aroclor 1016/1242	**137.7**	ug/kg dry	10.0	126	ND	109 *(50.8-144)*	3 *(20)*	03/06/13 :03/13/13	
Aroclor 1260	**214.3**	ug/kg dry	10.0	126	118.1	76 *(33-158)*	6 *(20)*	03/06/13 :03/13/13	
Surrogate									
Tetrachloro-m-xylene	*12.8*		ug/kg dry	*12.6*		102 *(60.3-141)*		03/06/13 :03/13/13	
Decachlorobiphenyl	*14.4*		ug/kg dry	*12.6*		114 *(48.6-164)*		03/06/13 :03/13/13	

Qualifiers

D4	Reporting limit is raised for this analyte due to non-target matrix interference.
M15	The result is an estimate due to chromatographic interference that affected quantitation.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference

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Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
Sample Custodian: (503) 823-5696
General Lab: (503) 823-5681

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 2/28/13
Work Order #: W13B215
Collected By: L. Farr

Client Name: Coordinated Site Analysis
Project Name: Kenton Brass Foundry

Requested Analyses

Lab Number	Sample ID	Sample Date	Sample Time	Grab or Comp	Sample Matrix	PCBs	PAHs	RCRA 8 metals	# of jars
01	SW-S-2	2/27	15:10	C	S	X	X	X	3
02	SW-E-1	2/27	15:00	C	S	X	X	X	2
03	2-28-2013-CS1	2/28	11:00	C	S	X	X	X	5
04	SW-E-2	2/28	11:15	C	S	X	X	X	5

Comments

Relinquished By:	Date:	Received By:	Date:	Relinquished By:	Date:	Received By:	Date:
Signature:	2/28/13	Signature:	2/28/13	Signature:		Signature:	
Printed Name: Leonard Farr	Time: 15:35	Printed Name: Rose Kneh	Time: 1535	Printed Name:	Time:	Printed Name:	Time:

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan
Received:	3/1/13 17:32	WQDB #:	Janus825
Submitted By:	CSA/Consultant		

Sample	Laboratory ID	Matrix	Type	Sample Collection Date Start	Sample Collection Date End	Qualifier
03012013-CS	W13C011-01	Soil	Composite	03/01/13 11:15	03/01/13 11:15	
SW-E-3	W13C011-02	Soil	Composite	03/01/13 11:30	03/01/13 11:30	
SW-W-3	W13C011-03	Soil	Composite	03/01/13 15:40	03/01/13 15:40	
03012013-CS-2	W13C011-04	Soil	Composite	03/01/13 16:00	03/01/13 16:00	
Tank Bottom	W13C011-05	Soil	Grab	03/01/13 15:33	03/01/13 15:33	

General Chemistry

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Total Solids									
03012013-CS : W13C011-01									
Total solids	**71.8**	% W/W	0.01		B13C027	03/02/13	03/03/13	SM 2540G	
SW-E-3 : W13C011-02									
Total solids	**74.0**	% W/W	0.01		B13C027	03/02/13	03/03/13	SM 2540G	
SW-W-3 : W13C011-03									
Total solids	**76.2**	% W/W	0.01		B13C027	03/02/13	03/03/13	SM 2540G	
03012013-CS-2 : W13C011-04									
Total solids	**73.9**	% W/W	0.01		B13C027	03/02/13	03/03/13	SM 2540G	
Tank Bottom : W13C011-05									
Total solids	**75.8**	% W/W	0.01		B13C027	03/02/13	03/03/13	SM 2540G	

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Total Metals

Total Metals by ICPMS

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
03012013-CS : W13C011-01									
Arsenic	**7.48**	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Barium	**180**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Chromium	**28.0**	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Lead	**12.6**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Mercury	**0.0250**	mg/kg dry	0.0100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C086	03/05/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
SW-E-3 : W13C011-02									
Arsenic	**8.61**	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Barium	**217**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Cadmium	**0.108**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Chromium	**33.4**	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Lead	**15.5**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Mercury	**0.0293**	mg/kg dry	0.0100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C086	03/05/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
SW-W-3 : W13C011-03									
Arsenic	**6.01**	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Barium	**189**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Cadmium	**0.172**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Chromium	**27.0**	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Lead	**13.3**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Mercury	**0.0213**	mg/kg dry	0.0100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C086	03/05/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
03012013-CS-2 : W13C011-04									
Arsenic	**6.41**	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Barium	**182**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Chromium	**27.3**	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Lead	**11.4**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Mercury	**0.0214**	mg/kg dry	0.0100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C086	03/05/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Analyte	Result	Units		MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Fuels										
Diesel/Oil Hydrocarbons by GC-FID										
Tank Bottom : W13C011-05										
Diesel	**7900**	mg/kg dry		250	10	B13C036	03/04/13	03/04/13	NWTPH-Dx	
Lube oil	**1300**	mg/kg dry		500	10	B13C036	03/04/13	03/04/13	NWTPH-Dx	F2
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***					
2-Fluorobiphenyl	*66.0*		*25.9*	*255%*	*50-150*	*B13C036*	*03/04/13*	*03/04/13*	*NWTPH-Dx*	*SU7*

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

03012013-CS : W13C011-01

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*73*	*129*	*57%*	*31.9-133*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*
Fluoranthene-d10	*110*	*129*	*84%*	*64.7-154*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*

SW-E-3 : W13C011-02

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*72*	*123*	*58%*	*31.9-133*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*
Fluoranthene-d10	*100*	*123*	*83%*	*64.7-154*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*

SW-W-3 : W13C011-03

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

SW-W-3 : W13C011-03

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*62*	*116*	*53%*	*31.9-133*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*
Fluoranthene-d10	*100*	*116*	*90%*	*64.7-154*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*

03012013-CS-2 : W13C011-04

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)pyrene	**14**	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(b)fluoranthene	**14**	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	**11**	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*54*	*127*	*43%*	*31.9-133*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*
Fluoranthene-d10	*120*	*127*	*91%*	*64.7-154*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*

Tank Bottom : W13C011-05

Reported: 03/22/13 06:30

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Jennifer Shackelford

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

Tank Bottom : W13C011-05

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	1500	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	D4, M15
Acenaphthylene	ND	ug/kg dry	1500	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	D4, M15
Anthracene	ND	ug/kg dry	1500	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	D4, M15
Benzo(a)anthracene	**37**	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Chrysene	**140**	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	250	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	D4, M15
Fluorene	**2800**	ug/kg dry	200	100	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	1000	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	D4, M15
Phenanthrene	**6300**	ug/kg dry	200	100	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Pyrene	**780**	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*130*	*130*	*104%*	*31.9-133*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*
Fluoranthene-d10	*120*	*130*	*94%*	*64.7-154*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*

Reported: 03/22/13 06:30

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Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs)

PCB Aroclors by GC-ECD

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
03012013-CS : W13C011-01									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1260	**31.0**	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*12.2*		*13.5*	*91%*	*60.3-141*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
Decachlorobiphenyl	*14.0*		*13.5*	*104%*	*48.6-164*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
SW-E-3 : W13C011-02									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1260	**33.6**	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*13.8*		*13.5*	*102%*	*60.3-141*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
Decachlorobiphenyl	*14.6*		*13.5*	*109%*	*48.6-164*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
SW-W-3 : W13C011-03									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1260	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*12.9*		*12.9*	*99%*	*60.3-141*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
Decachlorobiphenyl	*15.0*		*12.9*	*116%*	*48.6-164*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
03012013-CS-2 : W13C011-04									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	

Reported: 03/22/13 06:30

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Jennifer Shackelford

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs)

PCB Aroclors by GC-ECD

03012013-CS-2 : W13C011-04

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1260	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*12.6*	*13.4*	*94%*	*60.3-141*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
Decachlorobiphenyl	*12.3*	*13.4*	*92%*	*48.6-164*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*

Reported: 03/22/13 06:30

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Quality Control Report

General Chemistry - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Solids - Batch B13C027									
Duplicate (B13C027-DUP1)			**Source: W13C011-01**						
Total solids	**71.3**	% W/W	0.01		71.8		0.7 *(5)*	03/02/13 :03/03/13	

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C086									
Blank (B13C086-BLK1)									
Arsenic	ND	mg/kg wet	0.500					03/05/13 :03/05/13	
Barium	ND	mg/kg wet	0.100					03/05/13 :03/05/13	
Cadmium	ND	mg/kg wet	0.100					03/05/13 :03/05/13	
Chromium	ND	mg/kg wet	0.500					03/05/13 :03/05/13	
Lead	ND	mg/kg wet	0.100					03/05/13 :03/05/13	
Mercury	ND	mg/kg wet	0.0100					03/05/13 :03/05/13	
Selenium	ND	mg/kg wet	1.00					03/05/13 :03/05/13	
Silver	ND	mg/kg wet	0.100					03/05/13 :03/05/13	
Standard Reference Material (B13C086-SRM1)									
Arsenic	**94.3**	mg/kg wet	0.500	94.5		100 *(75-125)*		03/05/13 :03/05/13	
Barium	**206**	mg/kg wet	0.100	188		110 *(75-125)*		03/05/13 :03/05/13	
Cadmium	**61.1**	mg/kg wet	0.100	60.5		101 *(75-125)*		03/05/13 :03/05/13	
Chromium	**85.3**	mg/kg wet	0.500	82.2		104 *(75-125)*		03/05/13 :03/05/13	
Lead	**90.5**	mg/kg wet	0.100	91.8		99 *(75-125)*		03/05/13 :03/05/13	
Mercury	**3.446**	mg/kg wet	0.0100	3.69		93 *(75-125)*		03/05/13 :03/05/13	
Selenium	**87.7**	mg/kg wet	1.00	91.6		96 *(75-125)*		03/05/13 :03/05/13	
Silver	**34.8**	mg/kg wet	0.100	34.4		101 *(75-125)*		03/05/13 :03/05/13	
Duplicate (B13C086-DUP1)			**Source: W13C011-01**						
Arsenic	**7.64**	mg/kg dry	0.500		7.48		2 *(20)*	03/05/13 :03/05/13	
Barium	**211**	mg/kg dry	0.100		180		16 *(20)*	03/05/13 :03/05/13	
Cadmium	ND	mg/kg dry	0.100		ND		*(20)*	03/05/13 :03/05/13	
Chromium	**31.8**	mg/kg dry	0.500		28.0		13 *(20)*	03/05/13 :03/05/13	
Lead	**13.0**	mg/kg dry	0.100		12.6		4 *(20)*	03/05/13 :03/05/13	
Mercury	**0.02491**	mg/kg dry	0.0100		0.02495		0.2 *(20)*	03/05/13 :03/05/13	
Selenium	ND	mg/kg dry	1.00		ND		*(20)*	03/05/13 :03/05/13	
Silver	ND	mg/kg dry	0.100		ND		*(20)*	03/05/13 :03/05/13	
Matrix Spike (B13C086-MS1)			**Source: W13C011-01**						
Arsenic	**22.7**	mg/kg dry	0.500	16.2	7.48	94 *(75-125)*		03/05/13 :03/05/13	
Barium	**438**	mg/kg dry	0.100	243	180	106 *(75-125)*		03/05/13 :03/05/13	

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C086									
Matrix Spike (B13C086-MS1)			**Source: W13C011-01**						
Cadmium	**15.9**	mg/kg dry	0.100	16.2	ND	98 *(75-125)*		03/05/13 :03/05/13	
Chromium	**77.1**	mg/kg dry	0.500	48.6	28.0	101 *(75-125)*		03/05/13 :03/05/13	
Lead	**91.1**	mg/kg dry	0.100	80.9	12.6	97 *(75-125)*		03/05/13 :03/05/13	
Mercury	**0.8272**	mg/kg dry	0.0100	0.809	0.02495	99 *(75-125)*		03/05/13 :03/05/13	
Selenium	**77.1**	mg/kg dry	1.00	80.9	ND	95 *(75-125)*		03/05/13 :03/05/13	
Silver	**15.8**	mg/kg dry	0.100	16.2	ND	97 *(75-125)*		03/05/13 :03/05/13	

Fuels - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Diesel/Oil Hydrocarbons by GC-FID - Batch B13C036									
Blank (B13C036-BLK1)									
Diesel	ND	mg/kg wet	25					03/04/13 :03/04/13	
Lube oil	ND	mg/kg wet	50					03/04/13 :03/04/13	
Surrogate									
2-Fluorobiphenyl	*19.1*		mg/kg wet	*20.0*		95		03/04/13 :03/04/13	
LCS (B13C036-BS1)									
Diesel	**82.7**	mg/kg wet	25	100		83 *(50-150)*		03/04/13 :03/04/13	
Lube oil	**96.0**	mg/kg wet	50	100		96 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Fluorobiphenyl	*20.2*		mg/kg wet	*20.0*		101 *(50-150)*		03/04/13 :03/04/13	
Duplicate (B13C036-DUP1)			**Source: W13C011-05**						
Diesel	**7360**	mg/kg dry	250		7860		7 *(50)*	03/04/13 :03/04/13	
Lube oil	**1270**	mg/kg dry	500		1330		5 *(50)*	03/04/13 :03/04/13	F2
Surrogate									
2-Fluorobiphenyl	*47.7*		mg/kg dry	*23.9*		200		03/04/13 :03/04/13	*SU7*

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Blank (B13C037-BLK1)									
Acenaphthene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Anthracene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Chrysene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluorene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Naphthalene	ND	ug/kg wet	40					03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*70*		ug/kg wet	*100*		70		03/04/13 :03/04/13	
Fluoranthene-d10	*92*		ug/kg wet	*100*		92		03/04/13 :03/04/13	
Blank (B13C037-BLK2)									
Acenaphthene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Anthracene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Chrysene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluorene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Naphthalene	ND	ug/kg wet	40					03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*64*		ug/kg wet	*100*		64		03/04/13 :03/04/13	
Fluoranthene-d10	*89*		ug/kg wet	*100*		89		03/04/13 :03/04/13	
LCS (B13C037-BS1)									

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
LCS (B13C037-BS1)									
Acenaphthene	**35.6**	ug/kg wet	20	40.0		89 *(50-150)*		03/04/13 :03/04/13	
Acenaphthylene	**37.6**	ug/kg wet	20	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Anthracene	**37.2**	ug/kg wet	20	40.0		93 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)anthracene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)pyrene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Benzo(b)fluoranthene	**36.0**	ug/kg wet	10	40.0		90 *(50-150)*		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	**38.8**	ug/kg wet	10	40.0		97 *(50-150)*		03/04/13 :03/04/13	
Benzo(k)fluoranthene	**35.6**	ug/kg wet	10	40.0		89 *(50-150)*		03/04/13 :03/04/13	
Chrysene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	**36.0**	ug/kg wet	10	40.0		90 *(50-150)*		03/04/13 :03/04/13	
Fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Fluorene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Naphthalene	**32.0**	ug/kg wet	20	40.0		80 *(50-150)*		03/04/13 :03/04/13	
Phenanthrene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Pyrene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*66*		ug/kg wet	*100*		66 *(31.9-133)*		03/04/13 :03/04/13	
Fluoranthene-d10	*89*		ug/kg wet	*100*		89 *(64.7-154)*		03/04/13 :03/04/13	
LCS (B13C037-BS2)									
Acenaphthene	**37.6**	ug/kg wet	20	40.0		94 *(50-150)*		03/04/13 :03/04/13	
Acenaphthylene	**38.4**	ug/kg wet	20	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Anthracene	**38.4**	ug/kg wet	20	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)anthracene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)pyrene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Benzo(b)fluoranthene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	**39.6**	ug/kg wet	10	40.0		99 *(50-150)*		03/04/13 :03/04/13	
Benzo(k)fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/04/13 :03/04/13	
Chrysene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/04/13 :03/04/13	
Fluoranthene	**38.0**	ug/kg wet	10	40.0		95 *(50-150)*		03/04/13 :03/04/13	
Fluorene	**38.0**	ug/kg wet	20	40.0		95 *(50-150)*		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Naphthalene	**33.6**	ug/kg wet	20	40.0		84 *(50-150)*		03/04/13 :03/04/13	
Phenanthrene	**38.4**	ug/kg wet	20	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Pyrene	**38.4**	ug/kg wet	10	40.0		96 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*65*		ug/kg wet	*100*		65 *(31.9-133)*		03/04/13 :03/04/13	
Fluoranthene-d10	*92*		ug/kg wet	*100*		92 *(64.7-154)*		03/04/13 :03/04/13	
Duplicate (B13C037-DUP1)			**Source: W13B210-01**						

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Duplicate (B13C037-DUP1)			**Source: W13B210-01**						
Acenaphthene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Acenaphthylene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Anthracene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Chrysene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Fluorene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Naphthalene	ND	ug/kg dry	40		ND		(50)	03/04/13 :03/05/13	
Phenanthrene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*73*		ug/kg dry	*107*		68		03/04/13 :03/05/13	
Fluoranthene-d10	*89*		ug/kg dry	*107*		84		03/04/13 :03/05/13	
Duplicate (B13C037-DUP2)			**Source: W13C011-03**						
Acenaphthene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Anthracene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Chrysene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluorene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Naphthalene	ND	ug/kg dry	40		ND		(50)	03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*62*		ug/kg dry	*115*		54		03/04/13 :03/04/13	
Fluoranthene-d10	*100*		ug/kg dry	*115*		90		03/04/13 :03/04/13	
Duplicate (B13C037-DUP3)			**Source: W13C011-05**						

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Duplicate (B13C037-DUP3)			**Source: W13C011-05**						
Acenaphthene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Acenaphthylene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Anthracene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Benzo(a)anthracene	**35.8**	ug/kg dry	10		37.3		4 (50)	03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Chrysene	**144**	ug/kg dry	10		142		1 (50)	03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg dry	250		ND		(50)	03/04/13 :03/04/13	D4, M15
Fluorene	**2560**	ug/kg dry	200		2850		11 (50)	03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Naphthalene	ND	ug/kg dry	1000		ND		(50)	03/04/13 :03/04/13	D4, M15
Phenanthrene	**5700**	ug/kg dry	200		6330		11 (50)	03/04/13 :03/05/13	
Pyrene	**743**	ug/kg dry	10		778		5 (50)	03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*110*		ug/kg dry	*119*		96		03/04/13 :03/04/13	
Fluoranthene-d10	*120*		ug/kg dry	*119*		102		03/04/13 :03/04/13	
Matrix Spike (B13C037-MS1)			**Source: W13B210-01**						
Acenaphthene	**105**	ug/kg dry	20	115	ND	91 (50-150)		03/04/13 :03/05/13	
Acenaphthylene	**108**	ug/kg dry	20	115	ND	94 (50-150)		03/04/13 :03/05/13	
Anthracene	**106**	ug/kg dry	20	115	ND	92 (50-150)		03/04/13 :03/05/13	
Benzo(a)anthracene	**109**	ug/kg dry	10	115	ND	94 (50-150)		03/04/13 :03/05/13	
Benzo(a)pyrene	**109**	ug/kg dry	10	115	ND	95 (50-150)		03/04/13 :03/05/13	
Benzo(b)fluoranthene	**103**	ug/kg dry	10	115	ND	90 (50-150)		03/04/13 :03/05/13	
Benzo(g,h,i)perylene	**113**	ug/kg dry	10	115	ND	98 (50-150)		03/04/13 :03/05/13	
Benzo(k)fluoranthene	**102**	ug/kg dry	10	115	ND	88 (50-150)		03/04/13 :03/05/13	
Chrysene	**106**	ug/kg dry	10	115	ND	92 (50-150)		03/04/13 :03/05/13	
Dibenzo(a,h)anthracene	**107**	ug/kg dry	10	115	ND	93 (50-150)		03/04/13 :03/05/13	
Fluoranthene	**108**	ug/kg dry	10	115	ND	94 (50-150)		03/04/13 :03/05/13	
Fluorene	**106**	ug/kg dry	20	115	ND	92 (50-150)		03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	**111**	ug/kg dry	10	115	ND	96 (50-150)		03/04/13 :03/05/13	
Naphthalene	**101**	ug/kg dry	40	115	ND	88 (50-150)		03/04/13 :03/05/13	
Phenanthrene	**104**	ug/kg dry	20	115	ND	90 (50-150)		03/04/13 :03/05/13	
Pyrene	**108**	ug/kg dry	10	115	ND	94 (50-150)		03/04/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*74*		ug/kg dry	*115*		64 (31.9-133)		03/04/13 :03/05/13	
Fluoranthene-d10	*91*		ug/kg dry	*115*		79 (64.7-154)		03/04/13 :03/05/13	
Matrix Spike (B13C037-MS2)			**Source: W13C011-03**						

Reported: 03/22/13 06:30

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Matrix Spike (B13C037-MS2)			**Source: W13C011-03**						
Acenaphthene	**110**	ug/kg dry	20	121	ND	91 *(50-150)*		03/04/13 :03/04/13	
Acenaphthylene	**117**	ug/kg dry	20	121	ND	97 *(50-150)*		03/04/13 :03/04/13	
Anthracene	**115**	ug/kg dry	20	121	ND	95 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)anthracene	**121**	ug/kg dry	10	121	ND	100 *(50-150)*		03/04/13 :03/04/13	
Benzo(a)pyrene	**125**	ug/kg dry	10	121	ND	104 *(50-150)*		03/04/13 :03/04/13	
Benzo(b)fluoranthene	**118**	ug/kg dry	10	121	ND	98 *(50-150)*		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	**132**	ug/kg dry	10	121	ND	109 *(50-150)*		03/04/13 :03/04/13	
Benzo(k)fluoranthene	**114**	ug/kg dry	10	121	ND	94 *(50-150)*		03/04/13 :03/04/13	
Chrysene	**121**	ug/kg dry	10	121	ND	100 *(50-150)*		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	**118**	ug/kg dry	10	121	ND	98 *(50-150)*		03/04/13 :03/04/13	
Fluoranthene	**123**	ug/kg dry	10	121	ND	102 *(50-150)*		03/04/13 :03/04/13	
Fluorene	**112**	ug/kg dry	20	121	ND	93 *(50-150)*		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	**127**	ug/kg dry	10	121	ND	105 *(50-150)*		03/04/13 :03/04/13	
Naphthalene	**108**	ug/kg dry	40	121	ND	89 *(50-150)*		03/04/13 :03/04/13	
Phenanthrene	**114**	ug/kg dry	20	121	ND	94 *(50-150)*		03/04/13 :03/04/13	
Pyrene	**126**	ug/kg dry	10	121	ND	105 *(50-150)*		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*69*		ug/kg dry	*121*		58 *(31.9-133)*		03/04/13 :03/04/13	
Fluoranthene-d10	*110*		ug/kg dry	*121*		90 *(64.7-154)*		03/04/13 :03/04/13	

Reported: 03/22/13 06:30

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs) - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
PCB Aroclors by GC-ECD - Batch B13C116									
Blank (B13C116-BLK1)									
Aroclor 1016/1242	ND	ug/kg wet	10.0					03/06/13 :03/13/13	
Aroclor 1221	ND	ug/kg wet	20.0					03/06/13 :03/13/13	
Aroclor 1232	ND	ug/kg wet	10.0					03/06/13 :03/13/13	
Aroclor 1248	ND	ug/kg wet	10.0					03/06/13 :03/13/13	
Aroclor 1254	ND	ug/kg wet	10.0					03/06/13 :03/13/13	
Aroclor 1260	ND	ug/kg wet	10.0					03/06/13 :03/13/13	
Aroclor 1262	ND	ug/kg wet	10.0					03/06/13 :03/13/13	
Aroclor 1268	ND	ug/kg wet	10.0					03/06/13 :03/13/13	
Surrogate									
Tetrachloro-m-xylene	*10.7*		ug/kg wet	*10.0*		107		03/06/13 :03/13/13	
Decachlorobiphenyl	*13.2*		ug/kg wet	*10.0*		132		03/06/13 :03/13/13	
LCS (B13C116-BS1)									
Aroclor 1016/1242	**113.0**	ug/kg wet	10.0	100		113 *(78.7-127)*		03/06/13 :03/13/13	
Aroclor 1260	**101.9**	ug/kg wet	10.0	100		102 *(80.9-139)*		03/06/13 :03/13/13	
Surrogate									
Tetrachloro-m-xylene	*10.5*		ug/kg wet	*10.0*		105 *(60.3-141)*		03/06/13 :03/13/13	
Decachlorobiphenyl	*12.0*		ug/kg wet	*10.0*		120 *(48.6-164)*		03/06/13 :03/13/13	
Matrix Spike (B13C116-MS1)			**Source: W13B215-01**						
Aroclor 1016/1242	**133.7**	ug/kg dry	10.0	125	ND	107 *(50.8-144)*		03/06/13 :03/13/13	
Aroclor 1260	**202.6**	ug/kg dry	10.0	125	118.1	67 *(33-158)*		03/06/13 :03/13/13	
Surrogate									
Tetrachloro-m-xylene	*12.3*		ug/kg dry	*12.5*		98 *(60.3-141)*		03/06/13 :03/13/13	
Decachlorobiphenyl	*14.4*		ug/kg dry	*12.5*		115 *(48.6-164)*		03/06/13 :03/13/13	
Matrix Spike Dup (B13C116-MSD1)			**Source: W13B215-01**						
Aroclor 1016/1242	**137.7**	ug/kg dry	10.0	126	ND	109 *(50.8-144)*	3 *(20)*	03/06/13 :03/13/13	
Aroclor 1260	**214.3**	ug/kg dry	10.0	126	118.1	76 *(33-158)*	6 *(20)*	03/06/13 :03/13/13	
Surrogate									
Tetrachloro-m-xylene	*12.8*		ug/kg dry	*12.6*		102 *(60.3-141)*		03/06/13 :03/13/13	
Decachlorobiphenyl	*14.4*		ug/kg dry	*12.6*		114 *(48.6-164)*		03/06/13 :03/13/13	

Reported: 03/22/13 06:30

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Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C011**	Project Mgr:	John O'Donovan

Qualifiers

D4	Reporting limit is raised for this analyte due to non-target matrix interference.
F2	Result for heavy oil is primarily due to overlap from diesel-range hydrocarbons.
M15	The result is an estimate due to chromatographic interference that affected quantitation.
SU7	High surrogate recovery is due to co-eluting matrix interferent.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference

Reported: 03/22/13 06:30

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
Sample Custodian: (503) 823-5696
General Lab: (503) 823-5681

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 3-1-2013

Work Order #: W13C011

Collected By: Graeme Taylor

Client Name: Coordinated Site Analysis
Project Name: Kenton Brass Foundry

Requested Analyses

Comments
"Tank Bottom" sample smells strongly like gasoline. RAK

Lab Number	Sample ID	Sample Date	Sample Time	Grab or Comp	Sample Matrix	PCB Aroclors	PAHs 8270 SIM	RCRA 8 Metals	TPH-Gx	TPH-Dx	VOCs	Hold	# of jars
01	03012013_CS	3/1/13	1115	C	S	X	X	X					5
02	SW-E-3		1130	C		X	X	X					5
03	SW-W-3		1540	C		X	X	X					4
04	03012013_CS_2		1600	C		X	X	X					3
05	Tank Bottom		1535	G			X		X	X	X		5
06	Black		1530	G								X	5

Please rush this sample - need results by COB Tuesday 3/5/13

Relinquished By:	Date:	Received By:	Date:	Relinquished By:	Date:	Received By:	Date:
Signature: Graeme B Tay	3-1-13	Signature: Jason Dale	3/1/13	Signature:		Signature:	
Printed Name: Graeme Taylor	Time: 17:32	Printed Name: JASON DALE	Time: 1732	Printed Name:	Time:	Printed Name:	Time:

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Portland
9405 SW Nimbus Ave.
Beaverton, OR 97008
Tel: (503)906-9200

TestAmerica Job ID: 250-10324-1
Client Project/Site: Kenton Brass Foundry/W13C011

For:
City of Portland
Water Pollution Laboratory
6543 N. Burlington Ave
Portland, Oregon 97203

Attn: Jennifer Shackelford

Authorized for release by:
3/5/2013 3:38:06 PM
Erica Fot
Project Mgmt. Assistant
erica.fot@testamericainc.com

Designee for

Jay Willms
Project Manager I
jay.willms@testamericainc.com

LINKS

Review your project results through TotalAccess

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Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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Sample Summary

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
250-10324-1	W13C011-05	Solid	03/01/13 15:33	03/04/13 10:00

Case Narrative

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Job ID: 250-10324-1

Laboratory: TestAmerica Portland

Narrative

Job Narrative
250-10324-1

Comments
No additional comments.

Receipt
The sample was received on 3/4/2013 10:00 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.3º C.

GC/MS VOA
Method 8260B: The following sample was diluted due to the abundance of non-target analytes: W13C011-05 (250-10324-1). Elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

GC VOA
Method AK101, NWTPH-Gx: The Gasoline Range Hydrocarbons (GRH) concentration reported for the following sample(s) is due to the presence of diesel: (250-10324-1 DU), W13C011-05 (250-10324-1).

No other analytical or quality issues were noted.

VOA Prep
No analytical or quality issues were noted.

Definitions/Glossary

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

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, 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: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: W13C011-05
Date Collected: 03/01/13 15:33
Date Received: 03/04/13 10:00

Lab Sample ID: 250-10324-1
Matrix: Solid
Percent Solids: 77.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		7800		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Benzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Bromobenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Bromochloromethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Bromodichloromethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Bromoform	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Bromomethane	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
2-Butanone (MEK)	ND		3100		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
n-Butylbenzene	**3400**		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
sec-Butylbenzene	**1400**		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
tert-Butylbenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Carbon disulfide	ND		3100		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Carbon tetrachloride	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Chlorobenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Chloroethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Chloroform	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Chloromethane	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
2-Chlorotoluene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
4-Chlorotoluene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2-Dibromo-3-Chloropropane	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Dibromochloromethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2-Dibromoethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Dibromomethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2-Dichloroethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,3-Dichlorobenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,4-Dichlorobenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Dichlorodifluoromethane	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,1-Dichloroethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,1-Dichloroethene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
cis-1,2-Dichloroethene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
trans-1,2-Dichloroethene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2-Dichloropropane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,3-Dichloropropane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
2,2-Dichloropropane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,1-Dichloropropene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
cis-1,3-Dichloropropene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
trans-1,3-Dichloropropene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Ethylbenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Hexachlorobutadiene	ND		1200		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
2-Hexanone	ND		3100		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Isopropylbenzene	ND		620		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
p-Isopropyltoluene	**1700**		620		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
4-Methyl-2-pentanone (MIBK)	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Methyl tert-butyl ether	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Methylene Chloride	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Naphthalene	ND		620		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
N-Propylbenzene	**440**		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Styrene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,1,1,2-Tetrachloroethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2

Client Sample Results

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: W13C011-05
Date Collected: 03/01/13 15:33
Date Received: 03/04/13 10:00

Lab Sample ID: 250-10324-1
Matrix: Solid
Percent Solids: 77.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Tetrachloroethene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Toluene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2,3-Trichlorobenzene	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2,4-Trichlorobenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,1,1-Trichloroethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,1,2-Trichloroethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Trichloroethene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Trichlorofluoromethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2,3-Trichloropropane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2,4-Trimethylbenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,3,5-Trimethylbenzene	**540**		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Vinyl chloride	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
m,p-Xylene	ND		620		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
o-Xylene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2-Dichlorobenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*	*03/04/13 11:24*	*03/04/13 14:20*	*2*
4-Bromofluorobenzene (Surr)	*106*		*75 - 125*	*03/04/13 11:24*	*03/04/13 14:20*	*2*
Dibromofluoromethane (Surr)	*100*		*75 - 125*	*03/04/13 11:24*	*03/04/13 14:20*	*2*
Toluene-d8 (Surr)	*100*		*75 - 125*	*03/04/13 11:24*	*03/04/13 14:20*	*2*

Client Sample Results

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Client Sample ID: W13C011-05
Date Collected: 03/01/13 15:33
Date Received: 03/04/13 10:00

Lab Sample ID: 250-10324-1
Matrix: Solid
Percent Solids: 77.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	850		63		mg/Kg	☼	03/04/13 11:58	03/04/13 14:37	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*67*		*50 - 150*	*03/04/13 11:58*	*03/04/13 14:37*	*10*

Client Sample Results

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

General Chemistry

Client Sample ID: W13C011-05
Date Collected: 03/01/13 15:33
Date Received: 03/04/13 10:00

Lab Sample ID: 250-10324-1
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23		0.010		%			03/04/13 23:26	1
Percent Solids	77		0.010		%			03/04/13 23:26	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 250-14706/1-A
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 14706

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		2400		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Benzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Bromobenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Bromochloromethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Bromodichloromethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Bromoform	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Bromomethane	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
2-Butanone (MEK)	ND		950		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
n-Butylbenzene	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
sec-Butylbenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
tert-Butylbenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Carbon disulfide	ND		950		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Carbon tetrachloride	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Chlorobenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Chloroethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Chloroform	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Chloromethane	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
2-Chlorotoluene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
4-Chlorotoluene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2-Dibromo-3-Chloropropane	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Dibromochloromethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2-Dibromoethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Dibromomethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2-Dichloroethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,3-Dichlorobenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,4-Dichlorobenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Dichlorodifluoromethane	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,1-Dichloroethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,1-Dichloroethene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
cis-1,2-Dichloroethene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
trans-1,2-Dichloroethene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2-Dichloropropane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,3-Dichloropropane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
2,2-Dichloropropane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,1-Dichloropropene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
cis-1,3-Dichloropropene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
trans-1,3-Dichloropropene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Ethylbenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Hexachlorobutadiene	ND		380		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
2-Hexanone	ND		950		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Isopropylbenzene	ND		190		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
p-Isopropyltoluene	ND		190		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
4-Methyl-2-pentanone (MIBK)	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Methyl tert-butyl ether	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Methylene Chloride	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Naphthalene	ND		190		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
N-Propylbenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Styrene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 250-14706/1-A
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 14706

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,1,2,2-Tetrachloroethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Tetrachloroethene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Toluene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2,3-Trichlorobenzene	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2,4-Trichlorobenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,1,1-Trichloroethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,1,2-Trichloroethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Trichloroethene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Trichlorofluoromethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2,3-Trichloropropane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2,4-Trimethylbenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,3,5-Trimethylbenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Vinyl chloride	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
m,p-Xylene	ND		190		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
o-Xylene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2-Dichlorobenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*	*03/04/13 11:24*	*03/04/13 12:47*	*1*
4-Bromofluorobenzene (Surr)	*102*		*75 - 125*	*03/04/13 11:24*	*03/04/13 12:47*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 125*	*03/04/13 11:24*	*03/04/13 12:47*	*1*
Toluene-d8 (Surr)	*101*		*75 - 125*	*03/04/13 11:24*	*03/04/13 12:47*	*1*

Lab Sample ID: LCS 250-14706/2-A
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14706

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	9520	10900		ug/Kg		115	65 - 150
Benzene	1900	1920		ug/Kg		101	80 - 120
Bromobenzene	1900	2180		ug/Kg		114	80 - 120
Bromochloromethane	1900	2290		ug/Kg		120	80 - 120
Bromodichloromethane	1900	1900		ug/Kg		100	80 - 140
Bromoform	1900	2280		ug/Kg		120	75 - 150
Bromomethane	1900	2380		ug/Kg		125	65 - 130
2-Butanone (MEK)	9520	9100		ug/Kg		96	70 - 125
n-Butylbenzene	1900	1890		ug/Kg		99	80 - 150
sec-Butylbenzene	1900	2150		ug/Kg		113	80 - 135
tert-Butylbenzene	1900	2120		ug/Kg		112	80 - 130
Carbon disulfide	3810	4140		ug/Kg		109	65 - 140
Carbon tetrachloride	1900	2110		ug/Kg		111	70 - 130
Chlorobenzene	1900	1970		ug/Kg		103	80 - 125
Chloroethane	1900	2150		ug/Kg		113	75 - 125
Chloroform	1900	1960		ug/Kg		103	80 - 120
Chloromethane	1900	1730		ug/Kg		91	40 - 150
2-Chlorotoluene	1900	2070		ug/Kg		109	80 - 120
4-Chlorotoluene	1900	2080		ug/Kg		109	80 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 250-14706/2-A
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14706

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromo-3-Chloropropane	1900	1830		ug/Kg		96	60 - 130
Dibromochloromethane	1900	2060		ug/Kg		108	75 - 125
1,2-Dibromoethane	1900	2040		ug/Kg		107	80 - 125
Dibromomethane	1900	1960		ug/Kg		103	80 - 120
1,2-Dichloroethane	1900	1900		ug/Kg		100	80 - 120
1,3-Dichlorobenzene	1900	2160		ug/Kg		113	80 - 125
1,4-Dichlorobenzene	1900	2190		ug/Kg		115	75 - 120
Dichlorodifluoromethane	1900	2150		ug/Kg		113	75 - 120
1,1-Dichloroethane	1900	1860		ug/Kg		98	80 - 120
1,1-Dichloroethene	1900	2120		ug/Kg		111	75 - 125
cis-1,2-Dichloroethene	1900	1910		ug/Kg		100	75 - 125
trans-1,2-Dichloroethene	1900	1920		ug/Kg		101	75 - 125
1,2-Dichloropropane	1900	1910		ug/Kg		101	80 - 125
1,3-Dichloropropane	1900	1900		ug/Kg		100	75 - 130
2,2-Dichloropropane	1900	2160		ug/Kg		114	70 - 130
1,1-Dichloropropene	1900	1990		ug/Kg		104	80 - 125
cis-1,3-Dichloropropene	1900	2030		ug/Kg		106	80 - 125
trans-1,3-Dichloropropene	1900	2050		ug/Kg		108	65 - 145
Ethylbenzene	1900	2060		ug/Kg		108	80 - 125
Hexachlorobutadiene	1900	2210		ug/Kg		116	80 - 150
2-Hexanone	9520	8440		ug/Kg		89	55 - 120
Isopropylbenzene	1900	2090		ug/Kg		110	80 - 130
p-Isopropyltoluene	1900	2200		ug/Kg		115	80 - 120
4-Methyl-2-pentanone (MIBK)	9520	9030		ug/Kg		95	50 - 120
Methyl tert-butyl ether	1900	1990		ug/Kg		105	75 - 125
Methylene Chloride	1900	2210		ug/Kg		116	75 - 125
Naphthalene	1900	2150		ug/Kg		113	80 - 130
N-Propylbenzene	1900	2090		ug/Kg		110	80 - 120
Styrene	1900	2170		ug/Kg		114	80 - 125
1,1,1,2-Tetrachloroethane	1900	2120		ug/Kg		111	80 - 130
1,1,2,2-Tetrachloroethane	1900	1950		ug/Kg		102	70 - 135
Tetrachloroethene	1900	2120		ug/Kg		111	80 - 125
Toluene	1900	1940		ug/Kg		102	80 - 120
1,2,3-Trichlorobenzene	1900	2190		ug/Kg		115	80 - 145
1,2,4-Trichlorobenzene	1900	2120		ug/Kg		111	85 - 150
1,1,1-Trichloroethane	1900	2050		ug/Kg		108	80 - 125
1,1,2-Trichloroethane	1900	1880		ug/Kg		99	80 - 125
Trichloroethene	1900	1980		ug/Kg		104	80 - 125
Trichlorofluoromethane	1900	2180		ug/Kg		115	55 - 150
1,2,3-Trichloropropane	1900	1970		ug/Kg		103	65 - 125
1,2,4-Trimethylbenzene	1900	2150		ug/Kg		113	80 - 135
1,3,5-Trimethylbenzene	1900	2190		ug/Kg		115	80 - 135
Vinyl chloride	1900	1240		ug/Kg		65	10 - 140
m,p-Xylene	3810	4200		ug/Kg		110	80 - 120
o-Xylene	1900	2140		ug/Kg		112	80 - 125
1,2-Dichlorobenzene	1900	1890		ug/Kg		99	80 - 120

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 250-14706/2-A
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14706

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*
4-Bromofluorobenzene (Surr)	*107*		*75 - 125*
Dibromofluoromethane (Surr)	*101*		*75 - 125*
Toluene-d8 (Surr)	*103*		*75 - 125*

Lab Sample ID: 250-10324-1 MS
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: W13C011-05
Prep Type: Total/NA
Prep Batch: 14706

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	ND		31000	34500		ug/Kg	☼	111	60 - 145
Benzene	ND		6200	6070		ug/Kg	☼	98	80 - 125
Bromobenzene	ND		6200	6980		ug/Kg	☼	113	70 - 130
Bromochloromethane	ND		6200	7420		ug/Kg	☼	120	80 - 130
Bromodichloromethane	ND		6200	6370		ug/Kg	☼	103	80 - 135
Bromoform	ND		6200	7950		ug/Kg	☼	128	70 - 130
Bromomethane	ND		6200	7510		ug/Kg	☼	121	70 - 130
2-Butanone (MEK)	ND		31000	32000		ug/Kg	☼	103	70 - 145
n-Butylbenzene	3400		6200	8840		ug/Kg	☼	88	70 - 140
sec-Butylbenzene	1400		6200	8080		ug/Kg	☼	107	70 - 135
tert-Butylbenzene	ND		6200	6950		ug/Kg	☼	112	80 - 135
Carbon disulfide	ND		12400	13200		ug/Kg	☼	106	70 - 130
Carbon tetrachloride	ND		6200	6490		ug/Kg	☼	105	70 - 125
Chlorobenzene	ND		6200	6370		ug/Kg	☼	103	70 - 130
Chloroethane	ND		6200	6500		ug/Kg	☼	105	70 - 130
Chloroform	ND		6200	6220		ug/Kg	☼	100	80 - 125
Chloromethane	ND		6200	5430		ug/Kg	☼	88	40 - 150
2-Chlorotoluene	ND		6200	6610		ug/Kg	☼	106	80 - 125
4-Chlorotoluene	ND		6200	6600		ug/Kg	☼	106	70 - 130
1,2-Dibromo-3-Chloropropane	ND		6200	7490		ug/Kg	☼	121	60 - 145
Dibromochloromethane	ND		6200	7260		ug/Kg	☼	117	80 - 130
1,2-Dibromoethane	ND		6200	7060		ug/Kg	☼	114	80 - 130
Dibromomethane	ND		6200	6500		ug/Kg	☼	105	75 - 125
1,2-Dichloroethane	ND		6200	6300		ug/Kg	☼	101	75 - 120
1,3-Dichlorobenzene	ND		6200	7130		ug/Kg	☼	115	80 - 130
1,4-Dichlorobenzene	ND		6200	6920		ug/Kg	☼	111	80 - 120
Dichlorodifluoromethane	ND		6200	6630		ug/Kg	☼	107	65 - 135
1,1-Dichloroethane	ND		6200	5970		ug/Kg	☼	96	80 - 125
1,1-Dichloroethene	ND		6200	6570		ug/Kg	☼	106	70 - 130
cis-1,2-Dichloroethene	ND		6200	6040		ug/Kg	☼	97	75 - 120
trans-1,2-Dichloroethene	ND		6200	5920		ug/Kg	☼	95	70 - 130
1,2-Dichloropropane	ND		6200	6280		ug/Kg	☼	101	80 - 130
1,3-Dichloropropane	ND		6200	6530		ug/Kg	☼	105	75 - 130
2,2-Dichloropropane	ND		6200	6830		ug/Kg	☼	110	70 - 130
1,1-Dichloropropene	ND		6200	6360		ug/Kg	☼	102	80 - 125
cis-1,3-Dichloropropene	ND		6200	6660		ug/Kg	☼	107	80 - 130
trans-1,3-Dichloropropene	ND		6200	6920		ug/Kg	☼	112	70 - 145
Ethylbenzene	ND		6200	6600		ug/Kg	☼	106	80 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-10324-1 MS — **Client Sample ID: W13C011-05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 14756 — **Prep Batch: 14706**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hexachlorobutadiene	ND		6200	8480		ug/Kg	☼	137	45 - 150
2-Hexanone	ND		31000	32600		ug/Kg	☼	105	65 - 150
Isopropylbenzene	ND		6200	6920		ug/Kg	☼	112	80 - 130
p-Isopropyltoluene	1700		6200	8430		ug/Kg	☼	108	70 - 140
4-Methyl-2-pentanone (MIBK)	ND		31000	34300		ug/Kg	☼	111	60 - 150
Methyl tert-butyl ether	ND		6200	6970		ug/Kg	☼	112	70 - 130
Methylene Chloride	ND		6200	6640		ug/Kg	☼	107	70 - 120
Naphthalene	ND		6200	6250		ug/Kg	☼	101	70 - 130
N-Propylbenzene	440		6200	7110		ug/Kg	☼	107	70 - 130
Styrene	ND		6200	7130		ug/Kg	☼	115	85 - 120
1,1,1,2-Tetrachloroethane	ND		6200	6910		ug/Kg	☼	111	80 - 130
1,1,2,2-Tetrachloroethane	ND		6200	7180		ug/Kg	☼	116	70 - 130
Tetrachloroethene	ND		6200	6490		ug/Kg	☼	105	75 - 140
Toluene	ND		6200	6230		ug/Kg	☼	100	70 - 130
1,2,3-Trichlorobenzene	ND		6200	6080		ug/Kg	☼	98	70 - 130
1,2,4-Trichlorobenzene	ND		6200	6010		ug/Kg	☼	97	70 - 150
1,1,1-Trichloroethane	ND		6200	6420		ug/Kg	☼	104	80 - 125
1,1,2-Trichloroethane	ND		6200	6690		ug/Kg	☼	108	80 - 130
Trichloroethene	ND		6200	6460		ug/Kg	☼	104	80 - 125
Trichlorofluoromethane	ND		6200	6850		ug/Kg	☼	110	70 - 130
1,2,3-Trichloropropane	ND		6200	6980		ug/Kg	☼	113	70 - 130
1,2,4-Trimethylbenzene	ND		6200	6930		ug/Kg	☼	112	70 - 130
1,3,5-Trimethylbenzene	540		6200	7280		ug/Kg	☼	109	75 - 140
Vinyl chloride	ND		6200	4170		ug/Kg	☼	67	10 - 140
m,p-Xylene	ND		12400	13500		ug/Kg	☼	109	75 - 135
o-Xylene	ND		6200	6720		ug/Kg	☼	108	70 - 130
1,2-Dichlorobenzene	ND		6200	6170		ug/Kg	☼	100	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 125*
4-Bromofluorobenzene (Surr)	*111*		*75 - 125*
Dibromofluoromethane (Surr)	*103*		*75 - 125*
Toluene-d8 (Surr)	*103*		*75 - 125*

Lab Sample ID: 250-10324-1 MSD — **Client Sample ID: W13C011-05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 14756 — **Prep Batch: 14706**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	ND		31800	39600		ug/Kg	☼	125	60 - 145	14	25
Benzene	ND		6360	6140		ug/Kg	☼	96	80 - 125	1	25
Bromobenzene	ND		6360	7060		ug/Kg	☼	111	70 - 130	1	25
Bromochloromethane	ND		6360	7420		ug/Kg	☼	117	80 - 130	0	25
Bromodichloromethane	ND		6360	6280		ug/Kg	☼	99	80 - 135	1	25
Bromoform	ND		6360	8130		ug/Kg	☼	128	70 - 130	2	25
Bromomethane	ND		6360	7720		ug/Kg	☼	121	70 - 130	3	25
2-Butanone (MEK)	ND		31800	34200		ug/Kg	☼	107	70 - 145	7	25
n-Butylbenzene	3400		6360	8800		ug/Kg	☼	85	70 - 140	0	25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-10324-1 MSD | **Client Sample ID: W13C011-05**
Matrix: Solid | **Prep Type: Total/NA**
Analysis Batch: 14756 | **Prep Batch: 14706**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene	1400		6360	8210		ug/Kg	☼	106	70 - 135	2	25
tert-Butylbenzene	ND		6360	6960		ug/Kg	☼	109	80 - 135	0	25
Carbon disulfide	ND		12700	13600		ug/Kg	☼	107	70 - 130	3	25
Carbon tetrachloride	ND		6360	6480		ug/Kg	☼	102	70 - 125	0	25
Chlorobenzene	ND		6360	6360		ug/Kg	☼	100	70 - 130	0	25
Chloroethane	ND		6360	6840		ug/Kg	☼	107	70 - 130	5	25
Chloroform	ND		6360	6000		ug/Kg	☼	94	80 - 125	4	25
Chloromethane	ND		6360	5580		ug/Kg	☼	88	40 - 150	3	25
2-Chlorotoluene	ND		6360	6620		ug/Kg	☼	104	80 - 125	0	25
4-Chlorotoluene	ND		6360	6640		ug/Kg	☼	104	70 - 130	1	25
1,2-Dibromo-3-Chloropropane	ND		6360	7120		ug/Kg	☼	112	60 - 145	5	25
Dibromochloromethane	ND		6360	7210		ug/Kg	☼	113	80 - 130	1	25
1,2-Dibromoethane	ND		6360	7040		ug/Kg	☼	111	80 - 130	0	25
Dibromomethane	ND		6360	6440		ug/Kg	☼	101	75 - 125	1	25
1,2-Dichloroethane	ND		6360	6150		ug/Kg	☼	97	75 - 120	2	25
1,3-Dichlorobenzene	ND		6360	6870		ug/Kg	☼	108	80 - 130	4	25
1,4-Dichlorobenzene	ND		6360	6940		ug/Kg	☼	109	80 - 120	0	25
Dichlorodifluoromethane	ND		6360	6800		ug/Kg	☼	107	65 - 135	3	25
1,1-Dichloroethane	ND		6360	5900		ug/Kg	☼	93	80 - 125	1	25
1,1-Dichloroethene	ND		6360	6540		ug/Kg	☼	103	70 - 130	0	25
cis-1,2-Dichloroethene	ND		6360	6050		ug/Kg	☼	95	75 - 120	0	25
trans-1,2-Dichloroethene	ND		6360	5810		ug/Kg	☼	91	70 - 130	2	25
1,2-Dichloropropane	ND		6360	6220		ug/Kg	☼	98	80 - 130	1	25
1,3-Dichloropropane	ND		6360	6630		ug/Kg	☼	104	75 - 130	1	25
2,2-Dichloropropane	ND		6360	6750		ug/Kg	☼	106	70 - 130	1	25
1,1-Dichloropropene	ND		6360	6500		ug/Kg	☼	102	80 - 125	2	25
cis-1,3-Dichloropropene	ND		6360	6700		ug/Kg	☼	105	80 - 130	1	25
trans-1,3-Dichloropropene	ND		6360	6990		ug/Kg	☼	110	70 - 145	1	25
Ethylbenzene	ND		6360	6580		ug/Kg	☼	104	80 - 125	0	25
Hexachlorobutadiene	ND		6360	8380		ug/Kg	☼	132	45 - 150	1	25
2-Hexanone	ND		31800	33400		ug/Kg	☼	105	65 - 150	2	25
Isopropylbenzene	ND		6360	7040		ug/Kg	☼	111	80 - 130	2	25
p-Isopropyltoluene	1700		6360	8670		ug/Kg	☼	109	70 - 140	3	25
4-Methyl-2-pentanone (MIBK)	ND		31800	36400		ug/Kg	☼	114	60 - 150	6	25
Methyl tert-butyl ether	ND		6360	7100		ug/Kg	☼	112	70 - 130	2	25
Methylene Chloride	ND		6360	6740		ug/Kg	☼	106	70 - 120	1	25
Naphthalene	ND		6360	6420		ug/Kg	☼	101	70 - 130	3	25
N-Propylbenzene	440		6360	7090		ug/Kg	☼	105	70 - 130	0	25
Styrene	ND		6360	7120		ug/Kg	☼	112	85 - 120	0	25
1,1,1,2-Tetrachloroethane	ND		6360	6900		ug/Kg	☼	108	80 - 130	0	25
1,1,2,2-Tetrachloroethane	ND		6360	6970		ug/Kg	☼	110	70 - 130	3	25
Tetrachloroethene	ND		6360	6630		ug/Kg	☼	104	75 - 140	2	25
Toluene	ND		6360	6240		ug/Kg	☼	98	70 - 130	0	25
1,2,3-Trichlorobenzene	ND		6360	5980		ug/Kg	☼	94	70 - 130	2	25
1,2,4-Trichlorobenzene	ND		6360	5860		ug/Kg	☼	92	70 - 150	3	25
1,1,1-Trichloroethane	ND		6360	6390		ug/Kg	☼	101	80 - 125	1	25
1,1,2-Trichloroethane	ND		6360	6630		ug/Kg	☼	104	80 - 130	1	25
Trichloroethene	ND		6360	6530		ug/Kg	☼	103	80 - 125	1	25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-10324-1 MSD — **Client Sample ID: W13C011-05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 14756 — **Prep Batch: 14706**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Trichlorofluoromethane	ND		6360	6820		ug/Kg	☼	107	70 - 130	0	25
1,2,3-Trichloropropane	ND		6360	6900		ug/Kg	☼	109	70 - 130	1	25
1,2,4-Trimethylbenzene	ND		6360	6760		ug/Kg	☼	106	70 - 130	2	25
1,3,5-Trimethylbenzene	540		6360	7300		ug/Kg	☼	106	75 - 140	0	25
Vinyl chloride	ND		6360	4190		ug/Kg	☼	66	10 - 140	1	25
m,p-Xylene	ND		12700	13400		ug/Kg	☼	105	75 - 135	1	25
o-Xylene	ND		6360	6730		ug/Kg	☼	106	70 - 130	0	25
1,2-Dichlorobenzene	ND		6360	5920		ug/Kg	☼	93	80 - 120	4	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*
4-Bromofluorobenzene (Surr)	*115*		*75 - 125*
Dibromofluoromethane (Surr)	*97*		*75 - 125*
Toluene-d8 (Surr)	*100*		*75 - 125*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 250-14708/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 14746 — **Prep Batch: 14708**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		4.0		mg/Kg		03/04/13 11:58	03/04/13 12:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*94*		*50 - 150*	*03/04/13 11:58*	*03/04/13 12:48*	*1*

Lab Sample ID: LCS 250-14708/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 14746 — **Prep Batch: 14708**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Hydrocarbons	25.0	23.4		mg/Kg		94	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (fid)	*78*		*50 - 150*

Lab Sample ID: 250-10324-1 MS — **Client Sample ID: W13C011-05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 14746 — **Prep Batch: 14708**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Hydrocarbons	850		39.4	934	4	mg/Kg	☼	210	65 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (fid)	*80*		*50 - 150*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 250-10324-1 DU — **Client Sample ID: W13C011-05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 14746 — **Prep Batch: 14708**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Gasoline Range Hydrocarbons	850			850		mg/Kg	☼			0.08	40

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
a,a,a-Trifluorotoluene (fid)	*64*		*50 - 150*

Method: D2216-80 - Percent Dry Weight (Solids) per ASTM D2216-80

Lab Sample ID: 250-10313-A-4 DU — **Client Sample ID: Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 14735

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	9.1			9.5		%				5	20
Percent Solids	91			90		%				0.5	20

Certification Summary

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Laboratory: TestAmerica Portland

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	State Program	10	OR00040	06-30-13
Alaska (UST)	State Program	10	UST-012	12-26-13
California	State Program	9	2597	09-30-13
Oregon	NELAP	10	OR100021	01-09-14
USDA	Federal		P330-11-00092	02-17-14
Washington	State Program	10	C586	06-23-13

Method Summary

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PRT
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	TAL PRT
D2216-80	Percent Dry Weight (Solids) per ASTM D2216-80	ASTM	TAL PRT

Protocol References:

ASTM = ASTM International

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PRT = TestAmerica Portland, 9405 SW Nimbus Ave., Beaverton, OR 97008, TEL (503)906-9200

10324

SUBCONTRACT ORDER

City of Portland Water Pollution Control Lab

W13C011

SENDING LABORATORY:

City of Portland Water Pollution Control Lab
6543 N. Burlington Ave
Portland, OR 97203
Phone: 503-823-5600
Fax: 503-823-5656
Invoice To: Charles Lytle using P.O.# 30001516

RECEIVING LABORATORY:

TestAmerica
9405 SW Nimbus Ave
Beaverton, OR 97008
Phone :(503) 906-9200
Fax: (503) 906-9210

WPCL Project Name
Kenton Brass Foundry

TURNAROUND REQUEST
~~[X] Standard~~
[X] Rush 1 day(s)

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: W13C011-05	**Solid**	**Sampled:03/01/13 15:33**		**THIS IS A RUSH - DUE 3/5/13**
Out-VOA 8260	03/05/13 17:00	03/15/13 15:33		Sample smells strongly like gasoline.
Out-NWTPH-Gx	03/05/13 17:00	03/15/13 15:33		
Containers Supplied:				
G jar amber 4 oz (D)	G jar amber 4 oz (E)			

Released By	Date	Received By	Date
	3/4/13 @ 0926		3/4/13 9:30am
	3/4/13		Tom Krause 03/06/13 1000

IR/6/B 5.30

Login Sample Receipt Checklist

Client: City of Portland

Job Number: 250-10324-1

Login Number: 10324
List Number: 1
Creator: Krause, Thomas

List Source: TestAmerica Portland

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
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	Received project as a subcontract.
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.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C018**	Project Mgr:	John O'Donovan
Received:	3/4/13 10:54	WQDB #:	Janus825
Submitted By:	CSA/Consultant		

Sample	Laboratory ID	Matrix	Type	Sample Collection Date Start	Sample Collection Date End	Qualifier
PFE @ 69"	W13C018-01	Soil	Grab	03/04/13 09:30	03/04/13 09:30	
PFW @ 69"	W13C018-02	Soil	Grab	03/04/13 09:32	03/04/13 09:32	
Tank Contents	W13C018-03	Soil	Grab	03/04/13 09:40	03/04/13 09:40	

General Chemistry

Total Solids

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
PFE @ 69" : W13C018-01									
Total solids	**77.4**	% W/W	0.01		B13C060	03/04/13	03/05/13	SM 2540G	
PFW @ 69" : W13C018-02									
Total solids	**75.8**	% W/W	0.01		B13C060	03/04/13	03/05/13	SM 2540G	
Tank Contents : W13C018-03									
Total solids	**76.5**	% W/W	0.01		B13C060	03/04/13	03/05/13	SM 2540G	

Total Metals

Total Metals by ICPMS

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
PFE @ 69" : W13C018-01									
Arsenic	**2.36**	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Barium	**164**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Chromium	**21.3**	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Lead	**7.71**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Mercury	**0.0109**	mg/kg dry	0.0100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C086	03/05/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
PFW @ 69" : W13C018-02									
Arsenic	**3.53**	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Barium	**178**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Cadmium	**0.172**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Chromium	**24.2**	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Lead	**10.2**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Mercury	**0.0189**	mg/kg dry	0.0100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C086	03/05/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	

Reported: 03/27/13 11:43

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C018**	Project Mgr:	John O'Donovan

Total Metals

Total Metals by ICPMS

Tank Contents : W13C018-03

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Arsenic	**2.83**	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Barium	**127**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Cadmium	**0.887**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Chromium	**22.0**	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Copper	**808**	mg/kg dry	0.200	100	B13C086	03/05/13	03/05/13	EPA 6020	
Lead	**90.5**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Mercury	**0.0252**	mg/kg dry	0.0100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C086	03/05/13	03/05/13	EPA 6020	
Silver	**0.273**	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Zinc	**764**	mg/kg dry	0.500	100	B13C086	03/05/13	03/05/13	EPA 6020	

Reported: 03/27/13 11:43

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Jennifer Shackelford, Laboratory Coordinator QA/QC

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C018**	Project Mgr:	John O'Donovan

Fuels

Diesel/Oil Hydrocarbons by GC-FID

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
PFE @ 69" : W13C018-01									
Diesel	**2100**	mg/kg dry	250	10	B13C089	03/05/13	03/05/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry	500	10	B13C089	03/05/13	03/05/13	NWTPH-Dx	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
2-Fluorobiphenyl	*32.7*		*22.3*	*147%*	*50-150*	*B13C089*	*03/05/13*	*03/05/13*	*NWTPH-Dx*
PFW @ 69" : W13C018-02									
Diesel	**530**	mg/kg dry	25	1	B13C089	03/05/13	03/05/13	NWTPH-Dx	
Lube oil	**240**	mg/kg dry	50	1	B13C089	03/05/13	03/05/13	NWTPH-Dx	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
2-Fluorobiphenyl	*25.9*		*25.9*	*100%*	*50-150*	*B13C089*	*03/05/13*	*03/05/13*	*NWTPH-Dx*
Tank Contents : W13C018-03									
Diesel	**3000**	mg/kg dry	250	10	B13C089	03/05/13	03/05/13	NWTPH-Dx	
Lube oil	**830**	mg/kg dry	500	10	B13C089	03/05/13	03/05/13	NWTPH-Dx	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
2-Fluorobiphenyl	*38.1*		*22.4*	*170%*	*50-150*	*B13C089*	*03/05/13*	*03/05/13*	*NWTPH-Dx*	*SU7*

Hydrocarbon Scan by GC-FID

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
PFE @ 69" : W13C018-01									
Gasoline	**DET**	mg/kg dry	20	1	B13C057	03/04/13	03/04/13	NWTPH-HCID	F4
Diesel	**DET**	mg/kg dry	50	1	B13C057	03/04/13	03/04/13	NWTPH-HCID	
Lube oil	**DET**	mg/kg dry	100	1	B13C057	03/04/13	03/04/13	NWTPH-HCID	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
2-Fluorobiphenyl	*72.6*		*12.9*	*562%*	*50-150*	*B13C057*	*03/04/13*	*03/04/13*	*NWTPH-HCID*	*SU7*
PFW @ 69" : W13C018-02									
Gasoline	ND	mg/kg dry	20	1	B13C057	03/04/13	03/04/13	NWTPH-HCID	
Diesel	**DET**	mg/kg dry	50	1	B13C057	03/04/13	03/04/13	NWTPH-HCID	
Lube oil	**DET**	mg/kg dry	100	1	B13C057	03/04/13	03/04/13	NWTPH-HCID	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
2-Fluorobiphenyl	*14.4*		*13.2*	*109%*	*50-150*	*B13C057*	*03/04/13*	*03/04/13*	*NWTPH-HCID*	*SU7*
Tank Contents : W13C018-03									
Gasoline	ND	mg/kg dry	20	1	B13C057	03/04/13	03/04/13	NWTPH-HCID	
Diesel	**DET**	mg/kg dry	50	1	B13C057	03/04/13	03/04/13	NWTPH-HCID	
Lube oil	**DET**	mg/kg dry	100	1	B13C057	03/04/13	03/04/13	NWTPH-HCID	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
2-Fluorobiphenyl	*37.6*		*13.1*	*288%*	*50-150*	*B13C057*	*03/04/13*	*03/04/13*	*NWTPH-HCID*	*SU7*

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Jennifer Shackelford

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C018**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

PFE @ 69" : W13C018-01

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	500	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	D4, M15
Acenaphthylene	ND	ug/kg dry	500	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	D4, M15
Anthracene	ND	ug/kg dry	500	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	D4, M15
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	50	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	D4, M15
Fluorene	**1100**	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	400	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	D4, M15
Phenanthrene	**2500**	ug/kg dry	200	100	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	100	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	D4, M15

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*110*	*112*	*99%*	*31.9-133*	*B13C071*	*03/05/13*	*03/05/13*	*EPA 8270-SIM*
Fluoranthene-d10	*100*	*112*	*91%*	*64.7-154*	*B13C071*	*03/05/13*	*03/05/13*	*EPA 8270-SIM*

PFW @ 69" : W13C018-02

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*94*	*129*	*72%*	*31.9-133*	*B13C071*	*03/05/13*	*03/05/13*	*EPA 8270-SIM*
Fluoranthene-d10	*120*	*129*	*90%*	*64.7-154*	*B13C071*	*03/05/13*	*03/05/13*	*EPA 8270-SIM*

Tank Contents : W13C018-03

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C018**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

Tank Contents : W13C018-03

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	500	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	D4, M15
Acenaphthylene	ND	ug/kg dry	500	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	D4, M15
Anthracene	ND	ug/kg dry	500	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	D4, M15
Benzo(a)anthracene	**28**	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(a)pyrene	**17**	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(b)fluoranthene	**30**	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	**16**	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Chrysene	**63**	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	100	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	D4, M15
Fluorene	**880**	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	**11**	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	200	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	D4, M15
Phenanthrene	**1800**	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	200	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	D4, M15

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*110*	*112*	*95%*	*31.9-133*	*B13C071*	*03/05/13*	*03/05/13*	*EPA 8270-SIM*
Fluoranthene-d10	*95*	*112*	*85%*	*64.7-154*	*B13C071*	*03/05/13*	*03/05/13*	*EPA 8270-SIM*

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C018**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs)

PCB Aroclors by GC-ECD

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
PFE @ 69" : W13C018-01									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1260	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*8.34*		*12.5*	*67%*	*60.3-141*	*B13C058*	*03/04/13*	*03/05/13*	*EPA 8082*
Decachlorobiphenyl	*13.4*		*12.5*	*107%*	*48.6-164*	*B13C058*	*03/04/13*	*03/05/13*	*EPA 8082*
PFW @ 69" : W13C018-02									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1260	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*12.0*		*12.9*	*94%*	*60.3-141*	*B13C058*	*03/04/13*	*03/05/13*	*EPA 8082*
Decachlorobiphenyl	*19.6*		*12.9*	*152%*	*48.6-164*	*B13C058*	*03/04/13*	*03/05/13*	*EPA 8082*
Tank Contents : W13C018-03									
Aroclor 1016/1242	**38.0**	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1248	**61.5**	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1260	**15.9**	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C058	03/04/13	03/05/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*11.1*		*12.6*	*88%*	*60.3-141*	*B13C058*	*03/04/13*	*03/05/13*	*EPA 8082*
Decachlorobiphenyl	*14.7*		*12.6*	*116%*	*48.6-164*	*B13C058*	*03/04/13*	*03/05/13*	*EPA 8082*

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C018**	Project Mgr:	John O'Donovan

Quality Control Report

General Chemistry - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Solids - Batch B13C060									
Duplicate (B13C060-DUP1)			**Source: W13C018-02**						
Total solids	**75.9**	% W/W	0.01		75.8		0.08 *(5)*	03/04/13 :03/05/13	

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C086									
Blank (B13C086-BLK1)									
Arsenic	ND	mg/kg wet	0.500					03/05/13 :03/05/13	
Barium	ND	mg/kg wet	0.100					03/05/13 :03/05/13	
Cadmium	ND	mg/kg wet	0.100					03/05/13 :03/05/13	
Chromium	ND	mg/kg wet	0.500					03/05/13 :03/05/13	
Copper	ND	mg/kg wet	0.200					03/05/13 :03/05/13	
Lead	ND	mg/kg wet	0.100					03/05/13 :03/05/13	
Mercury	ND	mg/kg wet	0.0100					03/05/13 :03/05/13	
Selenium	ND	mg/kg wet	1.00					03/05/13 :03/05/13	
Silver	ND	mg/kg wet	0.100					03/05/13 :03/05/13	
Zinc	ND	mg/kg wet	0.500					03/05/13 :03/05/13	
Standard Reference Material (B13C086-SRM1)									
Arsenic	**94.3**	mg/kg wet	0.500	94.5		100 *(75-125)*		03/05/13 :03/05/13	
Barium	**206**	mg/kg wet	0.100	188		110 *(75-125)*		03/05/13 :03/05/13	
Cadmium	**61.1**	mg/kg wet	0.100	60.5		101 *(75-125)*		03/05/13 :03/05/13	
Chromium	**85.3**	mg/kg wet	0.500	82.2		104 *(75-125)*		03/05/13 :03/05/13	
Copper	**79.7**	mg/kg wet	0.200	82.0		97 *(75-125)*		03/05/13 :03/05/13	
Lead	**90.5**	mg/kg wet	0.100	91.8		99 *(75-125)*		03/05/13 :03/05/13	
Mercury	**3.446**	mg/kg wet	0.0100	3.69		93 *(75-125)*		03/05/13 :03/05/13	
Selenium	**87.7**	mg/kg wet	1.00	91.6		96 *(75-125)*		03/05/13 :03/05/13	
Silver	**34.8**	mg/kg wet	0.100	34.4		101 *(75-125)*		03/05/13 :03/05/13	
Zinc	**146**	mg/kg wet	0.500	150		97 *(75-125)*		03/05/13 :03/05/13	
Duplicate (B13C086-DUP1)			**Source: W13C011-01**						
Arsenic	**7.64**	mg/kg dry	0.500		7.48		2 *(20)*	03/05/13 :03/05/13	
Barium	**211**	mg/kg dry	0.100		180		16 *(20)*	03/05/13 :03/05/13	
Cadmium	ND	mg/kg dry	0.100		ND		*(20)*	03/05/13 :03/05/13	
Chromium	**31.8**	mg/kg dry	0.500		28.0		13 *(20)*	03/05/13 :03/05/13	
Copper	**21.2**	mg/kg dry	0.200		21.1		0.6 *(20)*	03/05/13 :03/05/13	
Lead	**13.0**	mg/kg dry	0.100		12.6		4 *(20)*	03/05/13 :03/05/13	
Mercury	**0.02491**	mg/kg dry	0.0100		0.02495		0.2 *(20)*	03/05/13 :03/05/13	

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C018**	Project Mgr:	John O'Donovan

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C086									
Duplicate (B13C086-DUP1)			**Source: W13C011-01**						
Selenium	ND	mg/kg dry	1.00		ND		*(20)*	03/05/13 :03/05/13	
Silver	ND	mg/kg dry	0.100		ND		*(20)*	03/05/13 :03/05/13	
Zinc	**82.3**	mg/kg dry	0.500		79.9		3 *(20)*	03/05/13 :03/05/13	
Matrix Spike (B13C086-MS1)			**Source: W13C011-01**						
Arsenic	**22.7**	mg/kg dry	0.500	16.2	7.48	94 *(75-125)*		03/05/13 :03/05/13	
Barium	**438**	mg/kg dry	0.100	243	180	106 *(75-125)*		03/05/13 :03/05/13	
Cadmium	**15.9**	mg/kg dry	0.100	16.2	ND	98 *(75-125)*		03/05/13 :03/05/13	
Chromium	**77.1**	mg/kg dry	0.500	48.6	28.0	101 *(75-125)*		03/05/13 :03/05/13	
Copper	**98.2**	mg/kg dry	0.200	80.9	21.1	95 *(75-125)*		03/05/13 :03/05/13	
Lead	**91.1**	mg/kg dry	0.100	80.9	12.6	97 *(75-125)*		03/05/13 :03/05/13	
Mercury	**0.8272**	mg/kg dry	0.0100	0.809	0.02495	99 *(75-125)*		03/05/13 :03/05/13	
Selenium	**77.1**	mg/kg dry	1.00	80.9	ND	95 *(75-125)*		03/05/13 :03/05/13	
Silver	**15.8**	mg/kg dry	0.100	16.2	ND	97 *(75-125)*		03/05/13 :03/05/13	
Zinc	**161**	mg/kg dry	0.500	80.9	79.9	100 *(75-125)*		03/05/13 :03/05/13	

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C018**	Project Mgr:	John O'Donovan

Fuels - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Diesel/Oil Hydrocarbons by GC-FID - Batch B13C089									
Blank (B13C089-BLK1)									
Diesel	ND	mg/kg wet	25					03/05/13 :03/05/13	
Lube oil	ND	mg/kg wet	50					03/05/13 :03/05/13	
Surrogate									
2-Fluorobiphenyl	*17.9*		mg/kg wet	*20.0*		89		03/05/13 :03/05/13	
LCS (B13C089-BS1)									
Diesel	**83.6**	mg/kg wet	25	100		84 *(50-150)*		03/05/13 :03/05/13	
Lube oil	**95.8**	mg/kg wet	50	100		96 *(50-150)*		03/05/13 :03/05/13	
Surrogate									
2-Fluorobiphenyl	*19.8*		mg/kg wet	*20.0*		99 *(50-150)*		03/05/13 :03/05/13	
Duplicate (B13C089-DUP1)			**Source: W13C018-02**						
Diesel	**618**	mg/kg dry	25		527		16 *(50)*	03/05/13 :03/05/13	
Lube oil	**278**	mg/kg dry	50		237		16 *(50)*	03/05/13 :03/05/13	
Surrogate									
2-Fluorobiphenyl	*23.9*		mg/kg dry	*23.1*		103		03/05/13 :03/05/13	
Duplicate (B13C089-DUP2)			**Source: W13B209-03**						
Diesel	ND	mg/kg dry	25		ND		*(50)*	03/05/13 :03/05/13	
Lube oil	**121**	mg/kg dry	50		123		2 *(50)*	03/05/13 :03/05/13	
Surrogate									
2-Fluorobiphenyl	*20.2*		mg/kg dry	*23.9*		84		03/05/13 :03/05/13	
Hydrocarbon Scan by GC-FID - Batch B13C057									
Blank (B13C057-BLK1)									
Gasoline	ND	mg/kg wet	20					03/04/13 :03/04/13	
Diesel	ND	mg/kg wet	50					03/04/13 :03/04/13	
Lube oil	ND	mg/kg wet	100					03/04/13 :03/04/13	
Surrogate									
2-Fluorobiphenyl	*10.4*		mg/kg wet	*10.0*		104		03/04/13 :03/04/13	
Duplicate (B13C057-DUP1)			**Source: W13C018-01**						
Gasoline	**DET**	mg/kg dry	20		DET		*(200)*	03/04/13 :03/04/13	F4
Diesel	**DET**	mg/kg dry	50		DET		*(200)*	03/04/13 :03/04/13	
Lube oil	**DET**	mg/kg dry	100		DET		*(200)*	03/04/13 :03/04/13	
Surrogate									
2-Fluorobiphenyl	*60.6*		mg/kg dry	*12.9*		469		03/04/13 :03/04/13	*SU7*

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C018**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C071									
Blank (B13C071-BLK1)									
Acenaphthene	ND	ug/kg wet	20					03/05/13 :03/05/13	
Acenaphthylene	ND	ug/kg wet	20					03/05/13 :03/05/13	
Anthracene	ND	ug/kg wet	20					03/05/13 :03/05/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Chrysene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Fluoranthene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Fluorene	ND	ug/kg wet	20					03/05/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Naphthalene	ND	ug/kg wet	40					03/05/13 :03/05/13	
Phenanthrene	ND	ug/kg wet	20					03/05/13 :03/05/13	
Pyrene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*77*		ug/kg wet	*100*		77		03/05/13 :03/05/13	
Fluoranthene-d10	*88*		ug/kg wet	*100*		88		03/05/13 :03/05/13	
LCS (B13C071-BS1)									
Acenaphthene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/05/13 :03/05/13	
Acenaphthylene	**36.8**	ug/kg wet	20	40.0		92 *(50-150)*		03/05/13 :03/05/13	
Anthracene	**36.0**	ug/kg wet	20	40.0		90 *(50-150)*		03/05/13 :03/05/13	
Benzo(a)anthracene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/05/13 :03/05/13	
Benzo(a)pyrene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/05/13 :03/05/13	
Benzo(b)fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/05/13 :03/05/13	
Benzo(g,h,i)perylene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/05/13 :03/05/13	
Benzo(k)fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/05/13 :03/05/13	
Chrysene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/05/13 :03/05/13	
Dibenzo(a,h)anthracene	**34.4**	ug/kg wet	10	40.0		86 *(50-150)*		03/05/13 :03/05/13	
Fluoranthene	**37.2**	ug/kg wet	10	40.0		93 *(50-150)*		03/05/13 :03/05/13	
Fluorene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/05/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	**36.0**	ug/kg wet	10	40.0		90 *(50-150)*		03/05/13 :03/05/13	
Naphthalene	**30.8**	ug/kg wet	20	40.0		77 *(50-150)*		03/05/13 :03/05/13	
Phenanthrene	**36.8**	ug/kg wet	20	40.0		92 *(50-150)*		03/05/13 :03/05/13	
Pyrene	**37.2**	ug/kg wet	10	40.0		93 *(50-150)*		03/05/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*77*		ug/kg wet	*100*		*77 (31.9-133)*		03/05/13 :03/05/13	
Fluoranthene-d10	*87*		ug/kg wet	*100*		*87 (64.7-154)*		03/05/13 :03/05/13	
Duplicate (B13C071-DUP1)			**Source: W13C018-02**						

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C018**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C071									
Duplicate (B13C071-DUP1)			**Source: W13C018-02**						
Acenaphthene	ND	ug/kg dry	20		ND		(50)	03/05/13 :03/05/13	
Acenaphthylene	ND	ug/kg dry	20		ND		(50)	03/05/13 :03/05/13	
Anthracene	ND	ug/kg dry	20		ND		(50)	03/05/13 :03/05/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Chrysene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Fluoranthene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Fluorene	ND	ug/kg dry	20		ND		(50)	03/05/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Naphthalene	ND	ug/kg dry	40		ND		(50)	03/05/13 :03/05/13	
Phenanthrene	ND	ug/kg dry	20		ND		(50)	03/05/13 :03/05/13	
Pyrene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*100*		ug/kg dry	*132*		77		03/05/13 :03/05/13	
Fluoranthene-d10	*110*		ug/kg dry	*132*		83		03/05/13 :03/05/13	
Matrix Spike (B13C071-MS1)			**Source: W13C018-02**						
Acenaphthene	**120**	ug/kg dry	20	132	ND	91 *(50-150)*		03/05/13 :03/05/13	
Acenaphthylene	**130**	ug/kg dry	20	132	ND	98 *(50-150)*		03/05/13 :03/05/13	
Anthracene	**138**	ug/kg dry	20	132	ND	104 *(50-150)*		03/05/13 :03/05/13	
Benzo(a)anthracene	**130**	ug/kg dry	10	132	ND	98 *(50-150)*		03/05/13 :03/05/13	
Benzo(a)pyrene	**131**	ug/kg dry	10	132	ND	99 *(50-150)*		03/05/13 :03/05/13	
Benzo(b)fluoranthene	**121**	ug/kg dry	10	132	ND	92 *(50-150)*		03/05/13 :03/05/13	
Benzo(g,h,i)perylene	**140**	ug/kg dry	10	132	ND	106 *(50-150)*		03/05/13 :03/05/13	
Benzo(k)fluoranthene	**121**	ug/kg dry	10	132	ND	92 *(50-150)*		03/05/13 :03/05/13	
Chrysene	**124**	ug/kg dry	10	132	ND	94 *(50-150)*		03/05/13 :03/05/13	
Dibenzo(a,h)anthracene	**135**	ug/kg dry	10	132	ND	102 *(50-150)*		03/05/13 :03/05/13	
Fluoranthene	**131**	ug/kg dry	10	132	ND	100 *(50-150)*		03/05/13 :03/05/13	
Fluorene	**125**	ug/kg dry	20	132	ND	95 *(50-150)*		03/05/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	**138**	ug/kg dry	10	132	ND	105 *(50-150)*		03/05/13 :03/05/13	
Naphthalene	**125**	ug/kg dry	40	132	ND	95 *(50-150)*		03/05/13 :03/05/13	
Phenanthrene	**129**	ug/kg dry	20	132	ND	98 *(50-150)*		03/05/13 :03/05/13	
Pyrene	**130**	ug/kg dry	10	132	ND	98 *(50-150)*		03/05/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*110*		ug/kg dry	*132*		81 *(31.9-133)*		03/05/13 :03/05/13	
Fluoranthene-d10	*130*		ug/kg dry	*132*		96 *(64.7-154)*		03/05/13 :03/05/13	

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C018**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs) - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
PCB Aroclors by GC-ECD - Batch B13C058									
Blank (B13C058-BLK1)									
Aroclor 1016/1242	ND	ug/kg wet	10.0					03/04/13 :03/05/13	
Aroclor 1221	ND	ug/kg wet	20.0					03/04/13 :03/05/13	
Aroclor 1232	ND	ug/kg wet	10.0					03/04/13 :03/05/13	
Aroclor 1248	ND	ug/kg wet	10.0					03/04/13 :03/05/13	
Aroclor 1254	ND	ug/kg wet	10.0					03/04/13 :03/05/13	
Aroclor 1260	ND	ug/kg wet	10.0					03/04/13 :03/05/13	
Aroclor 1262	ND	ug/kg wet	10.0					03/04/13 :03/05/13	
Aroclor 1268	ND	ug/kg wet	10.0					03/04/13 :03/05/13	
Surrogate									
Tetrachloro-m-xylene	*11.3*		ug/kg wet	*10.0*		113		03/04/13 :03/05/13	
Decachlorobiphenyl	*12.3*		ug/kg wet	*10.0*		123		03/04/13 :03/05/13	
Blank (B13C058-BLK2)									
Aroclor 1016/1242	ND	ug/kg wet	10.0					03/04/13 :03/05/13	
Aroclor 1221	ND	ug/kg wet	20.0					03/04/13 :03/05/13	
Aroclor 1232	ND	ug/kg wet	10.0					03/04/13 :03/05/13	
Aroclor 1248	ND	ug/kg wet	10.0					03/04/13 :03/05/13	
Aroclor 1254	ND	ug/kg wet	10.0					03/04/13 :03/05/13	
Aroclor 1260	ND	ug/kg wet	10.0					03/04/13 :03/05/13	
Aroclor 1262	ND	ug/kg wet	10.0					03/04/13 :03/05/13	
Aroclor 1268	ND	ug/kg wet	10.0					03/04/13 :03/05/13	
Surrogate									
Tetrachloro-m-xylene	*10.4*		ug/kg wet	*10.0*		104		03/04/13 :03/05/13	
Decachlorobiphenyl	*12.3*		ug/kg wet	*10.0*		123		03/04/13 :03/05/13	
LCS (B13C058-BS1)									
Aroclor 1016/1242	**121.1**	ug/kg wet	10.0	100		121 *(78.7-127)*		03/04/13 :03/05/13	
Aroclor 1260	**106.4**	ug/kg wet	10.0	100		106 *(80.9-139)*		03/04/13 :03/05/13	
Surrogate									
Tetrachloro-m-xylene	*11.3*		ug/kg wet	*10.0*		113 *(60.3-141)*		03/04/13 :03/05/13	
Decachlorobiphenyl	*13.0*		ug/kg wet	*10.0*		130 *(48.6-164)*		03/04/13 :03/05/13	
LCS (B13C058-BS2)									
Aroclor 1016/1242	**99.08**	ug/kg wet	10.0	100		99 *(78.7-127)*		03/04/13 :03/05/13	
Aroclor 1260	**107.1**	ug/kg wet	10.0	100		107 *(80.9-139)*		03/04/13 :03/05/13	
Surrogate									
Tetrachloro-m-xylene	*9.28*		ug/kg wet	*10.0*		93 *(60.3-141)*		03/04/13 :03/05/13	
Decachlorobiphenyl	*12.0*		ug/kg wet	*10.0*		120 *(48.6-164)*		03/04/13 :03/05/13	
Matrix Spike (B13C058-MS1)			**Source: W13C018-01**						
Aroclor 1016/1242	**91.41**	ug/kg dry	10.0	127	ND	72 *(50.8-144)*		03/04/13 :03/05/13	M16
Aroclor 1260	**86.73**	ug/kg dry	10.0	127	ND	68 *(33-158)*		03/04/13 :03/05/13	M16
Surrogate									
Tetrachloro-m-xylene	*8.91*		ug/kg dry	*12.7*		70 *(60.3-141)*		03/04/13 :03/05/13	
Decachlorobiphenyl	*12.4*		ug/kg dry	*12.7*		98 *(48.6-164)*		03/04/13 :03/05/13	

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C018**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs) - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
PCB Aroclors by GC-ECD - Batch B13C058									
Matrix Spike Dup (B13C058-MSD1)			**Source: W13C018-01**						
Aroclor 1016/1242	**114.2**	ug/kg dry	10.0	126	ND	90 *(50.8-144)*	22 *(20)*	03/04/13 :03/05/13	M16
Aroclor 1260	**118.4**	ug/kg dry	10.0	126	ND	94 *(33-158)*	31 *(20)*	03/04/13 :03/05/13	M16
Surrogate									
Tetrachloro-m-xylene	*11.4*		ug/kg dry	*12.6*		90 *(60.3-141)*		03/04/13 :03/05/13	
Decachlorobiphenyl	*17.0*		ug/kg dry	*12.6*		134 *(48.6-164)*		03/04/13 :03/05/13	

Qualifiers

D4	Reporting limit is raised for this analyte due to non-target matrix interference.
F4	Result for gasoline is primarily overlap from diesel-range hydrocarbons.
M15	The result is an estimate due to chromatographic interference that affected quantitation.
M16	MS/MSD RPD is high for this analyte; recoveries are acceptable.
SU7	High surrogate recovery is due to co-eluting matrix interferent.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference

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Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
Sample Custodian: (503) 823-5696
General Lab: (503) 823-5681

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 3-4-13

Lab Work Order #: W13C018

Collected By: K

Client Name: **Coordinated Site Analysis**

Project Number (if applicable):

Project Name: KENTON BRASS FOUDRY

Contact Name: TARY MEYER / GRAEME TAYLOR

Requested Analyses

Follow-up Tests:
- ☒ Run TCLP metals if limit exceeded
- ☐ Run SPLP if limit exceeded (indicate which analyses in Remarks field)
- ☒ Run NWTPH-Dx and NWTPH-Gx if detects on NWTPH-HCID
- ☒ Run PAHs if detects on NWTPH-Dx
- ☒ Run VOCs if detects on NWTPH-Gx
- ☐ Run TOC if detects on NWTPH-HCID

Turn-Around-Time Request:
- ☐ Standard (10 business days)
- ☒ Rush (5 business days) PCB's ASAP per D.L.
- ☐ Other:

Lab Number	Location ID	Sample Date	Sample Time	Grab or Comp	Sample Matrix	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	PCB Aroclors (low-level)	PAHs	Priority Pollutant 13 Metals	RCRA 8 Metals	Total Metals (As, Cd, Cr, Cu, Pb, Hg, Zn)	Total Metals (Cd, Cr, Pb)	VOCs	TOC	RCRA 8 + Cu & Zn				HOLD	# of Containers	Remarks
01	PFE @69"	3/4/13	9:30	G	S	X			X			X										3	
02	PFW @69"	↓	9:32	G	S	X			X			X										3	
03	TANK CONTENTS	↓	9:40	G	S	X			X								X					5	

Relinquished By:	Date:	Received By:	Date:	Relinquished By:	Date:	Received By:	Date:
Signature: [signature]	3/4/13	Signature: [signature]	3/4/13	Signature:		Signature:	
Printed Name: Jim Cooper	Time: 10:54	Printed Name: Mackenzie [illegible]	Time: 1054	Printed Name:	Time:	Printed Name:	Time:

CSA Element COC

Page _____ of _____

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C039**	Project Mgr:	John O'Donovan
Received:	3/5/13 14:34	WQDB #:	Janus825
Submitted By:	CSA/Consultant		

Sample	Laboratory ID	Matrix	Type	Sample Collection Date Start	Sample Collection Date End	Qualifier
SW-W-4	W13C039-01	Soil	Composite	03/05/13 09:00	03/05/13 09:00	
03052013_CS	W13C039-02	Soil	Composite	03/05/13 09:10	03/05/13 09:10	

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
General Chemistry									
Total Solids									
SW-W-4 : W13C039-01									
Total solids	**74.1**	% W/W	0.01		B13C111	03/06/13	03/07/13	SM 2540G	
03052013_CS : W13C039-02									
Total solids	**75.9**	% W/W	0.01		B13C111	03/06/13	03/07/13	SM 2540G	
Total Metals									
Total Metals by ICPMS									
SW-W-4 : W13C039-01									
Arsenic	**7.86**	mg/kg dry	0.500	20	B13C208	03/12/13	03/14/13	EPA 6020	
Barium	**182**	mg/kg dry	0.100	20	B13C208	03/12/13	03/14/13	EPA 6020	
Cadmium	**0.207**	mg/kg dry	0.100	20	B13C208	03/12/13	03/14/13	EPA 6020	
Chromium	**28.4**	mg/kg dry	0.500	20	B13C208	03/12/13	03/14/13	EPA 6020	
Lead	**13.8**	mg/kg dry	0.100	20	B13C208	03/12/13	03/14/13	EPA 6020	
Mercury	**0.0284**	mg/kg dry	0.0100	20	B13C208	03/12/13	03/14/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C208	03/12/13	03/14/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C208	03/12/13	03/14/13	EPA 6020	
03052013_CS : W13C039-02									
Arsenic	**4.12**	mg/kg dry	0.500	20	B13C208	03/12/13	03/14/13	EPA 6020	
Barium	**153**	mg/kg dry	0.100	20	B13C208	03/12/13	03/14/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C208	03/12/13	03/14/13	EPA 6020	
Chromium	**21.3**	mg/kg dry	0.500	20	B13C208	03/12/13	03/14/13	EPA 6020	
Lead	**8.29**	mg/kg dry	0.100	20	B13C208	03/12/13	03/14/13	EPA 6020	
Mercury	**0.0159**	mg/kg dry	0.0100	20	B13C208	03/12/13	03/14/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C208	03/12/13	03/14/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C208	03/12/13	03/14/13	EPA 6020	

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C039**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

SW-W-4 : W13C039-01

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*110*	*119*	*88%*	*31.9-133*	*B13C071*	*03/05/13*	*03/05/13*	*EPA 8270-SIM*
Fluoranthene-d10	*110*	*119*	*96%*	*64.7-154*	*B13C071*	*03/05/13*	*03/05/13*	*EPA 8270-SIM*

03052013_CS : W13C039-02

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C071	03/05/13	03/05/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*110*	*123*	*90%*	*31.9-133*	*B13C071*	*03/05/13*	*03/05/13*	*EPA 8270-SIM*
Fluoranthene-d10	*120*	*123*	*98%*	*64.7-154*	*B13C071*	*03/05/13*	*03/05/13*	*EPA 8270-SIM*

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Jennifer Shackelford

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C039**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs)

PCB Aroclors by GC-ECD

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
SW-W-4 : W13C039-01									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1260	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*13.3*		*12.9*	*103%*	*60.3-141*	*B13C186*	*03/11/13*	*03/12/13*	*EPA 8082*
Decachlorobiphenyl	*14.7*		*12.9*	*114%*	*48.6-164*	*B13C186*	*03/11/13*	*03/12/13*	*EPA 8082*
03052013_CS : W13C039-02									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1260	**13.8**	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*13.9*		*12.8*	*109%*	*60.3-141*	*B13C186*	*03/11/13*	*03/12/13*	*EPA 8082*
Decachlorobiphenyl	*16.6*		*12.8*	*130%*	*48.6-164*	*B13C186*	*03/11/13*	*03/12/13*	*EPA 8082*

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Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C039**	Project Mgr:	John O'Donovan

Quality Control Report

General Chemistry - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Solids - Batch B13C111									
Duplicate (B13C111-DUP1)			**Source: W13C040-01**						
Total solids	**70.9**	% W/W	0.01		70.9		0.03 *(5)*	03/06/13 :03/07/13	
Duplicate (B13C111-DUP2)			**Source: W13C048-02**						
Total solids	**75.9**	% W/W	0.01		76.1		0.4 *(5)*	03/06/13 :03/07/13	

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C208									
Blank (B13C208-BLK1)									
Arsenic	ND	mg/kg wet	0.500					03/12/13 :03/14/13	
Barium	ND	mg/kg wet	0.100					03/12/13 :03/14/13	
Cadmium	ND	mg/kg wet	0.100					03/12/13 :03/14/13	
Chromium	ND	mg/kg wet	0.500					03/12/13 :03/14/13	
Lead	ND	mg/kg wet	0.100					03/12/13 :03/14/13	
Mercury	ND	mg/kg wet	0.0100					03/12/13 :03/14/13	
Selenium	ND	mg/kg wet	1.00					03/12/13 :03/14/13	
Silver	ND	mg/kg wet	0.100					03/12/13 :03/14/13	
Standard Reference Material (B13C208-SRM1)									
Arsenic	**83.8**	mg/kg wet	0.500	94.5		89 *(75-125)*		03/12/13 :03/14/13	
Barium	**197**	mg/kg wet	0.100	188		105 *(75-125)*		03/12/13 :03/14/13	
Cadmium	**62.9**	mg/kg wet	0.100	60.5		104 *(75-125)*		03/12/13 :03/14/13	
Chromium	**88.4**	mg/kg wet	0.500	82.2		108 *(75-125)*		03/12/13 :03/14/13	
Lead	**96.5**	mg/kg wet	0.100	91.8		105 *(75-125)*		03/12/13 :03/14/13	
Mercury	**3.566**	mg/kg wet	0.0100	3.69		97 *(75-125)*		03/12/13 :03/14/13	
Selenium	**93.8**	mg/kg wet	1.00	91.6		102 *(75-125)*		03/12/13 :03/14/13	
Silver	**37.6**	mg/kg wet	0.100	34.4		109 *(75-125)*		03/12/13 :03/14/13	
Duplicate (B13C208-DUP2)			**Source: W13C003-01**						
Arsenic	**4.36**	mg/kg dry	0.500		4.11		6 *(20)*	03/12/13 :03/14/13	
Barium	**301**	mg/kg dry	0.100		295		2 *(20)*	03/12/13 :03/14/13	
Cadmium	**3.01**	mg/kg dry	0.100		2.97		1 *(20)*	03/12/13 :03/14/13	
Chromium	**82.6**	mg/kg dry	0.500		77.8		6 *(20)*	03/12/13 :03/14/13	
Lead	**92.3**	mg/kg dry	0.100		87.4		5 *(20)*	03/12/13 :03/14/13	
Mercury	**0.9432**	mg/kg dry	0.0100		0.7930		17 *(20)*	03/12/13 :03/14/13	
Selenium	**6.21**	mg/kg dry	1.00		6.02		3 *(20)*	03/12/13 :03/14/13	
Silver	**11.0**	mg/kg dry	0.100		10.7		3 *(20)*	03/12/13 :03/14/13	
Matrix Spike (B13C208-MS1)			**Source: W13C003-01**						

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C039**	Project Mgr:	John O'Donovan

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C208									
Matrix Spike (B13C208-MS1)			**Source: W13C003-01**						
Arsenic	**65.4**	mg/kg dry	0.500	60.9	4.11	101 *(75-125)*		03/12/13 :03/14/13	
Barium	**1200**	mg/kg dry	0.100	914	295	99 *(75-125)*		03/12/13 :03/14/13	
Cadmium	**63.8**	mg/kg dry	0.100	60.9	2.97	100 *(75-125)*		03/12/13 :03/14/13	
Chromium	**261**	mg/kg dry	0.500	183	77.8	100 *(75-125)*		03/12/13 :03/14/13	
Lead	**391**	mg/kg dry	0.100	305	87.4	100 *(75-125)*		03/12/13 :03/14/13	
Mercury	**3.934**	mg/kg dry	0.0100	3.05	0.7930	103 *(75-125)*		03/12/13 :03/14/13	
Selenium	**323**	mg/kg dry	1.00	305	6.02	104 *(75-125)*		03/12/13 :03/14/13	
Silver	**73.2**	mg/kg dry	0.100	60.9	10.7	103 *(75-125)*		03/12/13 :03/14/13	

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C039**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C071									
Blank (B13C071-BLK1)									
Acenaphthene	ND	ug/kg wet	20					03/05/13 :03/05/13	
Acenaphthylene	ND	ug/kg wet	20					03/05/13 :03/05/13	
Anthracene	ND	ug/kg wet	20					03/05/13 :03/05/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Chrysene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Fluoranthene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Fluorene	ND	ug/kg wet	20					03/05/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Naphthalene	ND	ug/kg wet	40					03/05/13 :03/05/13	
Phenanthrene	ND	ug/kg wet	20					03/05/13 :03/05/13	
Pyrene	ND	ug/kg wet	10					03/05/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*77*		ug/kg wet	*100*		77		03/05/13 :03/05/13	
Fluoranthene-d10	*88*		ug/kg wet	*100*		88		03/05/13 :03/05/13	
LCS (B13C071-BS1)									
Acenaphthene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/05/13 :03/05/13	
Acenaphthylene	**36.8**	ug/kg wet	20	40.0		92 *(50-150)*		03/05/13 :03/05/13	
Anthracene	**36.0**	ug/kg wet	20	40.0		90 *(50-150)*		03/05/13 :03/05/13	
Benzo(a)anthracene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/05/13 :03/05/13	
Benzo(a)pyrene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/05/13 :03/05/13	
Benzo(b)fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/05/13 :03/05/13	
Benzo(g,h,i)perylene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/05/13 :03/05/13	
Benzo(k)fluoranthene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/05/13 :03/05/13	
Chrysene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/05/13 :03/05/13	
Dibenzo(a,h)anthracene	**34.4**	ug/kg wet	10	40.0		86 *(50-150)*		03/05/13 :03/05/13	
Fluoranthene	**37.2**	ug/kg wet	10	40.0		93 *(50-150)*		03/05/13 :03/05/13	
Fluorene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/05/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	**36.0**	ug/kg wet	10	40.0		90 *(50-150)*		03/05/13 :03/05/13	
Naphthalene	**30.8**	ug/kg wet	20	40.0		77 *(50-150)*		03/05/13 :03/05/13	
Phenanthrene	**36.8**	ug/kg wet	20	40.0		92 *(50-150)*		03/05/13 :03/05/13	
Pyrene	**37.2**	ug/kg wet	10	40.0		93 *(50-150)*		03/05/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*77*		ug/kg wet	*100*		77 *(31.9-133)*		03/05/13 :03/05/13	
Fluoranthene-d10	*87*		ug/kg wet	*100*		87 *(64.7-154)*		03/05/13 :03/05/13	
Duplicate (B13C071-DUP1)			**Source: W13C018-02**						

Reported: 03/25/13 10:28

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C039**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C071									
Duplicate (B13C071-DUP1)			**Source: W13C018-02**						
Acenaphthene	ND	ug/kg dry	20		ND		(50)	03/05/13 :03/05/13	
Acenaphthylene	ND	ug/kg dry	20		ND		(50)	03/05/13 :03/05/13	
Anthracene	ND	ug/kg dry	20		ND		(50)	03/05/13 :03/05/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Chrysene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Fluoranthene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Fluorene	ND	ug/kg dry	20		ND		(50)	03/05/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Naphthalene	ND	ug/kg dry	40		ND		(50)	03/05/13 :03/05/13	
Phenanthrene	ND	ug/kg dry	20		ND		(50)	03/05/13 :03/05/13	
Pyrene	ND	ug/kg dry	10		ND		(50)	03/05/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*100*		ug/kg dry	*132*		77		03/05/13 :03/05/13	
Fluoranthene-d10	*110*		ug/kg dry	*132*		83		03/05/13 :03/05/13	
Matrix Spike (B13C071-MS1)			**Source: W13C018-02**						
Acenaphthene	**120**	ug/kg dry	20	132	ND	91 *(50-150)*		03/05/13 :03/05/13	
Acenaphthylene	**130**	ug/kg dry	20	132	ND	98 *(50-150)*		03/05/13 :03/05/13	
Anthracene	**138**	ug/kg dry	20	132	ND	104 *(50-150)*		03/05/13 :03/05/13	
Benzo(a)anthracene	**130**	ug/kg dry	10	132	ND	98 *(50-150)*		03/05/13 :03/05/13	
Benzo(a)pyrene	**131**	ug/kg dry	10	132	ND	99 *(50-150)*		03/05/13 :03/05/13	
Benzo(b)fluoranthene	**121**	ug/kg dry	10	132	ND	92 *(50-150)*		03/05/13 :03/05/13	
Benzo(g,h,i)perylene	**140**	ug/kg dry	10	132	ND	106 *(50-150)*		03/05/13 :03/05/13	
Benzo(k)fluoranthene	**121**	ug/kg dry	10	132	ND	92 *(50-150)*		03/05/13 :03/05/13	
Chrysene	**124**	ug/kg dry	10	132	ND	94 *(50-150)*		03/05/13 :03/05/13	
Dibenzo(a,h)anthracene	**135**	ug/kg dry	10	132	ND	102 *(50-150)*		03/05/13 :03/05/13	
Fluoranthene	**131**	ug/kg dry	10	132	ND	100 *(50-150)*		03/05/13 :03/05/13	
Fluorene	**125**	ug/kg dry	20	132	ND	95 *(50-150)*		03/05/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	**138**	ug/kg dry	10	132	ND	105 *(50-150)*		03/05/13 :03/05/13	
Naphthalene	**125**	ug/kg dry	40	132	ND	95 *(50-150)*		03/05/13 :03/05/13	
Phenanthrene	**129**	ug/kg dry	20	132	ND	98 *(50-150)*		03/05/13 :03/05/13	
Pyrene	**130**	ug/kg dry	10	132	ND	98 *(50-150)*		03/05/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*110*		ug/kg dry	*132*		81 *(31.9-133)*		03/05/13 :03/05/13	
Fluoranthene-d10	*130*		ug/kg dry	*132*		96 *(64.7-154)*		03/05/13 :03/05/13	

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C039**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs) - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
PCB Aroclors by GC-ECD - Batch B13C186									
Blank (B13C186-BLK1)									
Aroclor 1016/1242	ND	ug/kg wet	10.0					03/11/13 :03/12/13	
Aroclor 1221	ND	ug/kg wet	20.0					03/11/13 :03/12/13	
Aroclor 1232	ND	ug/kg wet	10.0					03/11/13 :03/12/13	
Aroclor 1248	ND	ug/kg wet	10.0					03/11/13 :03/12/13	
Aroclor 1254	ND	ug/kg wet	10.0					03/11/13 :03/12/13	
Aroclor 1260	ND	ug/kg wet	10.0					03/11/13 :03/12/13	
Aroclor 1262	ND	ug/kg wet	10.0					03/11/13 :03/12/13	
Aroclor 1268	ND	ug/kg wet	10.0					03/11/13 :03/12/13	
Surrogate									
Tetrachloro-m-xylene	*10.9*		ug/kg wet	*10.0*		109		03/11/13 :03/12/13	
Decachlorobiphenyl	*11.9*		ug/kg wet	*10.0*		119		03/11/13 :03/12/13	
LCS (B13C186-BS1)									
Aroclor 1016/1242	**107.8**	ug/kg wet	10.0	100		108 *(78.7-127)*		03/11/13 :03/12/13	
Aroclor 1260	**97.53**	ug/kg wet	10.0	100		98 *(80.9-139)*		03/11/13 :03/12/13	
Surrogate									
Tetrachloro-m-xylene	*10.5*		ug/kg wet	*10.0*		105 *(60.3-141)*		03/11/13 :03/12/13	
Decachlorobiphenyl	*11.6*		ug/kg wet	*10.0*		116 *(48.6-164)*		03/11/13 :03/12/13	
Matrix Spike (B13C186-MS1)			**Source: W13C083-01**						
Aroclor 1016/1242	**126.0**	ug/kg dry	100	112	ND	113 *(50.8-144)*		03/11/13 :03/12/13	
Aroclor 1260	**506.8**	ug/kg dry	100	112	ND	453 *(33-158)*		03/11/13 :03/12/13	M18, Z0
Surrogate									
Tetrachloro-m-xylene	*10.9*		ug/kg dry	*11.2*		98 *(60.3-141)*		03/11/13 :03/12/13	
Decachlorobiphenyl	*15.1*		ug/kg dry	*11.2*		135 *(48.6-164)*		03/11/13 :03/12/13	
Matrix Spike Dup (B13C186-MSD1)			**Source: W13C083-01**						
Aroclor 1016/1242	**192.6**	ug/kg dry	100	114	ND	169 *(50.8-144)*	42 *(20)*	03/11/13 :03/12/13	M18
Aroclor 1260	**430.4**	ug/kg dry	100	114	ND	377 *(33-158)*	16 *(20)*	03/11/13 :03/12/13	M18, Z0
Surrogate									
Tetrachloro-m-xylene	*16.2*		ug/kg dry	*11.4*		142 *(60.3-141)*		03/11/13 :03/12/13	*SU5*
Decachlorobiphenyl	*24.0*		ug/kg dry	*11.4*		211 *(48.6-164)*		03/11/13 :03/12/13	*SU5*

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Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C039**	Project Mgr:	John O'Donovan

Qualifiers

M18	Matrix spike recovery(ies) could not be determined due to required sample dilution.
SU5	Surrogate recovery could not be determined due to required dilution of the sample extract.
Z0	Hig matrix spike recovery is due to low spike amount and a high level of Aroclor 1262 that is not accounted for in the % recovery calculation.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference

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Jennifer Shackelford, Laboratory Coordinator QA/QC

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
Sample Custodian: (503) 823-5696
General Lab: (503) 823-5681

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 3-5-13

Work Order #: W13C039

Collected By: G. Taylor
L. Farr

Client Name:

Project Name: Kenton Brass Foundry

Requested Analyses

	Lab Number	Sample ID	Sample Date	Sample Time	Grab or Comp	Sample Matrix	PCB Aroclors	PAHs 8270 SIM	RCRA 8 metals	# of containers	Comments
ABT 4ST	01	SW-W-4	3-5-13	900	C	S	X	X	X	4	
	02	03052013_CS	↓	910	C	S	X	X	X	4	

Relinquished By:	Date:	Received By:	Date:	Relinquished By:	Date:	Received By:	Date:
Signature:	3/5/13	Signature:	3/5/13	Signature:		Signature:	
Printed Name: Leonard Farr	Time: 14:34	Printed Name: Mackenzie Zick	Time: 1434	Printed Name:	Time:	Printed Name:	Time:

CoC_Generic_new.xls

Page _____ of _____

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C040**	Project Mgr:	John O'Donovan
Received:	3/5/13 15:05	WQDB #:	Janus825
Submitted By:	CSA/Consultant		

Sample	Laboratory ID	Matrix	Type	Sample Collection Date Start	Sample Collection Date End	Qualifier
PFE-9'	W13C040-01	Soil	Grab	03/05/13 11:20	03/05/13 11:20	
PFW-9'	W13C040-02	Soil	Grab	03/05/13 11:20	03/05/13 11:20	
PWW-7'	W13C040-03	Soil	Grab	03/05/13 11:20	03/05/13 11:20	
PWE-7'	W13C040-04	Soil	Grab	03/05/13 11:20	03/05/13 11:20	
PWN-7'	W13C040-05	Soil	Grab	03/05/13 11:20	03/05/13 11:20	
PWS-7'	W13C040-06	Soil	Grab	03/05/13 11:20	03/05/13 11:20	
PV-19'	W13C040-07	Soil	Grab	03/05/13 11:20	03/05/13 11:20	

General Chemistry

Total Solids

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
PFE-9' : W13C040-01									
Total solids	**70.9**	% W/W	0.01		B13C111	03/06/13	03/07/13	SM 2540G	
PFW-9' : W13C040-02									
Total solids	**70.3**	% W/W	0.01		B13C111	03/06/13	03/07/13	SM 2540G	
PWW-7' : W13C040-03									
Total solids	**72.1**	% W/W	0.01		B13C111	03/06/13	03/07/13	SM 2540G	
PWE-7' : W13C040-04									
Total solids	**70.1**	% W/W	0.01		B13C111	03/06/13	03/07/13	SM 2540G	
PWN-7' : W13C040-05									
Total solids	**73.7**	% W/W	0.01		B13C111	03/06/13	03/07/13	SM 2540G	
PWS-7' : W13C040-06									
Total solids	**73.8**	% W/W	0.01		B13C111	03/06/13	03/07/13	SM 2540G	
PV-19' : W13C040-07									
Total solids	**73.8**	% W/W	0.01		B13C111	03/06/13	03/07/13	SM 2540G	

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C040**	Project Mgr:	John O'Donovan

Fuels

Diesel/Oil Hydrocarbons by GC-FID

Analyte	Result	Units		MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
PFE-9' : W13C040-01										
Diesel	**22000**	mg/kg dry		750	30	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		1500	30	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***					
2-Fluorobiphenyl	*246*		*24.9*	*988%*	*50-150*	*B13C130*	*03/07/13*	*03/07/13*	*NWTPH-Dx*	*SU7*
PFW-9' : W13C040-02										
Diesel	**870**	mg/kg dry		250	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		500	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***					
2-Fluorobiphenyl	*34.7*		*25.5*	*136%*	*50-150*	*B13C130*	*03/07/13*	*03/07/13*	*NWTPH-Dx*	
PWW-7' : W13C040-03										
Diesel	**29000**	mg/kg dry		1200	50	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		2500	50	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***					
2-Fluorobiphenyl	*355*		*24.4*	*1450%*	*50-150*	*B13C130*	*03/07/13*	*03/07/13*	*NWTPH-Dx*	*SU7*
PWE-7' : W13C040-04										
Diesel	**290**	mg/kg dry		25	1	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		50	1	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***					
2-Fluorobiphenyl	*31.0*		*26.2*	*118%*	*50-150*	*B13C130*	*03/07/13*	*03/07/13*	*NWTPH-Dx*	
PWN-7' : W13C040-05										
Diesel	**2400**	mg/kg dry		250	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		500	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***					
2-Fluorobiphenyl	*49.7*		*23.5*	*211%*	*50-150*	*B13C130*	*03/07/13*	*03/07/13*	*NWTPH-Dx*	*SU7*
PWS-7' : W13C040-06										
Diesel	**4900**	mg/kg dry		250	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		500	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***					
2-Fluorobiphenyl	*82.9*		*23.7*	*349%*	*50-150*	*B13C130*	*03/07/13*	*03/07/13*	*NWTPH-Dx*	*SU7*
PV-19' : W13C040-07										
Diesel	**1800**	mg/kg dry		250	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		500	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***					
2-Fluorobiphenyl	*34.7*		*25.5*	*136%*	*50-150*	*B13C130*	*03/07/13*	*03/07/13*	*NWTPH-Dx*	

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C040**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
PFE-9' : W13C040-01									
Acenaphthene	**5400**	ug/kg dry	200	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	6000	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Benzo(a)anthracene	**37**	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	**110**	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	500	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Fluorene	**8700**	ug/kg dry	200	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	**16000**	ug/kg dry	400	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	**30000**	ug/kg dry	600	300	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	**1200**	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***					
2-Methylnaphthalene-d10	*170*	*124*	*139%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	*SU7*
Fluoranthene-d10	*210*	*124*	*170%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	*SU7*
PFW-9' : W13C040-02									
Acenaphthene	**250**	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	400	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Fluorene	**440**	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	**1000**	ug/kg dry	40	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	**1400**	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	**52**	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***					
2-Methylnaphthalene-d10	*94*	*127*	*74%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	
Fluoranthene-d10	*110*	*127*	*83%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	
PWW-7' : W13C040-03									

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C040**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

PWW-7' : W13C040-03

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	**8200**	ug/kg dry	200	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	10000	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Benzo(a)anthracene	**21**	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	**51**	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	500	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Fluorene	**14000**	ug/kg dry	200	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	**10000**	ug/kg dry	400	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	**46000**	ug/kg dry	600	300	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	**1200**	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***					
2-Methylnaphthalene-d10	*140*	*122*	*116%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	
Fluoranthene-d10	*260*	*122*	*213%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	*SU7*

PWE-7' : W13C040-04

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	100	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluorene	**87**	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	**270**	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	**14**	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***					
2-Methylnaphthalene-d10	*100*	*131*	*78%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	
Fluoranthene-d10	*120*	*131*	*89%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	

PWN-7' : W13C040-05

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C040**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
PWN-7' : W13C040-05									
Acenaphthene	**650**	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	1000	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	50	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Fluorene	**1200**	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	**540**	ug/kg dry	40	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	**4600**	ug/kg dry	200	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	**150**	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***					
2-Methylnaphthalene-d10	*120*	*118*	*104%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	
Fluoranthene-d10	*110*	*118*	*97%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	
PWS-7' : W13C040-06									
Acenaphthene	**230**	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	1500	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	**28**	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	100	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Fluorene	**680**	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	**180**	ug/kg dry	40	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	**3900**	ug/kg dry	200	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	**380**	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***					
2-Methylnaphthalene-d10	*220*	*119*	*188%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	*SU7*
Fluoranthene-d10	*120*	*119*	*101%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	
PV-19' : W13C040-07									

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C040**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

PV-19' : W13C040-07

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	**410**	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	500	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	**17**	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	50	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Fluorene	**790**	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	**1500**	ug/kg dry	40	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	**2800**	ug/kg dry	200	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	**140**	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*110*	*127*	*83%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*
Fluoranthene-d10	*120*	*127*	*92%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C040**	Project Mgr:	John O'Donovan

Quality Control Report

General Chemistry - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Solids - Batch B13C111									
Duplicate (B13C111-DUP1)			**Source: W13C040-01**						
Total solids	**70.9**	% W/W	0.01		70.9		0.03 *(5)*	03/06/13 :03/07/13	
Duplicate (B13C111-DUP2)			**Source: W13C048-02**						
Total solids	**75.9**	% W/W	0.01		76.1		0.4 *(5)*	03/06/13 :03/07/13	

Fuels - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Diesel/Oil Hydrocarbons by GC-FID - Batch B13C130									
Blank (B13C130-BLK1)									
Diesel	ND	mg/kg wet	25					03/07/13 :03/07/13	
Lube oil	ND	mg/kg wet	50					03/07/13 :03/07/13	
Surrogate									
2-Fluorobiphenyl	*20.9*		mg/kg wet	*20.0*		104		03/07/13 :03/07/13	
LCS (B13C130-BS1)									
Diesel	**85.4**	mg/kg wet	25	100		85 *(50-150)*		03/07/13 :03/07/13	
Lube oil	**102**	mg/kg wet	50	100		102 *(50-150)*		03/07/13 :03/07/13	
Surrogate									
2-Fluorobiphenyl	*20.8*		mg/kg wet	*20.0*		104 *(50-150)*		03/07/13 :03/07/13	
Duplicate (B13C130-DUP1)			**Source: W13C040-02**						
Diesel	**694**	mg/kg dry	250		870		23 *(50)*	03/07/13 :03/07/13	
Lube oil	ND	mg/kg dry	500		ND		*(50)*	03/07/13 :03/07/13	
Surrogate									
2-Fluorobiphenyl	*35.6*		mg/kg dry	*27.2*		131		03/07/13 :03/07/13	

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C040**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C129									
Blank (B13C129-BLK1)									
Acenaphthene	ND	ug/kg wet	20					03/07/13 :03/13/13	
Acenaphthylene	ND	ug/kg wet	20					03/07/13 :03/13/13	
Anthracene	ND	ug/kg wet	20					03/07/13 :03/13/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Chrysene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Fluoranthene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Fluorene	ND	ug/kg wet	20					03/07/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Naphthalene	ND	ug/kg wet	40					03/07/13 :03/13/13	
Phenanthrene	ND	ug/kg wet	20					03/07/13 :03/13/13	
Pyrene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	*72*		ug/kg wet	*100*		72		03/07/13 :03/13/13	
Fluoranthene-d10	*82*		ug/kg wet	*100*		82		03/07/13 :03/13/13	
LCS (B13C129-BS1)									
Acenaphthene	**37.6**	ug/kg wet	20	40.0		94 *(50-150)*		03/07/13 :03/13/13	
Acenaphthylene	**39.6**	ug/kg wet	20	40.0		99 *(50-150)*		03/07/13 :03/13/13	
Anthracene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/07/13 :03/13/13	
Benzo(a)anthracene	**36.0**	ug/kg wet	10	40.0		90 *(50-150)*		03/07/13 :03/13/13	
Benzo(a)pyrene	**35.6**	ug/kg wet	10	40.0		89 *(50-150)*		03/07/13 :03/13/13	
Benzo(b)fluoranthene	**33.6**	ug/kg wet	10	40.0		84 *(50-150)*		03/07/13 :03/13/13	
Benzo(g,h,i)perylene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/07/13 :03/13/13	
Benzo(k)fluoranthene	**34.4**	ug/kg wet	10	40.0		86 *(50-150)*		03/07/13 :03/13/13	
Chrysene	**35.6**	ug/kg wet	10	40.0		89 *(50-150)*		03/07/13 :03/13/13	
Dibenzo(a,h)anthracene	**35.6**	ug/kg wet	10	40.0		89 *(50-150)*		03/07/13 :03/13/13	
Fluoranthene	**33.2**	ug/kg wet	10	40.0		83 *(50-150)*		03/07/13 :03/13/13	
Fluorene	**35.6**	ug/kg wet	20	40.0		89 *(50-150)*		03/07/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/07/13 :03/13/13	
Naphthalene	**33.6**	ug/kg wet	20	40.0		84 *(50-150)*		03/07/13 :03/13/13	
Phenanthrene	**36.8**	ug/kg wet	20	40.0		92 *(50-150)*		03/07/13 :03/13/13	
Pyrene	**39.2**	ug/kg wet	10	40.0		98 *(50-150)*		03/07/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	*76*		ug/kg wet	*100*		76 *(31.9-133)*		03/07/13 :03/13/13	
Fluoranthene-d10	*85*		ug/kg wet	*100*		85 *(64.7-154)*		03/07/13 :03/13/13	
Duplicate (B13C129-DUP1)			**Source: W13C040-02**						

Reported: 03/27/13 14:52

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C040**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C129									
Duplicate (B13C129-DUP1)			**Source: W13C040-02**						
Acenaphthene	**223**	ug/kg dry	20		246		9 *(50)*	03/07/13 :03/13/13	
Acenaphthylene	**82.1**	ug/kg dry	20		ND		*(50)*	03/07/13 :03/13/13	
Anthracene	**243**	ug/kg dry	20		ND		*(50)*	03/07/13 :03/13/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Chrysene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Fluoranthene	**12.0**	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Fluorene	**374**	ug/kg dry	20		443		17 *(50)*	03/07/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Naphthalene	**833**	ug/kg dry	40		1010		19 *(50)*	03/07/13 :03/13/13	
Phenanthrene	**1200**	ug/kg dry	20		1390		15 *(50)*	03/07/13 :03/13/13	
Pyrene	**46.8**	ug/kg dry	10		52.0		11 *(50)*	03/07/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	*120*		ug/kg dry	*136*		85		03/07/13 :03/13/13	
Fluoranthene-d10	*110*		ug/kg dry	*136*		81		03/07/13 :03/13/13	
Matrix Spike (B13C129-MS1)			**Source: W13C040-02**						
Acenaphthene	**401**	ug/kg dry	20	140	246	111 *(50-150)*		03/07/13 :03/13/13	
Acenaphthylene	**127**	ug/kg dry	20	140	ND	91 *(50-150)*		03/07/13 :03/13/13	
Anthracene	**393**	ug/kg dry	20	140	ND	281 *(50-150)*		03/07/13 :03/13/13	M0
Benzo(a)anthracene	**120**	ug/kg dry	10	140	ND	86 *(50-150)*		03/07/13 :03/13/13	
Benzo(a)pyrene	**116**	ug/kg dry	10	140	ND	83 *(50-150)*		03/07/13 :03/13/13	
Benzo(b)fluoranthene	**111**	ug/kg dry	10	140	ND	79 *(50-150)*		03/07/13 :03/13/13	
Benzo(g,h,i)perylene	**121**	ug/kg dry	10	140	ND	87 *(50-150)*		03/07/13 :03/13/13	
Benzo(k)fluoranthene	**112**	ug/kg dry	10	140	ND	80 *(50-150)*		03/07/13 :03/13/13	
Chrysene	**118**	ug/kg dry	10	140	ND	85 *(50-150)*		03/07/13 :03/13/13	
Dibenzo(a,h)anthracene	**120**	ug/kg dry	10	140	ND	86 *(50-150)*		03/07/13 :03/13/13	
Fluoranthene	**121**	ug/kg dry	10	140	ND	87 *(50-150)*		03/07/13 :03/13/13	
Fluorene	**560**	ug/kg dry	20	140	443	83 *(50-150)*		03/07/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	**120**	ug/kg dry	10	140	ND	86 *(50-150)*		03/07/13 :03/13/13	
Naphthalene	**1150**	ug/kg dry	40	140	1010	99 *(50-150)*		03/07/13 :03/13/13	
Phenanthrene	**1510**	ug/kg dry	20	140	1390	86 *(50-150)*		03/07/13 :03/13/13	
Pyrene	**181**	ug/kg dry	10	140	52.0	92 *(50-150)*		03/07/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	*130*		ug/kg dry	*140*		93 *(31.9-133)*		03/07/13 :03/13/13	
Fluoranthene-d10	*120*		ug/kg dry	*140*		84 *(64.7-154)*		03/07/13 :03/13/13	

Reported: 03/27/13 14:52

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C040**	Project Mgr:	John O'Donovan

Qualifiers

D4	Reporting limit is raised for this analyte due to non-target matrix interference.
M0	Matrix spike recovery was high due to matrix interference.
SU7	High surrogate recovery is due to co-eluting matrix interferent.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference

Reported: 03/27/13 14:52

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
Sample Custodian: (503) 823-5696
General Lab: (503) 823-5681

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 3/5/13
Work Order #: W13C040
Collected By:

Client Name: City of Portland CSA - Coordinated Site Analysis
Project Name: 13-8748 - Kenton Brass 030713 dn Foundry

Requested Analyses

Lab Number	Sample ID	Sample Date	Sample Time	Grab or Comp	Sample Matrix	Dx	PAH	per Taryn M.			~~BTEX~~ added 030713 per Taryn Meyer	change to VOC-8260 per T. Meyer 030713 dn											# of containers			
01	PFE-9'	03/05/13	11:20a	G	soil	✓	X				X												3			
02	PFW-9'			G	soil	✓	X				X															
03	PWW-7'			G	soil	✓	X																			
04	PWE-7'			G	soil	✓	X																			
05	PWN-7'			G	soil	✓	X																			
06	PWS-7'			G	soil	✓	X																			
07	PV-19'			G	soil	✓	X																			

Relinquished By:	Date:	Received By:	Date:	Relinquished By:	Date:	Received By:	Date:
Signature: Erick G	03/05/13	Signature: [signature]	3/5/13	Signature:		Signature:	
Printed Name: Erick Gomez	Time: 15:05	Printed Name: Mackenzie Tick	Time: 1505	Printed Name:	Time:	Printed Name:	Time:

per D. Linnetz 030713 dn

CoC_Generic_new.xls

Page ____ of ____

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Portland
9405 SW Nimbus Ave.
Beaverton, OR 97008
Tel: (503)906-9200

TestAmerica Job ID: 250-10423-1
TestAmerica Sample Delivery Group: W13C040
Client Project/Site: General

For:
City of Portland
Water Pollution Laboratory
6543 N. Burlington Ave
Portland, Oregon 97203

Attn: Jennifer Shackelford

Authorized for release by:
3/14/2013 1:43:25 PM
Erica Fot
Project Mgmt. Assistant
erica.fot@testamericainc.com

Designee for

Jay Willms
Project Manager I
jay.willms@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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Sample Summary

Client: City of Portland
Project/Site: General

TestAmerica Job ID: 250-10423-1
SDG: W13C040

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
250-10423-1	W13C040-01	Solid	03/05/13 11:20	03/07/13 13:10
250-10423-2	W13C040-02	Solid	03/05/13 11:20	03/07/13 13:10

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, 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: City of Portland
Project/Site: General

TestAmerica Job ID: 250-10423-1
SDG: W13C040

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: W13C040-01
Date Collected: 03/05/13 11:20
Date Received: 03/07/13 13:10

Lab Sample ID: 250-10423-1
Matrix: Solid
Percent Solids: 71.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		23000		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Benzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Bromobenzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Bromochloromethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Bromodichloromethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Bromoform	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Bromomethane	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
2-Butanone (MEK)	ND		9000		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
n-Butylbenzene	**5400**		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
sec-Butylbenzene	**2700**		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
tert-Butylbenzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Carbon disulfide	ND		9000		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Carbon tetrachloride	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Chlorobenzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Chloroethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Chloroform	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Chloromethane	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
2-Chlorotoluene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
4-Chlorotoluene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2-Dibromo-3-Chloropropane	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Dibromochloromethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2-Dibromoethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Dibromomethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2-Dichloroethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,3-Dichlorobenzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,4-Dichlorobenzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Dichlorodifluoromethane	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,1-Dichloroethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,1-Dichloroethene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
cis-1,2-Dichloroethene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
trans-1,2-Dichloroethene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2-Dichloropropane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,3-Dichloropropane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
2,2-Dichloropropane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,1-Dichloropropene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
cis-1,3-Dichloropropene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
trans-1,3-Dichloropropene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Ethylbenzene	**1100**		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Hexachlorobutadiene	ND		3600		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
2-Hexanone	ND		9000		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Isopropylbenzene	ND		1800		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
p-Isopropyltoluene	**2900**		1800		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
4-Methyl-2-pentanone (MIBK)	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Methyl tert-butyl ether	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Methylene Chloride	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Naphthalene	**17000**		1800		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
N-Propylbenzene	**3100**		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Styrene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,1,1,2-Tetrachloroethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5

Client Sample Results

Client: City of Portland
Project/Site: General

TestAmerica Job ID: 250-10423-1
SDG: W13C040

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: W13C040-01 — **Lab Sample ID: 250-10423-1**
Date Collected: 03/05/13 11:20 — **Matrix: Solid**
Date Received: 03/07/13 13:10 — **Percent Solids: 71.2**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Tetrachloroethene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Toluene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2,3-Trichlorobenzene	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2,4-Trichlorobenzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,1,1-Trichloroethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,1,2-Trichloroethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Trichloroethene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Trichlorofluoromethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2,3-Trichloropropane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2,4-Trimethylbenzene	**19000**		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,3,5-Trimethylbenzene	**7600**		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Vinyl chloride	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
m,p-Xylene	**2900**		1800		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
o-Xylene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2-Dichlorobenzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*	*03/11/13 11:15*	*03/12/13 17:08*	*5*
4-Bromofluorobenzene (Surr)	*103*		*75 - 125*	*03/11/13 11:15*	*03/12/13 17:08*	*5*
Dibromofluoromethane (Surr)	*99*		*75 - 125*	*03/11/13 11:15*	*03/12/13 17:08*	*5*
Toluene-d8 (Surr)	*95*		*75 - 125*	*03/11/13 11:15*	*03/12/13 17:08*	*5*

Client Sample ID: W13C040-02 — **Lab Sample ID: 250-10423-2**
Date Collected: 03/05/13 11:20 — **Matrix: Solid**
Date Received: 03/07/13 13:10 — **Percent Solids: 72.4**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		4300		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Benzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Bromobenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Bromochloromethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Bromodichloromethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Bromoform	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Bromomethane	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
2-Butanone (MEK)	ND		1700		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
n-Butylbenzene	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
sec-Butylbenzene	**200**		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
tert-Butylbenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Carbon disulfide	ND		1700		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Carbon tetrachloride	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Chlorobenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Chloroethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Chloroform	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Chloromethane	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
2-Chlorotoluene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
4-Chlorotoluene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2-Dibromo-3-Chloropropane	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Dibromochloromethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2-Dibromoethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Dibromomethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1

Client Sample Results

Client: City of Portland
Project/Site: General

TestAmerica Job ID: 250-10423-1
SDG: W13C040

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: W13C040-02
Date Collected: 03/05/13 11:20
Date Received: 03/07/13 13:10

Lab Sample ID: 250-10423-2
Matrix: Solid
Percent Solids: 72.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,3-Dichlorobenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,4-Dichlorobenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Dichlorodifluoromethane	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,1-Dichloroethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,1-Dichloroethene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
cis-1,2-Dichloroethene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
trans-1,2-Dichloroethene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2-Dichloropropane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,3-Dichloropropane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
2,2-Dichloropropane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,1-Dichloropropene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
cis-1,3-Dichloropropene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
trans-1,3-Dichloropropene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Ethylbenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Hexachlorobutadiene	ND		680		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
2-Hexanone	ND		1700		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Isopropylbenzene	ND		340		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
p-Isopropyltoluene	ND		340		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
4-Methyl-2-pentanone (MIBK)	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Methyl tert-butyl ether	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Methylene Chloride	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Naphthalene	**2300**		340		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
N-Propylbenzene	**190**		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Styrene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,1,1,2-Tetrachloroethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,1,2,2-Tetrachloroethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Tetrachloroethene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Toluene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2,3-Trichlorobenzene	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2,4-Trichlorobenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,1,1-Trichloroethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,1,2-Trichloroethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Trichloroethene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Trichlorofluoromethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2,3-Trichloropropane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2,4-Trimethylbenzene	**2000**		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,3,5-Trimethylbenzene	**780**		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Vinyl chloride	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
m,p-Xylene	ND		340		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
o-Xylene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2-Dichlorobenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 125*	*03/11/13 11:15*	*03/12/13 16:43*	*1*
4-Bromofluorobenzene (Surr)	*102*		*75 - 125*	*03/11/13 11:15*	*03/12/13 16:43*	*1*
Dibromofluoromethane (Surr)	*101*		*75 - 125*	*03/11/13 11:15*	*03/12/13 16:43*	*1*
Toluene-d8 (Surr)	*97*		*75 - 125*	*03/11/13 11:15*	*03/12/13 16:43*	*1*

Client Sample Results

Client: City of Portland
Project/Site: General

TestAmerica Job ID: 250-10423-1
SDG: W13C040

General Chemistry

Client Sample ID: W13C040-01
Date Collected: 03/05/13 11:20
Date Received: 03/07/13 13:10

Lab Sample ID: 250-10423-1
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	29		0.010		%			03/11/13 12:48	1
Percent Solids	71		0.010		%			03/11/13 12:48	1

Client Sample ID: W13C040-02
Date Collected: 03/05/13 11:20
Date Received: 03/07/13 13:10

Lab Sample ID: 250-10423-2
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	28		0.010		%			03/11/13 12:48	1
Percent Solids	72		0.010		%			03/11/13 12:48	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 250-14893/1-A
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 14893

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		2500		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Benzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Bromobenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Bromochloromethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Bromodichloromethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Bromoform	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Bromomethane	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
2-Butanone (MEK)	ND		980		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
n-Butylbenzene	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
sec-Butylbenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
tert-Butylbenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Carbon disulfide	ND		980		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Carbon tetrachloride	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Chlorobenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Chloroethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Chloroform	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Chloromethane	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
2-Chlorotoluene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
4-Chlorotoluene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2-Dibromo-3-Chloropropane	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Dibromochloromethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2-Dibromoethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Dibromomethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2-Dichloroethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,3-Dichlorobenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,4-Dichlorobenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Dichlorodifluoromethane	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,1-Dichloroethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,1-Dichloroethene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
cis-1,2-Dichloroethene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
trans-1,2-Dichloroethene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2-Dichloropropane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,3-Dichloropropane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
2,2-Dichloropropane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,1-Dichloropropene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
cis-1,3-Dichloropropene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
trans-1,3-Dichloropropene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Ethylbenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Hexachlorobutadiene	ND		390		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
2-Hexanone	ND		980		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Isopropylbenzene	ND		200		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
p-Isopropyltoluene	ND		200		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
4-Methyl-2-pentanone (MIBK)	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Methyl tert-butyl ether	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Methylene Chloride	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Naphthalene	ND		200		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
N-Propylbenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Styrene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 250-14893/1-A
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 14893

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,1,2,2-Tetrachloroethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Tetrachloroethene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Toluene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2,3-Trichlorobenzene	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2,4-Trichlorobenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,1,1-Trichloroethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,1,2-Trichloroethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Trichloroethene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Trichlorofluoromethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2,3-Trichloropropane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2,4-Trimethylbenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,3,5-Trimethylbenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Vinyl chloride	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
m,p-Xylene	ND		200		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
o-Xylene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2-Dichlorobenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*	*03/11/13 11:15*	*03/12/13 12:55*	*1*
4-Bromofluorobenzene (Surr)	*105*		*75 - 125*	*03/11/13 11:15*	*03/12/13 12:55*	*1*
Dibromofluoromethane (Surr)	*108*		*75 - 125*	*03/11/13 11:15*	*03/12/13 12:55*	*1*
Toluene-d8 (Surr)	*103*		*75 - 125*	*03/11/13 11:15*	*03/12/13 12:55*	*1*

Lab Sample ID: LCS 250-14893/2-A
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14893

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	9740	13400		ug/Kg		138	65 - 150
Benzene	1950	1770		ug/Kg		91	80 - 120
Bromobenzene	1950	2040		ug/Kg		105	80 - 120
Bromochloromethane	1950	2200		ug/Kg		113	80 - 120
Bromodichloromethane	1950	1960		ug/Kg		101	80 - 140
Bromoform	1950	2220		ug/Kg		114	75 - 150
Bromomethane	1950	2400		ug/Kg		123	65 - 130
2-Butanone (MEK)	9740	10600		ug/Kg		108	70 - 125
n-Butylbenzene	1950	1870		ug/Kg		96	80 - 150
sec-Butylbenzene	1950	2050		ug/Kg		105	80 - 135
tert-Butylbenzene	1950	1990		ug/Kg		102	80 - 130
Carbon disulfide	3890	3840		ug/Kg		99	65 - 140
Carbon tetrachloride	1950	1630		ug/Kg		84	70 - 130
Chlorobenzene	1950	1980		ug/Kg		102	80 - 125
Chloroethane	1950	2250		ug/Kg		115	75 - 125
Chloroform	1950	1900		ug/Kg		98	80 - 120
Chloromethane	1950	2150		ug/Kg		110	40 - 150
2-Chlorotoluene	1950	2010		ug/Kg		103	80 - 120
4-Chlorotoluene	1950	1980		ug/Kg		101	80 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 250-14893/2-A
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14893

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromo-3-Chloropropane	1950	2520		ug/Kg		129	60 - 130
Dibromochloromethane	1950	1900		ug/Kg		98	75 - 125
1,2-Dibromoethane	1950	1990		ug/Kg		102	80 - 125
Dibromomethane	1950	2050		ug/Kg		105	80 - 120
1,2-Dichloroethane	1950	1830		ug/Kg		94	80 - 120
1,3-Dichlorobenzene	1950	2090		ug/Kg		107	80 - 125
1,4-Dichlorobenzene	1950	2020		ug/Kg		104	75 - 120
Dichlorodifluoromethane	1950	2230		ug/Kg		115	75 - 120
1,1-Dichloroethane	1950	1970		ug/Kg		101	80 - 120
1,1-Dichloroethene	1950	2010		ug/Kg		103	75 - 125
cis-1,2-Dichloroethene	1950	2000		ug/Kg		103	75 - 125
trans-1,2-Dichloroethene	1950	1910		ug/Kg		98	75 - 125
1,2-Dichloropropane	1950	1880		ug/Kg		96	80 - 125
1,3-Dichloropropane	1950	1990		ug/Kg		102	75 - 130
2,2-Dichloropropane	1950	2410		ug/Kg		124	70 - 130
1,1-Dichloropropene	1950	1800		ug/Kg		92	80 - 125
cis-1,3-Dichloropropene	1950	1970		ug/Kg		101	80 - 125
trans-1,3-Dichloropropene	1950	2100		ug/Kg		108	65 - 145
Ethylbenzene	1950	1960		ug/Kg		101	80 - 125
Hexachlorobutadiene	1950	2010		ug/Kg		103	80 - 150
2-Hexanone	9740	11300		ug/Kg		116	55 - 120
Isopropylbenzene	1950	2000		ug/Kg		102	80 - 130
p-Isopropyltoluene	1950	2070		ug/Kg		107	80 - 120
4-Methyl-2-pentanone (MIBK)	9740	10400		ug/Kg		107	50 - 120
Methyl tert-butyl ether	1950	1840		ug/Kg		94	75 - 125
Methylene Chloride	1950	2090		ug/Kg		107	75 - 125
Naphthalene	1950	2080		ug/Kg		107	80 - 130
N-Propylbenzene	1950	2010		ug/Kg		103	80 - 120
Styrene	1950	2100		ug/Kg		108	80 - 125
1,1,1,2-Tetrachloroethane	1950	2030		ug/Kg		104	80 - 130
1,1,2,2-Tetrachloroethane	1950	2120		ug/Kg		109	70 - 135
Tetrachloroethene	1950	1940		ug/Kg		99	80 - 125
Toluene	1950	1880		ug/Kg		96	80 - 120
1,2,3-Trichlorobenzene	1950	2010		ug/Kg		103	80 - 145
1,2,4-Trichlorobenzene	1950	2010		ug/Kg		103	85 - 150
1,1,1-Trichloroethane	1950	1720		ug/Kg		88	80 - 125
1,1,2-Trichloroethane	1950	1970		ug/Kg		101	80 - 125
Trichloroethene	1950	1850		ug/Kg		95	80 - 125
Trichlorofluoromethane	1950	2200		ug/Kg		113	55 - 150
1,2,3-Trichloropropane	1950	2160		ug/Kg		111	65 - 125
1,2,4-Trimethylbenzene	1950	2070		ug/Kg		106	80 - 135
1,3,5-Trimethylbenzene	1950	2070		ug/Kg		106	80 - 135
Vinyl chloride	1950	2140		ug/Kg		110	10 - 140
m,p-Xylene	3890	4030		ug/Kg		104	80 - 120
o-Xylene	1950	1980		ug/Kg		101	80 - 125
1,2-Dichlorobenzene	1950	1940		ug/Kg		99	80 - 120

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 250-14893/2-A
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14893

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*
4-Bromofluorobenzene (Surr)	*107*		*75 - 125*
Dibromofluoromethane (Surr)	*108*		*75 - 125*
Toluene-d8 (Surr)	*103*		*75 - 125*

Lab Sample ID: 250-10447-A-1-B MS
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 14893

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	ND		10900	14000		ug/Kg	☼	128	60 - 145
Benzene	ND		2190	2080		ug/Kg	☼	95	80 - 125
Bromobenzene	ND		2190	2340		ug/Kg	☼	107	70 - 130
Bromochloromethane	ND		2190	2320		ug/Kg	☼	106	80 - 130
Bromodichloromethane	ND		2190	2250		ug/Kg	☼	103	80 - 135
Bromoform	ND		2190	2640		ug/Kg	☼	120	70 - 130
Bromomethane	ND		2190	2370		ug/Kg	☼	108	70 - 130
2-Butanone (MEK)	ND		10900	12400		ug/Kg	☼	113	70 - 145
n-Butylbenzene	ND		2190	2240		ug/Kg	☼	102	70 - 140
sec-Butylbenzene	ND		2190	2270		ug/Kg	☼	104	70 - 135
tert-Butylbenzene	ND		2190	2260		ug/Kg	☼	103	80 - 135
Carbon disulfide	ND		4380	3270		ug/Kg	☼	75	70 - 130
Carbon tetrachloride	ND		2190	1880		ug/Kg	☼	86	70 - 125
Chlorobenzene	ND		2190	2100		ug/Kg	☼	96	70 - 130
Chloroethane	ND		2190	2250		ug/Kg	☼	103	70 - 130
Chloroform	ND		2190	2100		ug/Kg	☼	96	80 - 125
Chloromethane	ND		2190	2030		ug/Kg	☼	93	40 - 150
2-Chlorotoluene	ND		2190	2200		ug/Kg	☼	100	80 - 125
4-Chlorotoluene	ND		2190	2170		ug/Kg	☼	99	70 - 130
1,2-Dibromo-3-Chloropropane	ND		2190	3030		ug/Kg	☼	138	60 - 145
Dibromochloromethane	ND		2190	2030		ug/Kg	☼	93	80 - 130
1,2-Dibromoethane	ND		2190	2290		ug/Kg	☼	104	80 - 130
Dibromomethane	ND		2190	2300		ug/Kg	☼	105	75 - 125
1,2-Dichloroethane	ND		2190	2170		ug/Kg	☼	99	75 - 120
1,3-Dichlorobenzene	ND		2190	2270		ug/Kg	☼	104	80 - 130
1,4-Dichlorobenzene	ND		2190	2260		ug/Kg	☼	103	80 - 120
Dichlorodifluoromethane	ND		2190	2160		ug/Kg	☼	99	65 - 135
1,1-Dichloroethane	ND		2190	2130		ug/Kg	☼	97	80 - 125
1,1-Dichloroethene	ND		2190	2170		ug/Kg	☼	99	70 - 130
cis-1,2-Dichloroethene	ND		2190	2200		ug/Kg	☼	100	75 - 120
trans-1,2-Dichloroethene	ND		2190	2150		ug/Kg	☼	98	70 - 130
1,2-Dichloropropane	ND		2190	2220		ug/Kg	☼	101	80 - 130
1,3-Dichloropropane	ND		2190	2240		ug/Kg	☼	102	75 - 130
2,2-Dichloropropane	ND		2190	2780		ug/Kg	☼	127	70 - 130
1,1-Dichloropropene	ND		2190	2110		ug/Kg	☼	96	80 - 125
cis-1,3-Dichloropropene	ND		2190	2260		ug/Kg	☼	103	80 - 130
trans-1,3-Dichloropropene	ND		2190	2450		ug/Kg	☼	112	70 - 145
Ethylbenzene	ND		2190	2300		ug/Kg	☼	105	80 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-10447-A-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 14951 — **Prep Batch: 14893**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hexachlorobutadiene	ND		2190	2350		ug/Kg	☼	107	45 - 150
2-Hexanone	ND		10900	12200		ug/Kg	☼	112	65 - 150
Isopropylbenzene	ND		2190	2280		ug/Kg	☼	104	80 - 130
p-Isopropyltoluene	ND		2190	2310		ug/Kg	☼	106	70 - 140
4-Methyl-2-pentanone (MIBK)	ND		10900	11300		ug/Kg	☼	103	60 - 150
Methyl tert-butyl ether	ND		2190	2150		ug/Kg	☼	98	70 - 130
Methylene Chloride	ND		2190	2100		ug/Kg	☼	96	70 - 120
Naphthalene	ND		2190	2560		ug/Kg	☼	117	70 - 130
N-Propylbenzene	ND		2190	2270		ug/Kg	☼	104	70 - 130
Styrene	ND		2190	2330		ug/Kg	☼	106	85 - 120
1,1,1,2-Tetrachloroethane	ND		2190	2220		ug/Kg	☼	101	80 - 130
1,1,2,2-Tetrachloroethane	ND		2190	2540		ug/Kg	☼	116	70 - 130
Tetrachloroethene	ND		2190	2130		ug/Kg	☼	97	75 - 140
Toluene	ND		2190	2060		ug/Kg	☼	94	70 - 130
1,2,3-Trichlorobenzene	ND		2190	2400		ug/Kg	☼	109	70 - 130
1,2,4-Trichlorobenzene	ND		2190	2340		ug/Kg	☼	107	70 - 150
1,1,1-Trichloroethane	ND		2190	2030		ug/Kg	☼	93	80 - 125
1,1,2-Trichloroethane	ND		2190	2230		ug/Kg	☼	102	80 - 130
Trichloroethene	ND		2190	2150		ug/Kg	☼	98	80 - 125
Trichlorofluoromethane	ND		2190	2190		ug/Kg	☼	100	70 - 130
1,2,3-Trichloropropane	ND		2190	2470		ug/Kg	☼	113	70 - 130
1,2,4-Trimethylbenzene	ND		2190	2260		ug/Kg	☼	103	70 - 130
1,3,5-Trimethylbenzene	ND		2190	2270		ug/Kg	☼	104	75 - 140
Vinyl chloride	ND		2190	1780		ug/Kg	☼	81	10 - 140
m,p-Xylene	ND		4380	4480		ug/Kg	☼	102	75 - 135
o-Xylene	ND		2190	2260		ug/Kg	☼	103	70 - 130
1,2-Dichlorobenzene	ND		2190	2290		ug/Kg	☼	105	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*
4-Bromofluorobenzene (Surr)	*102*		*75 - 125*
Dibromofluoromethane (Surr)	*100*		*75 - 125*
Toluene-d8 (Surr)	*97*		*75 - 125*

Lab Sample ID: 250-10447-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 14951 — **Prep Batch: 14893**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	ND		10900	14100		ug/Kg	☼	129	60 - 145	1	25
Benzene	ND		2190	2000		ug/Kg	☼	92	80 - 125	4	25
Bromobenzene	ND		2190	2270		ug/Kg	☼	104	70 - 130	3	25
Bromochloromethane	ND		2190	2290		ug/Kg	☼	105	80 - 130	1	25
Bromodichloromethane	ND		2190	2140		ug/Kg	☼	98	80 - 135	5	25
Bromoform	ND		2190	2500		ug/Kg	☼	114	70 - 130	5	25
Bromomethane	ND		2190	2420		ug/Kg	☼	111	70 - 130	2	25
2-Butanone (MEK)	ND		10900	12200		ug/Kg	☼	111	70 - 145	2	25
n-Butylbenzene	ND		2190	2160		ug/Kg	☼	99	70 - 140	4	25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-10447-A-1-C MSD
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 14893

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene	ND		2190	2250		ug/Kg	☼	103	70 - 135	1	25
tert-Butylbenzene	ND		2190	2210		ug/Kg	☼	101	80 - 135	2	25
Carbon disulfide	ND		4370	3380		ug/Kg	☼	77	70 - 130	3	25
Carbon tetrachloride	ND		2190	1770		ug/Kg	☼	81	70 - 125	6	25
Chlorobenzene	ND		2190	2050		ug/Kg	☼	94	70 - 130	3	25
Chloroethane	ND		2190	2250		ug/Kg	☼	103	70 - 130	0	25
Chloroform	ND		2190	2060		ug/Kg	☼	94	80 - 125	2	25
Chloromethane	ND		2190	2040		ug/Kg	☼	93	40 - 150	0	25
2-Chlorotoluene	ND		2190	2140		ug/Kg	☼	98	80 - 125	2	25
4-Chlorotoluene	ND		2190	2130		ug/Kg	☼	97	70 - 130	2	25
1,2-Dibromo-3-Chloropropane	ND		2190	2970		ug/Kg	☼	136	60 - 145	2	25
Dibromochloromethane	ND		2190	1940		ug/Kg	☼	89	80 - 130	5	25
1,2-Dibromoethane	ND		2190	2220		ug/Kg	☼	102	80 - 130	3	25
Dibromomethane	ND		2190	2160		ug/Kg	☼	99	75 - 125	6	25
1,2-Dichloroethane	ND		2190	2090		ug/Kg	☼	96	75 - 120	4	25
1,3-Dichlorobenzene	ND		2190	2220		ug/Kg	☼	101	80 - 130	2	25
1,4-Dichlorobenzene	ND		2190	2240		ug/Kg	☼	102	80 - 120	1	25
Dichlorodifluoromethane	ND		2190	2240		ug/Kg	☼	103	65 - 135	4	25
1,1-Dichloroethane	ND		2190	2130		ug/Kg	☼	97	80 - 125	0	25
1,1-Dichloroethene	ND		2190	2120		ug/Kg	☼	97	70 - 130	2	25
cis-1,2-Dichloroethene	ND		2190	2130		ug/Kg	☼	98	75 - 120	3	25
trans-1,2-Dichloroethene	ND		2190	2170		ug/Kg	☼	99	70 - 130	1	25
1,2-Dichloropropane	ND		2190	2160		ug/Kg	☼	99	80 - 130	3	25
1,3-Dichloropropane	ND		2190	2200		ug/Kg	☼	101	75 - 130	2	25
2,2-Dichloropropane	ND		2190	2730		ug/Kg	☼	125	70 - 130	2	25
1,1-Dichloropropene	ND		2190	2040		ug/Kg	☼	93	80 - 125	3	25
cis-1,3-Dichloropropene	ND		2190	2160		ug/Kg	☼	99	80 - 130	5	25
trans-1,3-Dichloropropene	ND		2190	2320		ug/Kg	☼	106	70 - 145	6	25
Ethylbenzene	ND		2190	2180		ug/Kg	☼	100	80 - 125	5	25
Hexachlorobutadiene	ND		2190	2330		ug/Kg	☼	107	45 - 150	1	25
2-Hexanone	ND		10900	12200		ug/Kg	☼	112	65 - 150	0	25
Isopropylbenzene	ND		2190	2210		ug/Kg	☼	101	80 - 130	3	25
p-Isopropyltoluene	ND		2190	2270		ug/Kg	☼	104	70 - 140	2	25
4-Methyl-2-pentanone (MIBK)	ND		10900	11500		ug/Kg	☼	105	60 - 150	1	25
Methyl tert-butyl ether	ND		2190	2150		ug/Kg	☼	98	70 - 130	0	25
Methylene Chloride	ND		2190	2130		ug/Kg	☼	97	70 - 120	1	25
Naphthalene	ND		2190	2550		ug/Kg	☼	117	70 - 130	0	25
N-Propylbenzene	ND		2190	2230		ug/Kg	☼	102	70 - 130	2	25
Styrene	ND		2190	2280		ug/Kg	☼	104	85 - 120	2	25
1,1,1,2-Tetrachloroethane	ND		2190	2120		ug/Kg	☼	97	80 - 130	5	25
1,1,2,2-Tetrachloroethane	ND		2190	2510		ug/Kg	☼	115	70 - 130	1	25
Tetrachloroethene	ND		2190	2050		ug/Kg	☼	94	75 - 140	4	25
Toluene	ND		2190	2020		ug/Kg	☼	92	70 - 130	2	25
1,2,3-Trichlorobenzene	ND		2190	2340		ug/Kg	☼	107	70 - 130	2	25
1,2,4-Trichlorobenzene	ND		2190	2360		ug/Kg	☼	108	70 - 150	1	25
1,1,1-Trichloroethane	ND		2190	1950		ug/Kg	☼	89	80 - 125	4	25
1,1,2-Trichloroethane	ND		2190	2130		ug/Kg	☼	98	80 - 130	4	25
Trichloroethene	ND		2190	2100		ug/Kg	☼	96	80 - 125	2	25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-10447-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 14951 — **Prep Batch: 14893**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Trichlorofluoromethane	ND		2190	2210		ug/Kg	☼	101	70 - 130	1	25
1,2,3-Trichloropropane	ND		2190	2460		ug/Kg	☼	113	70 - 130	0	25
1,2,4-Trimethylbenzene	ND		2190	2240		ug/Kg	☼	102	70 - 130	1	25
1,3,5-Trimethylbenzene	ND		2190	2230		ug/Kg	☼	102	75 - 140	2	25
Vinyl chloride	ND		2190	1770		ug/Kg	☼	81	10 - 140	1	25
m,p-Xylene	ND		4370	4410		ug/Kg	☼	101	75 - 135	2	25
o-Xylene	ND		2190	2180		ug/Kg	☼	100	70 - 130	4	25
1,2-Dichlorobenzene	ND		2190	2200		ug/Kg	☼	101	80 - 120	4	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*
4-Bromofluorobenzene (Surr)	*103*		*75 - 125*
Dibromofluoromethane (Surr)	*103*		*75 - 125*
Toluene-d8 (Surr)	*99*		*75 - 125*

Method: D2216-80 - Percent Dry Weight (Solids) per ASTM D2216-80

Lab Sample ID: 250-10423-1 DU — **Client Sample ID: W13C040-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 14896

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	29			28		%				2	20
Percent Solids	71			72		%				0.9	20

Certification Summary

Client: City of Portland
Project/Site: General

TestAmerica Job ID: 250-10423-1
SDG: W13C040

Laboratory: TestAmerica Portland

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	State Program	10	OR00040	06-30-13
Alaska (UST)	State Program	10	UST-012	12-26-13
California	State Program	9	2597	09-30-13
Oregon	NELAP	10	OR100021	01-09-14
USDA	Federal		P330-11-00092	02-17-14
Washington	State Program	10	C586	06-23-13

Method Summary

Client: City of Portland
Project/Site: General

TestAmerica Job ID: 250-10423-1
SDG: W13C040

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PRT
D2216-80	Percent Dry Weight (Solids) per ASTM D2216-80	ASTM	TAL PRT

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PRT = TestAmerica Portland, 9405 SW Nimbus Ave., Beaverton, OR 97008, TEL (503)906-9200

SUBCONTRACT ORDER

City of Portland Water Pollution Control Lab

W13C040

10423.

SENDING LABORATORY:

City of Portland Water Pollution Control Lab
6543 N. Burlington Ave
Portland, OR 97203
Phone: 503-823-5600
Fax: 503-823-5656
Invoice To: Charles Lytle using P.O.# 30001516

RECEIVING LABORATORY:

TestAmerica
9405 SW Nimbus Ave
Beaverton, OR 97008
Phone :(503) 906-9200
Fax: (503) 906-9210

WPCL Project Name
Kenton Brass Foundry

TURNAROUND REQUEST

[X] Standard

[ ] Rush _ day(s)

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: W13C040-01	**Solid**	**Sampled:03/05/13 11:20**		
Out-VOA BTEX	03/19/13 17:00	03/19/13 11:20		
Containers Supplied:				
G jar amber 4 oz (C)				
Sample ID: W13C040-02	**Solid**	**Sampled:03/05/13 11:20**		
Out-VOA BTEX	03/19/13 17:00	03/19/13 11:20		
Containers Supplied:				
G jar amber 4 oz (C)				

Released By	Date	Received By	Date
	3/7/13 1045		3/7/13 1045
Released By	Date	Received By	Date
	3/7/13 1:00		3/7/13 @ 1310

3.8 1R/G-L

Login Sample Receipt Checklist

Client: City of Portland

Job Number: 250-10423-1
SDG Number: W13C040

Login Number: 10423
List Number: 1
Creator: Svabik-Seror, Philip

List Source: TestAmerica Portland

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
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	Received project as a subcontract.
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.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C049**	Project Mgr:	John O'Donovan
Received:	3/6/13 12:20	WQDB #:	Janus825
Submitted By:	CSA/Consultant		

Sample	Laboratory ID	Matrix	Type	Sample Collection Date Start	Sample Collection Date End	Qualifier
03062013CS@0900	W13C049-01	Soil	Composite	03/06/13 09:00	03/06/13 09:00	
SW-N-1	W13C049-02	Soil	Composite	03/06/13 10:00	03/06/13 10:00	

General Chemistry

Total Solids

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
03062013CS@0900 : W13C049-01									
Total solids	**74.1**	% W/W	0.01		B13C111	03/06/13	03/07/13	SM 2540G	
SW-N-1 : W13C049-02									
Total solids	**74.6**	% W/W	0.01		B13C111	03/06/13	03/07/13	SM 2540G	

Total Metals

Total Metals by ICPMS

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
03062013CS@0900 : W13C049-01									
Arsenic	**4.16**	mg/kg dry	0.500	20	B13C210	03/12/13	03/14/13	EPA 6020	
Barium	**157**	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Chromium	**21.4**	mg/kg dry	0.500	20	B13C210	03/12/13	03/14/13	EPA 6020	
Lead	**7.85**	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Mercury	**0.0166**	mg/kg dry	0.0100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C210	03/12/13	03/14/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	
SW-N-1 : W13C049-02									
Arsenic	**6.40**	mg/kg dry	0.500	20	B13C210	03/12/13	03/14/13	EPA 6020	
Barium	**198**	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Chromium	**29.9**	mg/kg dry	0.500	20	B13C210	03/12/13	03/14/13	EPA 6020	
Lead	**13.1**	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Mercury	**0.0261**	mg/kg dry	0.0100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C210	03/12/13	03/14/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C049**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

03062013CS@0900 : W13C049-01

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*77*	*130*	*59%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*
Fluoranthene-d10	*110*	*130*	*84%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*

SW-N-1 : W13C049-02

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*72*	*132*	*54%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*
Fluoranthene-d10	*120*	*132*	*88%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C049**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs)

PCB Aroclors by GC-ECD

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
03062013CS@0900 : W13C049-01									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1260	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*13.9*		*13.1*	*106%*	*60.3-141*	*B13C186*	*03/11/13*	*03/12/13*	*EPA 8082*
Decachlorobiphenyl	*15.8*		*13.1*	*121%*	*48.6-164*	*B13C186*	*03/11/13*	*03/12/13*	*EPA 8082*
SW-N-1 : W13C049-02									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1260	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C186	03/11/13	03/12/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*12.9*		*13.0*	*99%*	*60.3-141*	*B13C186*	*03/11/13*	*03/12/13*	*EPA 8082*
Decachlorobiphenyl	*13.3*		*13.0*	*102%*	*48.6-164*	*B13C186*	*03/11/13*	*03/12/13*	*EPA 8082*

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C049**	Project Mgr:	John O'Donovan

Quality Control Report

General Chemistry - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Solids - Batch B13C111									
Duplicate (B13C111-DUP1)			**Source: W13C040-01**						
Total solids	**70.9**	% W/W	0.01		70.9		0.03 *(5)*	03/06/13 :03/07/13	
Duplicate (B13C111-DUP2)			**Source: W13C048-02**						
Total solids	**75.9**	% W/W	0.01		76.1		0.4 *(5)*	03/06/13 :03/07/13	

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C210									
Blank (B13C210-BLK1)									
Arsenic	ND	mg/kg wet	0.500					03/12/13 :03/14/13	
Barium	ND	mg/kg wet	0.100					03/12/13 :03/14/13	
Cadmium	ND	mg/kg wet	0.100					03/12/13 :03/14/13	
Chromium	ND	mg/kg wet	0.500					03/12/13 :03/14/13	
Lead	ND	mg/kg wet	0.100					03/12/13 :03/14/13	
Mercury	ND	mg/kg wet	0.0100					03/12/13 :03/14/13	
Selenium	ND	mg/kg wet	1.00					03/12/13 :03/14/13	
Silver	ND	mg/kg wet	0.100					03/12/13 :03/14/13	
Standard Reference Material (B13C210-SRM1)									
Arsenic	**79.5**	mg/kg wet	0.500	94.5		84 *(75-125)*		03/12/13 :03/14/13	
Barium	**201**	mg/kg wet	0.100	188		107 *(75-125)*		03/12/13 :03/14/13	
Cadmium	**57.5**	mg/kg wet	0.100	60.5		95 *(75-125)*		03/12/13 :03/14/13	
Chromium	**82.0**	mg/kg wet	0.500	82.2		100 *(75-125)*		03/12/13 :03/14/13	
Lead	**88.7**	mg/kg wet	0.100	91.8		97 *(75-125)*		03/12/13 :03/14/13	
Mercury	**3.249**	mg/kg wet	0.0100	3.69		88 *(75-125)*		03/12/13 :03/14/13	
Selenium	**89.0**	mg/kg wet	1.00	91.6		97 *(75-125)*		03/12/13 :03/14/13	
Silver	**33.0**	mg/kg wet	0.100	34.4		96 *(75-125)*		03/12/13 :03/14/13	
Duplicate (B13C210-DUP1)			**Source: W13C049-02**						
Arsenic	**6.25**	mg/kg dry	0.500		6.40		2 *(20)*	03/12/13 :03/14/13	
Barium	**214**	mg/kg dry	0.100		198		7 *(20)*	03/12/13 :03/14/13	
Cadmium	ND	mg/kg dry	0.100		ND		*(20)*	03/12/13 :03/14/13	
Chromium	**32.3**	mg/kg dry	0.500		29.9		8 *(20)*	03/12/13 :03/14/13	
Lead	**13.1**	mg/kg dry	0.100		13.1		0.1 *(20)*	03/12/13 :03/14/13	
Mercury	**0.02351**	mg/kg dry	0.0100		0.02609		10 *(20)*	03/12/13 :03/14/13	
Selenium	ND	mg/kg dry	1.00		ND		*(20)*	03/12/13 :03/14/13	
Silver	ND	mg/kg dry	0.100		ND		*(20)*	03/12/13 :03/14/13	
Matrix Spike (B13C210-MS1)			**Source: W13C049-02**						

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C049**	Project Mgr:	John O'Donovan

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C210									
Matrix Spike (B13C210-MS1)			**Source: W13C049-02**						
Arsenic	**21.0**	mg/kg dry	0.500	15.4	6.40	95 *(75-125)*		03/12/13 :03/14/13	
Barium	**438**	mg/kg dry	0.100	231	198	104 *(75-125)*		03/12/13 :03/14/13	
Cadmium	**15.1**	mg/kg dry	0.100	15.4	ND	98 *(75-125)*		03/12/13 :03/14/13	
Chromium	**76.2**	mg/kg dry	0.500	46.2	29.9	100 *(75-125)*		03/12/13 :03/14/13	
Lead	**87.5**	mg/kg dry	0.100	77.0	13.1	97 *(75-125)*		03/12/13 :03/14/13	
Mercury	**0.7606**	mg/kg dry	0.0100	0.770	0.02609	95 *(75-125)*		03/12/13 :03/14/13	
Selenium	**74.4**	mg/kg dry	1.00	77.0	ND	97 *(75-125)*		03/12/13 :03/14/13	
Silver	**14.3**	mg/kg dry	0.100	15.4	ND	93 *(75-125)*		03/12/13 :03/14/13	

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C049**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C129									
Blank (B13C129-BLK1)									
Acenaphthene	ND	ug/kg wet	20					03/07/13 :03/13/13	
Acenaphthylene	ND	ug/kg wet	20					03/07/13 :03/13/13	
Anthracene	ND	ug/kg wet	20					03/07/13 :03/13/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Chrysene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Fluoranthene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Fluorene	ND	ug/kg wet	20					03/07/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Naphthalene	ND	ug/kg wet	40					03/07/13 :03/13/13	
Phenanthrene	ND	ug/kg wet	20					03/07/13 :03/13/13	
Pyrene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	*72*		ug/kg wet	*100*		72		03/07/13 :03/13/13	
Fluoranthene-d10	*82*		ug/kg wet	*100*		82		03/07/13 :03/13/13	
LCS (B13C129-BS1)									
Acenaphthene	**37.6**	ug/kg wet	20	40.0		94 *(50-150)*		03/07/13 :03/13/13	
Acenaphthylene	**39.6**	ug/kg wet	20	40.0		99 *(50-150)*		03/07/13 :03/13/13	
Anthracene	**36.4**	ug/kg wet	20	40.0		91 *(50-150)*		03/07/13 :03/13/13	
Benzo(a)anthracene	**36.0**	ug/kg wet	10	40.0		90 *(50-150)*		03/07/13 :03/13/13	
Benzo(a)pyrene	**35.6**	ug/kg wet	10	40.0		89 *(50-150)*		03/07/13 :03/13/13	
Benzo(b)fluoranthene	**33.6**	ug/kg wet	10	40.0		84 *(50-150)*		03/07/13 :03/13/13	
Benzo(g,h,i)perylene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/07/13 :03/13/13	
Benzo(k)fluoranthene	**34.4**	ug/kg wet	10	40.0		86 *(50-150)*		03/07/13 :03/13/13	
Chrysene	**35.6**	ug/kg wet	10	40.0		89 *(50-150)*		03/07/13 :03/13/13	
Dibenzo(a,h)anthracene	**35.6**	ug/kg wet	10	40.0		89 *(50-150)*		03/07/13 :03/13/13	
Fluoranthene	**33.2**	ug/kg wet	10	40.0		83 *(50-150)*		03/07/13 :03/13/13	
Fluorene	**35.6**	ug/kg wet	20	40.0		89 *(50-150)*		03/07/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	**36.4**	ug/kg wet	10	40.0		91 *(50-150)*		03/07/13 :03/13/13	
Naphthalene	**33.6**	ug/kg wet	20	40.0		84 *(50-150)*		03/07/13 :03/13/13	
Phenanthrene	**36.8**	ug/kg wet	20	40.0		92 *(50-150)*		03/07/13 :03/13/13	
Pyrene	**39.2**	ug/kg wet	10	40.0		98 *(50-150)*		03/07/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	*76*		ug/kg wet	*100*		76 *(31.9-133)*		03/07/13 :03/13/13	
Fluoranthene-d10	*85*		ug/kg wet	*100*		85 *(64.7-154)*		03/07/13 :03/13/13	
Duplicate (B13C129-DUP1)			**Source: W13C040-02**						

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C049**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C129									
Duplicate (B13C129-DUP1)			**Source: W13C040-02**						
Acenaphthene	**223**	ug/kg dry	20		246		9 *(50)*	03/07/13 :03/13/13	
Acenaphthylene	**82.1**	ug/kg dry	20		ND		*(50)*	03/07/13 :03/13/13	
Anthracene	**243**	ug/kg dry	20		ND		*(50)*	03/07/13 :03/13/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Chrysene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Fluoranthene	**12.0**	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Fluorene	**374**	ug/kg dry	20		443		17 *(50)*	03/07/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		*(50)*	03/07/13 :03/13/13	
Naphthalene	**833**	ug/kg dry	40		1010		19 *(50)*	03/07/13 :03/13/13	
Phenanthrene	**1200**	ug/kg dry	20		1390		15 *(50)*	03/07/13 :03/13/13	
Pyrene	**46.8**	ug/kg dry	10		52.0		11 *(50)*	03/07/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	*120*		ug/kg dry	*136*		85		03/07/13 :03/13/13	
Fluoranthene-d10	*110*		ug/kg dry	*136*		81		03/07/13 :03/13/13	
Matrix Spike (B13C129-MS1)			**Source: W13C040-02**						
Acenaphthene	**401**	ug/kg dry	20	140	246	111 *(50-150)*		03/07/13 :03/13/13	
Acenaphthylene	**127**	ug/kg dry	20	140	ND	91 *(50-150)*		03/07/13 :03/13/13	
Anthracene	**393**	ug/kg dry	20	140	ND	281 *(50-150)*		03/07/13 :03/13/13	M0
Benzo(a)anthracene	**120**	ug/kg dry	10	140	ND	86 *(50-150)*		03/07/13 :03/13/13	
Benzo(a)pyrene	**116**	ug/kg dry	10	140	ND	83 *(50-150)*		03/07/13 :03/13/13	
Benzo(b)fluoranthene	**111**	ug/kg dry	10	140	ND	79 *(50-150)*		03/07/13 :03/13/13	
Benzo(g,h,i)perylene	**121**	ug/kg dry	10	140	ND	87 *(50-150)*		03/07/13 :03/13/13	
Benzo(k)fluoranthene	**112**	ug/kg dry	10	140	ND	80 *(50-150)*		03/07/13 :03/13/13	
Chrysene	**118**	ug/kg dry	10	140	ND	85 *(50-150)*		03/07/13 :03/13/13	
Dibenzo(a,h)anthracene	**120**	ug/kg dry	10	140	ND	86 *(50-150)*		03/07/13 :03/13/13	
Fluoranthene	**121**	ug/kg dry	10	140	ND	87 *(50-150)*		03/07/13 :03/13/13	
Fluorene	**560**	ug/kg dry	20	140	443	83 *(50-150)*		03/07/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	**120**	ug/kg dry	10	140	ND	86 *(50-150)*		03/07/13 :03/13/13	
Naphthalene	**1150**	ug/kg dry	40	140	1010	99 *(50-150)*		03/07/13 :03/13/13	
Phenanthrene	**1510**	ug/kg dry	20	140	1390	86 *(50-150)*		03/07/13 :03/13/13	
Pyrene	**181**	ug/kg dry	10	140	52.0	92 *(50-150)*		03/07/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	*130*		ug/kg dry	*140*		93 *(31.9-133)*		03/07/13 :03/13/13	
Fluoranthene-d10	*120*		ug/kg dry	*140*		84 *(64.7-154)*		03/07/13 :03/13/13	

Reported: 03/27/13 14:53

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C049**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs) - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
PCB Aroclors by GC-ECD - Batch B13C186									
Blank (B13C186-BLK1)									
Aroclor 1016/1242	ND	ug/kg wet	10.0					03/11/13 :03/12/13	
Aroclor 1221	ND	ug/kg wet	20.0					03/11/13 :03/12/13	
Aroclor 1232	ND	ug/kg wet	10.0					03/11/13 :03/12/13	
Aroclor 1248	ND	ug/kg wet	10.0					03/11/13 :03/12/13	
Aroclor 1254	ND	ug/kg wet	10.0					03/11/13 :03/12/13	
Aroclor 1260	ND	ug/kg wet	10.0					03/11/13 :03/12/13	
Aroclor 1262	ND	ug/kg wet	10.0					03/11/13 :03/12/13	
Aroclor 1268	ND	ug/kg wet	10.0					03/11/13 :03/12/13	
Surrogate									
Tetrachloro-m-xylene	*10.9*		ug/kg wet	*10.0*		109		03/11/13 :03/12/13	
Decachlorobiphenyl	*11.9*		ug/kg wet	*10.0*		119		03/11/13 :03/12/13	
LCS (B13C186-BS1)									
Aroclor 1016/1242	**107.8**	ug/kg wet	10.0	100		108 *(78.7-127)*		03/11/13 :03/12/13	
Aroclor 1260	**97.53**	ug/kg wet	10.0	100		98 *(80.9-139)*		03/11/13 :03/12/13	
Surrogate									
Tetrachloro-m-xylene	*10.5*		ug/kg wet	*10.0*		105 *(60.3-141)*		03/11/13 :03/12/13	
Decachlorobiphenyl	*11.6*		ug/kg wet	*10.0*		116 *(48.6-164)*		03/11/13 :03/12/13	
Matrix Spike (B13C186-MS1)			**Source: W13C083-01**						
Aroclor 1016/1242	**126.0**	ug/kg dry	100	112	ND	113 *(50.8-144)*		03/11/13 :03/12/13	
Aroclor 1260	**506.8**	ug/kg dry	100	112	ND	453 *(33-158)*		03/11/13 :03/12/13	M18, Z0
Surrogate									
Tetrachloro-m-xylene	*10.9*		ug/kg dry	*11.2*		98 *(60.3-141)*		03/11/13 :03/12/13	
Decachlorobiphenyl	*15.1*		ug/kg dry	*11.2*		135 *(48.6-164)*		03/11/13 :03/12/13	
Matrix Spike Dup (B13C186-MSD1)			**Source: W13C083-01**						
Aroclor 1016/1242	**192.6**	ug/kg dry	100	114	ND	169 *(50.8-144)*	42 *(20)*	03/11/13 :03/12/13	M18
Aroclor 1260	**430.4**	ug/kg dry	100	114	ND	377 *(33-158)*	16 *(20)*	03/11/13 :03/12/13	M18, Z0
Surrogate									
Tetrachloro-m-xylene	*16.2*		ug/kg dry	*11.4*		142 *(60.3-141)*		03/11/13 :03/12/13	*SU5*
Decachlorobiphenyl	*24.0*		ug/kg dry	*11.4*		211 *(48.6-164)*		03/11/13 :03/12/13	*SU5*

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C049**	Project Mgr:	John O'Donovan

Qualifiers

M0	Matrix spike recovery was high due to matrix interference.
M18	Matrix spike recovery(ies) could not be determined due to required sample dilution.
SU5	Surrogate recovery could not be determined due to required dilution of the sample extract.
Z0	Hig matrix spike recovery is due to low spike amount and a high level of Aroclor 1262 that is not accounted for in the % recovery calculation.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference

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Jennifer Shackelford, Laboratory Coordinator QA/QC

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
Sample Custodian: (503) 823-5696
General Lab: (503) 823-5681

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 3/6/13
Work Order #: W13C049
Collected By: L. Farr

Client Name: ~~Kent~~
Project Name: Kenton Brass Foundry

Requested Analyses

Lab Number	Sample ID	Sample Date	Sample Time	Grab or Comp	Sample Matrix	PCB Aroclors	PAHs	RCRA 8 metals	Comments
01	03062013CS@0900	3/6	9:00	C	Soil	X	X	X	4 x 4 oz
02	SW-N-1	3/6	10:00	C	Soil	X	X	X	4 x 4 oz
	~~Railroad Spur~~								
	~~SW-RR-2~~	~~3/6~~	~~9:00~~	~~G~~	~~Soil~~	~~X~~			~~2x 4oz~~ RUSH
	~~CS-RR-4~~	~~3/6~~	~~10:30~~	~~C~~	~~Soil~~	~~X~~			~~2x 4oz~~

Relinquished By:	Date:	Received By:	Date:	Relinquished By:	Date:	Received By:	Date:
Signature: [signature]	3/6/13	Signature: [signature]	3/6/13	Signature:		Signature:	
Printed Name: Leonard Farr	Time: 12:20	Printed Name: [signature]	Time: 1220	Printed Name:	Time:	Printed Name:	Time:

CoC_Generic_new.xls

Page _____ of _____

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C076**	Project Mgr:	John O'Donovan
Received:	3/7/13 15:27	WQDB #:	Janus825
Submitted By:	CSA/Consultant		

Sample	Laboratory ID	Matrix	Type	Sample Collection Date Start	Sample Collection Date End	Qualifier
03072013_CS	W13C076-01	Soil	Composite	03/07/13 13:50	03/07/13 13:50	
SW-E-4	W13C076-02	Soil	Composite	03/07/13 13:55	03/07/13 13:55	

General Chemistry

Total Solids

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
03072013_CS : W13C076-01									
Total solids	**74.8**	% W/W	0.01		B13C151	03/08/13	03/09/13	SM 2540G	
SW-E-4 : W13C076-02									
Total solids	**72.0**	% W/W	0.01		B13C151	03/08/13	03/09/13	SM 2540G	

Total Metals

Total Metals by ICPMS

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
03072013_CS : W13C076-01									
Arsenic	**4.03**	mg/kg dry	0.500	20	B13C210	03/12/13	03/14/13	EPA 6020	
Barium	**140**	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Chromium	**20.1**	mg/kg dry	0.500	20	B13C210	03/12/13	03/14/13	EPA 6020	
Lead	**9.12**	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Mercury	**0.0138**	mg/kg dry	0.0100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C210	03/12/13	03/14/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	
SW-E-4 : W13C076-02									
Arsenic	**6.97**	mg/kg dry	0.500	20	B13C210	03/12/13	03/14/13	EPA 6020	
Barium	**234**	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Cadmium	**0.101**	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Chromium	**33.2**	mg/kg dry	0.500	20	B13C210	03/12/13	03/14/13	EPA 6020	
Lead	**14.3**	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Mercury	**0.0262**	mg/kg dry	0.0100	20	B13C210	03/12/13	03/14/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C210	03/12/13	03/14/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C210	03/12/13	03/14/13	EPA 6020	

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Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C076**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

03072013_CS : W13C076-01

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*43*	*122*	*35%*	*31.9-133*	*B13C181*	*03/11/13*	*03/13/13*	*EPA 8270-SIM*
Fluoranthene-d10	*100*	*122*	*84%*	*64.7-154*	*B13C181*	*03/11/13*	*03/13/13*	*EPA 8270-SIM*

SW-E-4 : W13C076-02

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C181	03/11/13	03/13/13	EPA 8270-SIM	

Surrogate	***Result***	***Expected***	***%Rec***	***Limits(%)***				
2-Methylnaphthalene-d10	*48*	*120*	*40%*	*31.9-133*	*B13C181*	*03/11/13*	*03/13/13*	*EPA 8270-SIM*
Fluoranthene-d10	*100*	*120*	*88%*	*64.7-154*	*B13C181*	*03/11/13*	*03/13/13*	*EPA 8270-SIM*

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C076**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs)

PCB Aroclors by GC-ECD

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
03072013_CS : W13C076-01									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C237	03/14/13	03/15/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C237	03/14/13	03/15/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C237	03/14/13	03/15/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C237	03/14/13	03/15/13	EPA 8082	
Aroclor 1254	**17.6**	ug/kg dry	10.0	1	B13C237	03/14/13	03/15/13	EPA 8082	
Aroclor 1260	**42.2**	ug/kg dry	10.0	1	B13C237	03/14/13	03/15/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C237	03/14/13	03/15/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C237	03/14/13	03/15/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*13.7*		*13.4*	*103%*	*60.3-141*	*B13C237*	*03/14/13*	*03/15/13*	*EPA 8082*
Decachlorobiphenyl	*15.8*		*13.4*	*118%*	*48.6-164*	*B13C237*	*03/14/13*	*03/15/13*	*EPA 8082*
SW-E-4 : W13C076-02									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C237	03/14/13	03/15/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C237	03/14/13	03/15/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C237	03/14/13	03/15/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C237	03/14/13	03/15/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C237	03/14/13	03/15/13	EPA 8082	
Aroclor 1260	**229**	ug/kg dry	10.0	1	B13C237	03/14/13	03/15/13	EPA 8082	AR11
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C237	03/14/13	03/15/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C237	03/14/13	03/15/13	EPA 8082	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
Tetrachloro-m-xylene	*12.1*		*13.1*	*92%*	*60.3-141*	*B13C237*	*03/14/13*	*03/15/13*	*EPA 8082*
Decachlorobiphenyl	*13.0*		*13.1*	*99%*	*48.6-164*	*B13C237*	*03/14/13*	*03/15/13*	*EPA 8082*

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C076**	Project Mgr:	John O'Donovan

Quality Control Report

General Chemistry - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Solids - Batch B13C151									
Duplicate (B13C151-DUP1)			**Source: W13C059-02**						
Total solids	**87.3**	% W/W	0.01		87.8		0.6 *(5)*	03/08/13 :03/09/13	

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C210									
Blank (B13C210-BLK1)									
Arsenic	ND	mg/kg wet	0.500					03/12/13 :03/14/13	
Barium	ND	mg/kg wet	0.100					03/12/13 :03/14/13	
Cadmium	ND	mg/kg wet	0.100					03/12/13 :03/14/13	
Chromium	ND	mg/kg wet	0.500					03/12/13 :03/14/13	
Lead	ND	mg/kg wet	0.100					03/12/13 :03/14/13	
Mercury	ND	mg/kg wet	0.0100					03/12/13 :03/14/13	
Selenium	ND	mg/kg wet	1.00					03/12/13 :03/14/13	
Silver	ND	mg/kg wet	0.100					03/12/13 :03/14/13	
Standard Reference Material (B13C210-SRM1)									
Arsenic	**79.5**	mg/kg wet	0.500	94.5		84 *(75-125)*		03/12/13 :03/14/13	
Barium	**201**	mg/kg wet	0.100	188		107 *(75-125)*		03/12/13 :03/14/13	
Cadmium	**57.5**	mg/kg wet	0.100	60.5		95 *(75-125)*		03/12/13 :03/14/13	
Chromium	**82.0**	mg/kg wet	0.500	82.2		100 *(75-125)*		03/12/13 :03/14/13	
Lead	**88.7**	mg/kg wet	0.100	91.8		97 *(75-125)*		03/12/13 :03/14/13	
Mercury	**3.249**	mg/kg wet	0.0100	3.69		88 *(75-125)*		03/12/13 :03/14/13	
Selenium	**89.0**	mg/kg wet	1.00	91.6		97 *(75-125)*		03/12/13 :03/14/13	
Silver	**33.0**	mg/kg wet	0.100	34.4		96 *(75-125)*		03/12/13 :03/14/13	
Duplicate (B13C210-DUP1)			**Source: W13C049-02**						
Arsenic	**6.25**	mg/kg dry	0.500		6.40		2 *(20)*	03/12/13 :03/14/13	
Barium	**214**	mg/kg dry	0.100		198		7 *(20)*	03/12/13 :03/14/13	
Cadmium	ND	mg/kg dry	0.100		ND		*(20)*	03/12/13 :03/14/13	
Chromium	**32.3**	mg/kg dry	0.500		29.9		8 *(20)*	03/12/13 :03/14/13	
Lead	**13.1**	mg/kg dry	0.100		13.1		0.1 *(20)*	03/12/13 :03/14/13	
Mercury	**0.02351**	mg/kg dry	0.0100		0.02609		10 *(20)*	03/12/13 :03/14/13	
Selenium	ND	mg/kg dry	1.00		ND		*(20)*	03/12/13 :03/14/13	
Silver	ND	mg/kg dry	0.100		ND		*(20)*	03/12/13 :03/14/13	
Matrix Spike (B13C210-MS1)			**Source: W13C049-02**						
Arsenic	**21.0**	mg/kg dry	0.500	15.4	6.40	95 *(75-125)*		03/12/13 :03/14/13	
Barium	**438**	mg/kg dry	0.100	231	198	104 *(75-125)*		03/12/13 :03/14/13	

Reported: 03/29/13 08:03

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C076**	Project Mgr:	John O'Donovan

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C210									
Matrix Spike (B13C210-MS1)			**Source: W13C049-02**						
Cadmium	**15.1**	mg/kg dry	0.100	15.4	ND	98 *(75-125)*		03/12/13 :03/14/13	
Chromium	**76.2**	mg/kg dry	0.500	46.2	29.9	100 *(75-125)*		03/12/13 :03/14/13	
Lead	**87.5**	mg/kg dry	0.100	77.0	13.1	97 *(75-125)*		03/12/13 :03/14/13	
Mercury	**0.7606**	mg/kg dry	0.0100	0.770	0.02609	95 *(75-125)*		03/12/13 :03/14/13	
Selenium	**74.4**	mg/kg dry	1.00	77.0	ND	97 *(75-125)*		03/12/13 :03/14/13	
Silver	**14.3**	mg/kg dry	0.100	15.4	ND	93 *(75-125)*		03/12/13 :03/14/13	

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C076**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C181									
Blank (B13C181-BLK1)									
Acenaphthene	ND	ug/kg wet	20					03/11/13 :03/13/13	
Acenaphthylene	ND	ug/kg wet	20					03/11/13 :03/13/13	
Anthracene	ND	ug/kg wet	20					03/11/13 :03/13/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/11/13 :03/13/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/11/13 :03/13/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/11/13 :03/13/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/11/13 :03/13/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/11/13 :03/13/13	
Chrysene	ND	ug/kg wet	10					03/11/13 :03/13/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/11/13 :03/13/13	
Fluoranthene	ND	ug/kg wet	10					03/11/13 :03/13/13	
Fluorene	ND	ug/kg wet	20					03/11/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/11/13 :03/13/13	
Naphthalene	ND	ug/kg wet	40					03/11/13 :03/13/13	
Phenanthrene	ND	ug/kg wet	20					03/11/13 :03/13/13	
Pyrene	ND	ug/kg wet	10					03/11/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	*59*		ug/kg wet	*100*		59		03/11/13 :03/13/13	
Fluoranthene-d10	*86*		ug/kg wet	*100*		86		03/11/13 :03/13/13	
LCS (B13C181-BS1)									
Acenaphthene	**38.8**	ug/kg wet	20	40.0		97 *(50-150)*		03/11/13 :03/13/13	
Acenaphthylene	**41.2**	ug/kg wet	20	40.0		103 *(50-150)*		03/11/13 :03/13/13	
Anthracene	**38.8**	ug/kg wet	20	40.0		97 *(50-150)*		03/11/13 :03/13/13	
Benzo(a)anthracene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/11/13 :03/13/13	
Benzo(a)pyrene	**37.6**	ug/kg wet	10	40.0		94 *(50-150)*		03/11/13 :03/13/13	
Benzo(b)fluoranthene	**34.8**	ug/kg wet	10	40.0		87 *(50-150)*		03/11/13 :03/13/13	
Benzo(g,h,i)perylene	**39.2**	ug/kg wet	10	40.0		98 *(50-150)*		03/11/13 :03/13/13	
Benzo(k)fluoranthene	**35.6**	ug/kg wet	10	40.0		89 *(50-150)*		03/11/13 :03/13/13	
Chrysene	**36.8**	ug/kg wet	10	40.0		92 *(50-150)*		03/11/13 :03/13/13	
Dibenzo(a,h)anthracene	**38.0**	ug/kg wet	10	40.0		95 *(50-150)*		03/11/13 :03/13/13	
Fluoranthene	**34.4**	ug/kg wet	10	40.0		86 *(50-150)*		03/11/13 :03/13/13	
Fluorene	**37.6**	ug/kg wet	20	40.0		94 *(50-150)*		03/11/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	**38.8**	ug/kg wet	10	40.0		97 *(50-150)*		03/11/13 :03/13/13	
Naphthalene	**35.6**	ug/kg wet	20	40.0		89 *(50-150)*		03/11/13 :03/13/13	
Phenanthrene	**38.0**	ug/kg wet	20	40.0		95 *(50-150)*		03/11/13 :03/13/13	
Pyrene	**40.0**	ug/kg wet	10	40.0		100 *(50-150)*		03/11/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	*44*		ug/kg wet	*100*		44 *(31.9-133)*		03/11/13 :03/13/13	
Fluoranthene-d10	*87*		ug/kg wet	*100*		87 *(64.7-154)*		03/11/13 :03/13/13	
Duplicate (B13C181-DUP1)			**Source: W13C074-03**						

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C076**	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C181									
Duplicate (B13C181-DUP1)			**Source: W13C074-03**						
Acenaphthene	ND	ug/kg dry	20		ND		(50)	03/11/13 :03/13/13	
Acenaphthylene	**44.9**	ug/kg dry	20		56.8		23 (50)	03/11/13 :03/13/13	
Anthracene	ND	ug/kg dry	20		ND		(50)	03/11/13 :03/13/13	
Benzo(a)anthracene	**14.4**	ug/kg dry	10		18.8		27 (50)	03/11/13 :03/13/13	
Benzo(a)pyrene	**40.1**	ug/kg dry	10		40.1		0.04 (50)	03/11/13 :03/13/13	
Benzo(b)fluoranthene	**41.0**	ug/kg dry	10		42.2		3 (50)	03/11/13 :03/13/13	
Benzo(g,h,i)perylene	**78.5**	ug/kg dry	10		68.1		14 (50)	03/11/13 :03/13/13	
Benzo(k)fluoranthene	**12.2**	ug/kg dry	10		13.8		12 (50)	03/11/13 :03/13/13	
Chrysene	**16.1**	ug/kg dry	10		21.3		28 (50)	03/11/13 :03/13/13	
Dibenzo(a,h)anthracene	**14.4**	ug/kg dry	10		ND		(50)	03/11/13 :03/13/13	
Fluoranthene	**19.6**	ug/kg dry	10		24.7		23 (50)	03/11/13 :03/13/13	
Fluorene	ND	ug/kg dry	20		ND		(50)	03/11/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	**41.0**	ug/kg dry	10		38.5		6 (50)	03/11/13 :03/13/13	
Naphthalene	ND	ug/kg dry	40		ND		(50)	03/11/13 :03/13/13	
Phenanthrene	ND	ug/kg dry	20		ND		(50)	03/11/13 :03/13/13	
Pyrene	**34.9**	ug/kg dry	10		39.7		13 (50)	03/11/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	*75*		ug/kg dry	*109*		69		03/11/13 :03/13/13	
Fluoranthene-d10	*97*		ug/kg dry	*109*		89		03/11/13 :03/13/13	
Matrix Spike (B13C181-MS1)			**Source: W13C074-03**						
Acenaphthene	**121**	ug/kg dry	20	115	ND	106 (50-150)		03/11/13 :03/13/13	
Acenaphthylene	**213**	ug/kg dry	20	115	56.8	136 (50-150)		03/11/13 :03/13/13	
Anthracene	**153**	ug/kg dry	20	115	ND	134 (50-150)		03/11/13 :03/13/13	
Benzo(a)anthracene	**146**	ug/kg dry	10	115	18.8	111 (50-150)		03/11/13 :03/13/13	
Benzo(a)pyrene	**220**	ug/kg dry	10	115	40.1	157 (50-150)		03/11/13 :03/13/13	M5
Benzo(b)fluoranthene	**190**	ug/kg dry	10	115	42.2	129 (50-150)		03/11/13 :03/13/13	
Benzo(g,h,i)perylene	**300**	ug/kg dry	10	115	68.1	203 (50-150)		03/11/13 :03/13/13	M5
Benzo(k)fluoranthene	**135**	ug/kg dry	10	115	13.8	106 (50-150)		03/11/13 :03/13/13	
Chrysene	**175**	ug/kg dry	10	115	21.3	134 (50-150)		03/11/13 :03/13/13	
Dibenzo(a,h)anthracene	**140**	ug/kg dry	10	115	ND	122 (50-150)		03/11/13 :03/13/13	
Fluoranthene	**144**	ug/kg dry	10	115	24.7	104 (50-150)		03/11/13 :03/13/13	
Fluorene	**111**	ug/kg dry	20	115	ND	97 (50-150)		03/11/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	**225**	ug/kg dry	10	115	38.5	163 (50-150)		03/11/13 :03/13/13	M5
Naphthalene	**110**	ug/kg dry	40	115	ND	96 (50-150)		03/11/13 :03/13/13	
Phenanthrene	**127**	ug/kg dry	20	115	ND	111 (50-150)		03/11/13 :03/13/13	
Pyrene	**202**	ug/kg dry	10	115	39.7	142 (50-150)		03/11/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	*65*		ug/kg dry	*115*		57 (31.9-133)		03/11/13 :03/13/13	
Fluoranthene-d10	*100*		ug/kg dry	*115*		89 (64.7-154)		03/11/13 :03/13/13	

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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C076**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs) - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
PCB Aroclors by GC-ECD - Batch B13C237									
Blank (B13C237-BLK1)									
Aroclor 1016/1242	ND	ug/kg wet	10.0					03/14/13 :03/15/13	
Aroclor 1221	ND	ug/kg wet	20.0					03/14/13 :03/15/13	
Aroclor 1232	ND	ug/kg wet	10.0					03/14/13 :03/15/13	
Aroclor 1248	ND	ug/kg wet	10.0					03/14/13 :03/15/13	
Aroclor 1254	ND	ug/kg wet	10.0					03/14/13 :03/15/13	
Aroclor 1260	ND	ug/kg wet	10.0					03/14/13 :03/15/13	
Aroclor 1262	ND	ug/kg wet	10.0					03/14/13 :03/15/13	
Aroclor 1268	ND	ug/kg wet	10.0					03/14/13 :03/15/13	
Surrogate									
Tetrachloro-m-xylene	*10.3*		ug/kg wet	*10.0*		103		03/14/13 :03/15/13	
Decachlorobiphenyl	*12.1*		ug/kg wet	*10.0*		121		03/14/13 :03/15/13	
Blank (B13C237-BLK2)									
Aroclor 1016/1242	ND	ug/kg wet	10.0					03/14/13 :03/19/13	
Aroclor 1221	ND	ug/kg wet	20.0					03/14/13 :03/19/13	
Aroclor 1232	ND	ug/kg wet	10.0					03/14/13 :03/19/13	
Aroclor 1248	ND	ug/kg wet	10.0					03/14/13 :03/19/13	
Aroclor 1254	ND	ug/kg wet	10.0					03/14/13 :03/19/13	
Aroclor 1260	ND	ug/kg wet	10.0					03/14/13 :03/19/13	
Aroclor 1262	ND	ug/kg wet	10.0					03/14/13 :03/19/13	
Aroclor 1268	ND	ug/kg wet	10.0					03/14/13 :03/19/13	
Surrogate									
Tetrachloro-m-xylene	*11.5*		ug/kg wet	*10.0*		115		03/14/13 :03/19/13	
Decachlorobiphenyl	*12.8*		ug/kg wet	*10.0*		128		03/14/13 :03/19/13	
LCS (B13C237-BS1)									
Aroclor 1016/1242	**108.4**	ug/kg wet	10.0	100		108 *(78.7-127)*		03/14/13 :03/15/13	
Aroclor 1260	**100.3**	ug/kg wet	10.0	100		100 *(80.9-139)*		03/14/13 :03/15/13	
Surrogate									
Tetrachloro-m-xylene	*10.4*		ug/kg wet	*10.0*		104 *(60.3-141)*		03/14/13 :03/15/13	
Decachlorobiphenyl	*12.4*		ug/kg wet	*10.0*		124 *(48.6-164)*		03/14/13 :03/15/13	
LCS (B13C237-BS2)									
Aroclor 1016/1242	**116.5**	ug/kg wet	10.0	100		116 *(78.7-127)*		03/14/13 :03/19/13	
Aroclor 1260	**104.5**	ug/kg wet	10.0	100		104 *(80.9-139)*		03/14/13 :03/19/13	
Surrogate									
Tetrachloro-m-xylene	*11.8*		ug/kg wet	*10.0*		118 *(60.3-141)*		03/14/13 :03/19/13	
Decachlorobiphenyl	*12.6*		ug/kg wet	*10.0*		126 *(48.6-164)*		03/14/13 :03/19/13	
Matrix Spike (B13C237-MS1)			**Source: W13C090-01**						
Aroclor 1016/1242	**156.7**	ug/kg dry	50.0	124	ND	126 *(50.8-144)*		03/14/13 :03/15/13	
Aroclor 1260	**667.4**	ug/kg dry	50.0	124	316.1	282 *(33-158)*		03/14/13 :03/15/13	M3
Surrogate									
Tetrachloro-m-xylene	*12.5*		ug/kg dry	*12.4*		100 *(60.3-141)*		03/14/13 :03/15/13	
Decachlorobiphenyl	*16.6*		ug/kg dry	*12.4*		133 *(48.6-164)*		03/14/13 :03/15/13	

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Water Pollution Control Laboratory
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Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C076**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs) - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
PCB Aroclors by GC-ECD - Batch B13C237									
Matrix Spike Dup (B13C237-MSD1)			**Source: W13C090-01**						
Aroclor 1016/1242	**175.2**	ug/kg dry	50.0	129	ND	136 *(50.8-144)*	11 *(20)*	03/14/13 :03/15/13	
Aroclor 1260	**983.9**	ug/kg dry	50.0	129	316.1	518 *(33-158)*	38 *(20)*	03/14/13 :03/15/13	M3
Surrogate									
Tetrachloro-m-xylene	*13.6*		ug/kg dry	*12.9*		106 *(60.3-141)*		03/14/13 :03/15/13	
Decachlorobiphenyl	*18.3*		ug/kg dry	*12.9*		142 *(48.6-164)*		03/14/13 :03/15/13	

Qualifiers

AR11	Identified Aroclor pattern differs somewhat from the reference standard, affecting quantification.
M3	Inconsistent results for matrix QC (duplicates and/or matrix spikes) indicate non-homogeneous sample matrix. Sample results should be considered estimates.
M5	Based on high matrix spike recovery, the sample result should be considered an estimate due to matrix effect and/or non-homogeneous matrix.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference

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Date: 3-7-2013

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
Sample Custodian: (503) 823-5696
General Lab: (503) 823-5681

City of Portland Chain-of-Custody

Bureau of Environmental Services

Lab Work Order #: W13C076

Collected By: Graeme Taylor

Client Name: Coordinated Site Analysis

Project Number (if applicable):

Project Name: Kenton Brass Foundry

Contact Name:

Requested Analyses

Follow-up Tests:
- ☐ Run TCLP metals if limit exceeded
- ☐ Run SPLP if limit exceeded (indicate which analyses in Remarks field)
- ☐ Run NWTPH-Dx and NWTPH-Gx if detects on NWTPH-HCID
- ☐ Run PAHs if detects on NWTPH-Dx
- ☐ Run VOCs if detects on NWTPH-Gx
- ☐ Run TOC if detects on NWTPH-HCID

Turn-Around-Time Request:
- ☒ Standard (10 business days)
- ☐ Rush (5 business days)
- ☐ Other:

Lab Number	Location ID	Sample Date	Sample Time	Grab or Comp	Sample Matrix	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	PCB Aroclors (low-level)	PAHs	Priority Pollutant 13 Metals	RCRA 8 Metals	Total Metals (As, Cd, Cr, Cu, Pb, Hg, Zn)	Total Metals (Cd, Cr, Pb)	VOCs	TOC						HOLD	# of Containers	Remarks
01	03072013_cs	3/7	1350	C	S				X	X		X											4x4oz	
02	SW-E-4	↓	1355	↓	↓				X	X		X											4x4oz	

Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Graeme B Taylor	Signature:	Signature:	Signature:
Date: 3-7-13	Date: 3/7/13	Date:	Date:
Printed Name: Graeme Taylor	Printed Name: Mackenzie Zick	Printed Name:	Printed Name:
Time: 1527	Time: 1527	Time:	Time:

CSA Element COC

Page _____ of _____

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C078**	Project Mgr:	John O'Donovan
Received:	3/7/13 11:29	WQDB #:	Janus825
Submitted By:	CSA/Consultant		

Sample	Laboratory ID	Matrix	Type	Sample Collection Date Start	Sample Collection Date End	Qualifier
PFL@18-20'	W13C078-01	Soil	Composite	03/06/13 15:42	03/06/13 15:42	
NNL@18-20'	W13C078-02	Soil	Composite	03/06/13 16:52	03/06/13 16:52	
WL@18-20'	W13C078-03	Soil	Composite	03/06/13 17:19	03/06/13 17:19	
EL@18-20'	W13C078-04	Soil	Composite	03/06/13 17:41	03/06/13 17:41	
SL@18-20'	W13C078-05	Soil	Composite	03/06/13 18:07	03/06/13 18:07	

General Chemistry

Total Solids

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
PFL@18-20' : W13C078-01									
Total solids	**72.6**	% W/W	0.01		B13C204	03/12/13	03/13/13	SM 2540G	
NNL@18-20' : W13C078-02									
Total solids	**67.1**	% W/W	0.01		B13C204	03/12/13	03/13/13	SM 2540G	
WL@18-20' : W13C078-03									
Total solids	**66.4**	% W/W	0.01		B13C204	03/12/13	03/13/13	SM 2540G	
EL@18-20' : W13C078-04									
Total solids	**70.6**	% W/W	0.01		B13C204	03/12/13	03/13/13	SM 2540G	
SL@18-20' : W13C078-05									
Total solids	**73.7**	% W/W	0.01		B13C204	03/12/13	03/13/13	SM 2540G	

Reported: 03/21/13 13:12

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C078**	Project Mgr:	John O'Donovan

Fuels

Diesel/Oil Hydrocarbons by GC-FID

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
PFL@18-20' : W13C078-01									
Diesel	ND	mg/kg dry	25	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry	50	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
2-Fluorobiphenyl	*24.2*		*24.4*	*99%*	*50-150*	*B13C185*	*03/11/13*	*03/11/13*	*NWTPH-Dx*
NNL@18-20' : W13C078-02									
Diesel	ND	mg/kg dry	25	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry	50	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
2-Fluorobiphenyl	*27.2*		*28.0*	*97%*	*50-150*	*B13C185*	*03/11/13*	*03/11/13*	*NWTPH-Dx*
WL@18-20' : W13C078-03									
Diesel	ND	mg/kg dry	25	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry	50	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
2-Fluorobiphenyl	*26.4*		*26.7*	*99%*	*50-150*	*B13C185*	*03/11/13*	*03/11/13*	*NWTPH-Dx*
EL@18-20' : W13C078-04									
Diesel	ND	mg/kg dry	25	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry	50	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
2-Fluorobiphenyl	*24.7*		*25.3*	*97%*	*50-150*	*B13C185*	*03/11/13*	*03/11/13*	*NWTPH-Dx*
SL@18-20' : W13C078-05									
Diesel	ND	mg/kg dry	25	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry	50	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Surrogate	***Result***		***Expected***	***%Rec***	***Limits(%)***				
2-Fluorobiphenyl	*24.2*		*23.9*	*101%*	*50-150*	*B13C185*	*03/11/13*	*03/11/13*	*NWTPH-Dx*

Reported: 03/21/13 13:12

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C078**	Project Mgr:	John O'Donovan

Quality Control Report

General Chemistry - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Solids - Batch B13C204									
Duplicate (B13C204-DUP1)			**Source: W13C078-04**						
Total solids	**70.2**	% W/W	0.01		70.6		0.6 *(5)*	03/12/13 :03/13/13	

Fuels - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Diesel/Oil Hydrocarbons by GC-FID - Batch B13C185									
Blank (B13C185-BLK1)									
Diesel	ND	mg/kg wet	25					03/11/13 :03/11/13	
Lube oil	ND	mg/kg wet	50					03/11/13 :03/11/13	
Surrogate									
2-Fluorobiphenyl	*19.7*		mg/kg wet	*20.0*		98		03/11/13 :03/11/13	
LCS (B13C185-BS1)									
Diesel	**81.4**	mg/kg wet	25	100		81 *(50-150)*		03/11/13 :03/11/13	
Lube oil	**94.7**	mg/kg wet	50	100		95 *(50-150)*		03/11/13 :03/11/13	
Surrogate									
2-Fluorobiphenyl	*21.5*		mg/kg wet	*20.0*		107 *(50-150)*		03/11/13 :03/11/13	
Duplicate (B13C185-DUP1)			**Source: W13C074-03**						
Diesel	ND	mg/kg dry	25		ND		*(50)*	03/11/13 :03/11/13	
Lube oil	**243**	mg/kg dry	50		117		70 *(50)*	03/11/13 :03/11/13	M1
Surrogate									
2-Fluorobiphenyl	*22.7*		mg/kg dry	*21.8*		104		03/11/13 :03/11/13	

Qualifiers

M1	Matrix duplicate precision measurement indicates non-homogeneous sample matrix. Sample result should be considered an estimate.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference

Reported: 03/21/13 13:12

Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

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Date: 3/7/13

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
Sample Custodian: (503) 823-5696
General Lab: (503) 823-5681

City of Portland Chain-of-Custody

Bureau of Environmental Services

Lab Work Order #: W13C078

Collected By: J. COOPER

Client Name: **Coordinated Site Analysis**

Project Number (if applicable):

Project Name: KENTON BRASS FOUNDRY

Contact Name:

Follow-up Tests:
- ☐ Run TCLP metals if limit exceeded
- ☐ Run SPLP if limit exceeded (indicate which analyses in Remarks field)
- ☐ Run NWTPH-Dx and NWTPH-Gx if detects on NWTPH-HCID
- ☐ Run PAHs if detects on NWTPH-Dx
- ☐ Run VOCs if detects on NWTPH-Gx
- ☐ Run TOC if detects on NWTPH-HCID

per D. Linnertz 03/13 dem

Turn-Around-Time Request:
- ☐ Standard (10 business days)
- ☐ Rush (5 business days)
- ☐ Other:

Requested Analyses

Lab Number	Location ID	Sample Date	Sample Time (pm)	Grab or Comp	Sample Matrix	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	PCB Aroclors (low-level)	PAHs	Priority Pollutant 13 Metals	RCRA 8 Metals	Total Metals	(As, Cd, Cr, Cu, Pb, Hg, Zn)	Total Metals (Cd, Cr, Pb)	VOCs	TOC						HOLD	# of Containers	Remarks
01	PFL @18-20'	3/6/13	3:42	C	S		X																		HOLD FOR DX
	NL @18-20'		4:16			DISCARD																			HOLD PFE-9' PFW-9'
02	NNL @18-20'		4:52	C			X																		
03	WL @18-20'		5:19	C			X																		
04	EL @18-20'		5:41	C			X																		
05	SL @18-20'		6:07	C			X																		
	WL @16-18'		5:16			DISCARD																			HOLD

Relinquished By:		Received By:		Relinquished By:		Received By:	
Signature: Jim Cooper	Date: 3/7/13	Signature: [signature]	Date: 3/7/13	Signature:	Date:	Signature:	Date:
Printed Name: Jim Cooper	Time: 11:29	Printed Name: Mackenzie Tirk	Time: 1129	Printed Name:	Time:	Printed Name:	Time:

CSA Element COC

Page ____ of ____

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C183**	Project Mgr:	John O'Donovan
Received:	3/20/13 15:50	WQDB #:	Janus825
Submitted By:	CSA/Consultant		

Sample	Laboratory ID	Matrix	Type	Sample Collection Date Start	Sample Collection Date End	Qualifier
CS-03182013	W13C183-01	Soil	Composite	03/18/13 11:00	03/18/13 11:00	

CS-03182013 : W13C183-01

General Chemistry

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Total solids	**83.0**	% W/W	0.01		B13C387	03/22/13	03/23/13	SM 2540G	

Polychlorinated Biphenyls (PCBs)

PCB Aroclors by GC-ECD

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C439	03/26/13	03/26/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C439	03/26/13	03/26/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C439	03/26/13	03/26/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C439	03/26/13	03/26/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C439	03/26/13	03/26/13	EPA 8082	
Aroclor 1260	**168**	ug/kg dry	10.0	1	B13C439	03/26/13	03/26/13	EPA 8082	B2
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C439	03/26/13	03/26/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C439	03/26/13	03/26/13	EPA 8082	

Surrogate	*Result*	*Expected*	*%Rec*	*Limits(%)*				
Tetrachloro-m-xylene	*11.0*	*11.7*	*93%*	*60.3-141*	*B13C439*	*03/26/13*	*03/26/13*	*EPA 8082*
Decachlorobiphenyl	*11.4*	*11.7*	*97%*	*48.6-164*	*B13C439*	*03/26/13*	*03/26/13*	*EPA 8082*

Reported: 04/03/13 13:16

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C183**	Project Mgr:	John O'Donovan

Quality Control Report

General Chemistry - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
Total Solids - Batch B13C387									
Duplicate (B13C387-DUP1)			**Source: W13C184-04**						
Total solids	**76.2**	% W/W	0.01		77.1		1 *(5)*	03/22/13 :03/23/13	
Duplicate (B13C387-DUP2)			**Source: W13C198-02**						
Total solids	**82.7**	% W/W	0.01		84.7		2 *(5)*	03/22/13 :03/23/13	

Polychlorinated Biphenyls (PCBs) - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
PCB Aroclors by GC-ECD - Batch B13C439									
Blank (B13C439-BLK1)									
Aroclor 1016/1242	ND	ug/kg wet	10.0					03/26/13 :03/26/13	
Aroclor 1221	ND	ug/kg wet	20.0					03/26/13 :03/26/13	
Aroclor 1232	ND	ug/kg wet	10.0					03/26/13 :03/26/13	
Aroclor 1248	ND	ug/kg wet	10.0					03/26/13 :03/26/13	
Aroclor 1254	ND	ug/kg wet	10.0					03/26/13 :03/26/13	
Aroclor 1260	**10.2**	ug/kg wet	10.0					03/26/13 :03/26/13	Z0
Aroclor 1262	ND	ug/kg wet	10.0					03/26/13 :03/26/13	
Aroclor 1268	ND	ug/kg wet	10.0					03/26/13 :03/26/13	
Surrogate									
Tetrachloro-m-xylene	*9.05*		ug/kg wet	*10.0*		90		03/26/13 :03/26/13	
Decachlorobiphenyl	*12.6*		ug/kg wet	*10.0*		126		03/26/13 :03/26/13	
LCS (B13C439-BS1)									
Aroclor 1016/1242	**117.0**	ug/kg wet	10.0	100		117 *(78.7-127)*		03/26/13 :03/26/13	
Aroclor 1260	**119.2**	ug/kg wet	10.0	100		119 *(80.9-139)*		03/26/13 :03/26/13	
Surrogate									
Tetrachloro-m-xylene	*9.83*		ug/kg wet	*10.0*		98 *(60.3-141)*		03/26/13 :03/26/13	
Decachlorobiphenyl	*13.3*		ug/kg wet	*10.0*		133 *(48.6-164)*		03/26/13 :03/26/13	
Matrix Spike (B13C439-MS1)			**Source: W13C205-01**						
Aroclor 1016/1242	ND	ug/kg dry	500	105	ND	*(50.8-144)*		03/26/13 :03/26/13	M18
Aroclor 1260	**4801**	ug/kg dry	500	105	4380	399 *(33-158)*		03/26/13 :03/27/13	M18
Surrogate									
Tetrachloro-m-xylene	*10.1*		ug/kg dry	*10.5*		96 *(60.3-141)*		03/26/13 :03/26/13	
Decachlorobiphenyl	*13.3*		ug/kg dry	*10.5*		127 *(48.6-164)*		03/26/13 :03/26/13	
Matrix Spike Dup (B13C439-MSD1)			**Source: W13C205-01**						
Aroclor 1016/1242	ND	ug/kg dry	500	103	ND	*(50.8-144)*	*(20)*	03/26/13 :03/27/13	M18
Aroclor 1260	**1555**	ug/kg dry	500	103	4380	-2730 *(33-158)*	102 *(20)*	03/26/13 :03/27/13	M18
Surrogate									
Tetrachloro-m-xylene	*10.1*		ug/kg dry	*10.3*		98 *(60.3-141)*		03/26/13 :03/27/13	*SU5*

Reported: 04/03/13 13:16

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Kenton Brass Foundry**	Client:	Coordinated Site Analysis
Work Order:	**W13C183**	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs) - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec *(Limits)*	RPD *(Limit)*	Prepared: Analyzed	Qualifier
PCB Aroclors by GC-ECD - Batch B13C439									
Matrix Spike Dup (B13C439-MSD1)			**Source: W13C205-01**						
Surrogate									
Decachlorobiphenyl	*44.4*		ug/kg dry	*10.3*		430 *(48.6-164)*		03/26/13 :03/27/13	*SU5*

Qualifiers

B2	Analyte was detected in the Method Blank, but at a concentration less than one tenth the amount in the sample(s).
M18	Matrix spike recovery(ies) could not be determined due to required sample dilution.
SU5	Surrogate recovery could not be determined due to required dilution of the sample extract.
Z0	Aroclor 1260 detected in the Method Blank at the reporting limit. All samples in the batch were either 10x higher than the blank or not detected for Aroclor 1260.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference

Reported: 04/03/13 13:16

Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Date: 3-18-2013

Lab Work Order #: W13C183

Collected By: L. Farr

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
Sample Custodian: (503) 823-5696
General Lab: (503) 823-5681

City of Portland Chain-of-Custody

Bureau of Environmental Services

Client Name: Coordinated Site Analysis

Project Name: Kenton Brass Foundry

Project Number (if applicable):

Contact Name:

Requested Analyses

Follow-up Tests:
- ☐ Run TCLP metals if limit exceeded
- ☐ Run SPLP if limit exceeded (indicate which analyses in Remarks field)
- ☐ Run NWTPH-Dx and NWTPH-Gx if detects on NWTPH-HCID
- ☐ Run PAHs if detects on NWTPH-Dx
- ☐ Run VOCs if detects on NWTPH-Gx
- ☐ Run TOC if detects on NWTPH-HCID

Turn-Around-Time Request:
- ☒ Standard (10 business days)
- ☐ Rush (5 business days)
- ☐ Other:

Lab Number	Location ID	Sample Date	Sample Time	Grab or Comp	Sample Matrix	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	PCB Aroclors (low-level)	PAHs	Priority Pollutant 13 Metals	RCRA 8 Metals	Total Metals (As, Cd, Cr, Cu, Pb, Hg, Zn)	Total Metals (Cd, Cr, Pb)	VOCs	TOC					HOLD	# of Containers	Remarks
01	CS-03182013-1	3-18-13	1100	C	S				X													2x 4oz	

Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Grace Taylor	Signature: Rona Klinck	Signature:	Signature:
Date: 3/20/13	Date: 3/20/13	Date:	Date:
Printed Name: Grace Taylor	Printed Name: Rona Klinck	Printed Name:	Printed Name:
Time: 1550	Time: 1550	Time:	Time:

CSA Element COC

APPENDIX E

"Risk-Based Assessment and Cleanup of a Commercial Underground Heating Oil Tank,"
Report Dated October 3, 2013, Alpha Environmental Services, Inc.

RISK-BASED ASSESSMENT AND CLEANUP OF A COMMERCIAL UNDERGROUND HEATING OIL TANK

City of Portland c/o Taryn Meyer
650-668 N Tillamook Street
Portland, Oregon 97227

Date Issued: October 3, 2013
Project Number 13-8748
DEQ File Number 26-13-0349

Prepared For:

CITY OF PORTLAND – BES
COORDINATED SITE ANALYSIS PROGRAM
C/O TARYN MEYER
1120 SW 5TH AVENUE, ROOM 1000
PORTLAND, OR 97204-1912

Prepared By:

Alpha environmental services, inc.
11080 SW ALLEN BLVD, SUITE 100
BEAVERTON, OR 97005
TEL (503) 292-5346 FAX (503) 203-1516

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1.0 INTRODUCTION

Alpha Environmental Services, Inc. (Alpha) was retained by City of Portland -- Bureau of Environmental Services c/o Taryn Meyer to clean up a commercial heating oil tank (HOT) located at 650-668 N Tillamook St, Portland, Oregon (the Site). The Site consists of the former Kenton Brass Foundry and is located in Township 1 North, Range 1 East, in the NE quarter of the SW quarter of Section 27, Willamette Meridian.

A risk based decision making (RBDM) cleanup was deemed the most appropriate course of action. The protocol used is in general conformance with OAR 340-177-0001 through 0120, *Residential Heating Oil Underground Storage Tanks* and the Oregon Department of Environmental Quality (DEQ) guidance document *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites*, dated September 22, 2003 and revised November 15, 2011.

1.1 Scope of Services

The scope of services for this project included:

1. Decommissioning the HOT by removal, an approved method specified in OAR 340-177-0025.
2. Removal of an appropriate volume of petroleum-contaminated soil (PCS) beneath the tank.
3. Collection of sufficient soil samples to determine the full vertical and lateral extent of Site contamination.
4. Submission of the samples to a reputable independent laboratory for chemical analysis using approved analytical methods.
5. Evaluation of the analytical results with respect to State of Oregon underground storage tank regulations.
6. Preparation of a report for submission to the Oregon DEQ documenting findings and analytical data, and requesting a determination that No Further Action is required in accordance with State of Oregon regulations.

1.2 Site History

A specific review of site history was not requested for this project.

2.0 GEOLOGIC/HYDROLOGIC INVESTIGATIONS

2.1 Geology

The Site is situated within the Willamette Valley, which is a portion of the Puget Trough physiographic sub province of the Pacific Mountain System geological province. This area consists of fluviolacustrine sedimentary deposits. Underlying the area is unconsolidated silt, sand, gravel and clay. The thickness of

these deposits is generally less than 100 feet; locally, it may be as great as 150 feet (U.S. Geological Survey, Geologic Map of the Oregon, 1991).

2.2 Hydrology

The auger was advanced 10 feet below the bottom level of the PCS. Groundwater was not encountered during the project activities. No wetlands are located in the immediate vicinity of the Site. The Willamette River is located approximately 0.2 mile southwest of the Site. Because the contamination is limited to the soil only and the river is sufficiently distant, the leaching of contaminants to the river from the PCS was not considered a potential pathway of concern.

2.3 Nearby Wells and Borings

Alpha searched the Oregon Water Resources Department (WRD) records for wells and geotechnical borings completed within one-quarter mile of the Site and examined water level data from wells and geotechnical borings. At nearby wells or borings, the depth to groundwater was 60 and 65 feet bgs (Appendix C). Water wells were not found within one-quarter mile of the Site.

3.0 SITE WORK

3.1 Previous Site Work

Prior to Alpha's initial arrival on the Site, the tank had been cleaned and filled with sand. The three buildings previously on the Site had been removed and the lot was vacant. The city was in the process of removing the top 5.5 feet of soil throughout the site and replacing it with clean gravel fill. Soil samples had been collected, but because the soil represented by those samples was subsequently removed, these results are not discussed in this report but are included in Appendix G.

3.2 Current Site Work

The 650-gallon former HOT was located 10 feet south of former westernmost building, in a generally east-west orientation and at a bottom depth of approximately 66 inches bgs (below ground surface).

The tank was removed by excavator and the sand within it was also removed from the tank. Soil was excavated from the pit to a depth of approximately 9 feet bgs. The removal of the tank allowed careful observation of the entire area of soil beneath the former location of the HOT.

Petroleum-contaminated soil (PCS) below the former tank location, including the soil represented by the original samples, was removed by excavator. Because it was disposed of as part of the general soil removal and disposal throughout the Site, the amount of PCS removed was not weighed. Soil removal continued downward until the excavation sidewalls and floor appeared to be clean. Alpha representatives then collected soil samples with a decontaminated trowel from several inches beneath/beyond the pit floor/walls to confirm the success of the cleanup.

Following the confirmation of laboratory analytical results, the excavation was refilled with gravel as part of general filling throughout the Site. The PCS was disposed of by the City of Portland at Hillsboro Landfill, Hillsboro, Oregon; a copy of the permit is not available to Alpha. The sand formerly filling the tank was disposed of along with the top four feet of soil throughout the Site. The tank was subsequently removed from the Site and recycled (see Appendix A).

Due to site-specific considerations, a limited amount of PCS was left in place. On March 5 and 6, 2013, borings were drilled by a City contractor with a Geoprobe drill rig from which soil samples were collected to delineate the vertical and lateral extent of the pocket of remaining contamination.

3.2 Current Site Work

The City plans to build an office building on the Site for the water bureau, so the future use of the Site is anticipated to be occupational.

4.0 SAMPLE LOCATIONS, ANALYTICAL RESULTS, AND COLLECTION PROCEDURES

4.1 Sample Locations and Analytical Results

Laboratory analysis of the pit floor and wall soil samples by method NW-TPHDx, which quantifies the total petroleum hydrocarbons (TPH) as diesel and heavy oil, identified the presence of a confirmed release at the Site. Laboratory analytical results for samples collected during the investigation are included in Appendix G. Figure 3 shows the locations of the samples. Table 1 presents the results of the diesel analyses (by method NWTPH-Dx). All these samples represent remaining soil at the Site.

Table 1. Sample Locations and TPH Analytical Results

Sample	Location	Depth	Purpose	Result (ppm)	
				Diesel	Heavy Oil
PFE-9'	east end of pit	9'	Additional sample	22,000	ND
PFW -9'	west end of pit	9'	Additional sample	870	ND
PWW-7'	west wall of pit	7'	Additional sample	29,000	ND
PWE-7'	east wall of pit	7'	Confirmation	290	ND
PWN-7'	north wall of pit	7'	Additional sample	2,400	ND
PWS-7'	south wall of pit	7'	Additional sample	4,900	ND
PV-19'	east end of pit	19'	Additional sample	1,800	ND
PFL@18-20'	east end of pit	18-20'	Delineation	ND	ND
NNL@18-20'	12' north of tank	18-20'	Delineation	ND	ND
SL@18-20'	15' south of tank	18-20'	Delineation	ND	ND
EL@18-20'	5' east of tank	18-20'	Delineation	ND	ND
WL@18-20'	4' west of tank	18-20'	Delineation	ND	ND

The laboratory reporting limit for non-detected diesel analyses did not exceed 25 ppm. The reporting limit for the corresponding heavy oil analyses did not exceed 50 ppm.

The sample originally intended to be the vertical sample, PV-19', exceeded 500 ppm Dx. It was collected with a hand auger and was likely contaminated as the auger was advanced through the overlying contaminated soil. Another vertical sample, PFL@18-20', was subsequently collected from the same location with a Geoprobe drill rig, which eliminated the possibility of cross contamination from overlying soil. This sample was thus used in lieu of the first for vertical delineation

4.2 BTEX/PAH Analytical Results

Sample PFE-9' was also analyzed for BTEX and polycyclic (or polynuclear) aromatic hydrocarbons (PAHs). The results and comparisons to generic RBCs (risk-based concentrations) from DEQ, 2003 are presented in Section 5.3.

4.3 Sampling Procedures

Soil samples collected under Alpha's supervision were placed in labeled glass laboratory-supplied jars capped with Teflon®-lined lids; labeled with distinctive designations; and placed in a secure cooler for storage until delivered to The City of Portland Water Pollution Control Laboratory for analysis for Dx and PAHs. This laboratory submitted applicable samples to TestAmerica of Beaverton, Oregon for BTEX analysis. Chain-of-custody protocol was implemented throughout the project.

5.0 RISK- BASED ASSESSMENT

5.1 Conceptual Site Model

The Conceptual Site Model (CSM; see Table 3) is employed to evaluate potential sources, pathways, and receptors relating to contamination at the Site.

Table 3. Conceptual Site Model

Potentially Exposed Population	Exposure Route, Medium and Exposure Point	Was This Pathway Selected?	Reason for Selection or Exclusion
CURRENT AND FUTURE LAND USE: **OCCUPATIONAL** IMPACTED MEDIUM: **SOIL**			
Residents	All	No	Residential housing does not exist and is not reasonably likely to exist in the future
Residents (Urban)	All	No	Urban housing (apartments, condominiums, etc.) does not exist and is not reasonably likely to exist in the future
Adults (Occupational)	All	Yes	An occupational building is planned to exist in the future
Construction Worker	Soil Ingestion, Dermal Contact, or Inhalation of contaminants from on-site PCS (RBC_{SS})	No	All remaining PCS is at least 9 feet bgs
Excavation Workers	Soil Ingestion, Dermal Contact, or Inhalation of contaminants from on-site PCS (RBC_{SS})	No	All remaining PCS is at least 9 feet bgs
Occupational	Soil Ingestion, Dermal Contact, or Inhalation of contaminants from on-site PCS (RBC_{SS})	No	All remaining PCS is at least 9 feet bgs
Occupational	Inhalation of chemicals volatilized to air (RBC_S)	Yes	HOT contaminant plume is within 30' of future occupational structure.
Occupational	Leaching to groundwater followed by ingestion (RBC_{SW})	No	Local groundwater not used for domestic drinking water purposes. Municipal water supply will be provided from surface water sources.

5.2 Calculation of Volume of Remaining Petroleum-Contaminated Soil

A limited amount of PCS was left in place. Borings were drilled by hand to delineate the lateral and vertical extent of the PCS.

The following table details the calculations for the volume of PCS remaining at the Site:

Calculation of Volume of Remaining Petroleum-Contaminated Soil			
Volume (ft.^{3}) = 3.14/12 x h_L x	Vertical extent (h_L) =	**10**	ft.
(D^2+Dd+d^2)	Top diameter (d) =	**10**	ft.
Volume (yd.^{3}) = Volume (ft.^{3})/27	Bottom diameter (D) =	**33**	ft.
Volume (ft.^{3}) = 3.14/12 x 10 ft. (33^2 + (33x 10) + 10^2) ft.^{2} = 3977 ft.^{3} = **148** yd.^{3}			

The volume of petroleum-impacted soil remaining at the site is conservatively estimated at approximately 148 cubic yards. The pocket of PCS has been delineated to within 15 feet (laterally) of the tank pit and no greater than approximately 19 feet bgs.

5.3 Applicable Risk-Based Concentrations (RBCs)

Table 4 shows laboratory analytical results for soil Sample PFE-9' of diesel-range petroleum hydrocarbons and constituents.

Table 4. Analytical Results Versus Generic RBCs, Soil

	RISK-BASED CONCENTRATIONS	LABORATORY ANALYTICAL RESULTS
Exposure Pathway	Vapor Intrusion into Air	
Receptor Scenario	Occupational	
Contaminant of Concern	mg/Kg (ppm)	*mg/Kg (ppm)*
BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES (BTEX)		
Benzene	1.2	*ND < 0.9*
Toluene	-	*ND < 0.9*
Ethylbenzene	12	*1.100*
Xylenes	-	*ND < 3.800*
POLYAROMATIC HYDROCARBONS (PAHs)		
Acenaphthene	-	*5.4*
Anthracene	-	*ND*
Benz[a]anthracene	-	*0.037*
Benzo[b]fluoranthene	-	*ND*
Benzo[k]fluoranthene	-	*ND*
Benzo[a]pyrene	-	*ND*
Chrysene	-	*0.110*
Dibenz[a,h]anthracene	-	*ND*
Fluoranthene	-	*ND*
Fluorene	-	*8.7*
Indeno[1,2,3-cd]pyrene	-	*ND*
Naphthalene	99	*16*
Pyrene	-	*1.2*
DIESEL		
Generic Diesel	-	*22,000*

Notes: ND = not detected

Unless otherwise indicated by a value after a less-than sign, the reporting limits for non-detected constituents did not exceed 6 ppm.

As the previous table shows, the levels of diesel-range petroleum hydrocarbons and constituents do not exceed the applicable generic RBCs detailed in the RBDM Guidance Document Appendix A: Table of RBCs. Based upon available information to date, it appears that PCS remaining at the Site does not pose a substantial threat to human health or to the environment.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

Based on information available as a result of activities performed at the Site by Alpha Environmental Services, Inc., it appears that:

- The maximum concentration of TPH identified in soils remaining at the Site is 29,000 ppm.
- The full vertical and lateral extent of PCS has been delineated.
- Petroleum impacts to soil at the Site attenuate at a depth of approximately 20 feet bgs.
- The volume of remaining PCS at the Site is conservatively estimated at approximately 148 cubic yards.
- Remaining PCS at the Site does not appear to pose a substantial threat to human health or to the environment.

Based upon information contained in this report, remediation at the site has been completed in accordance with OAR 340-177-0001 through -0120.

6.2 Recommendations

Based on the assessment and cleanup completed at the Site and information available at this time, Alpha does not recommend further investigation or action at this time.

6.3 Signatures

This report has been prepared in general accordance with OAR 340-177-0001 through 0120 and DEQ, 2003.

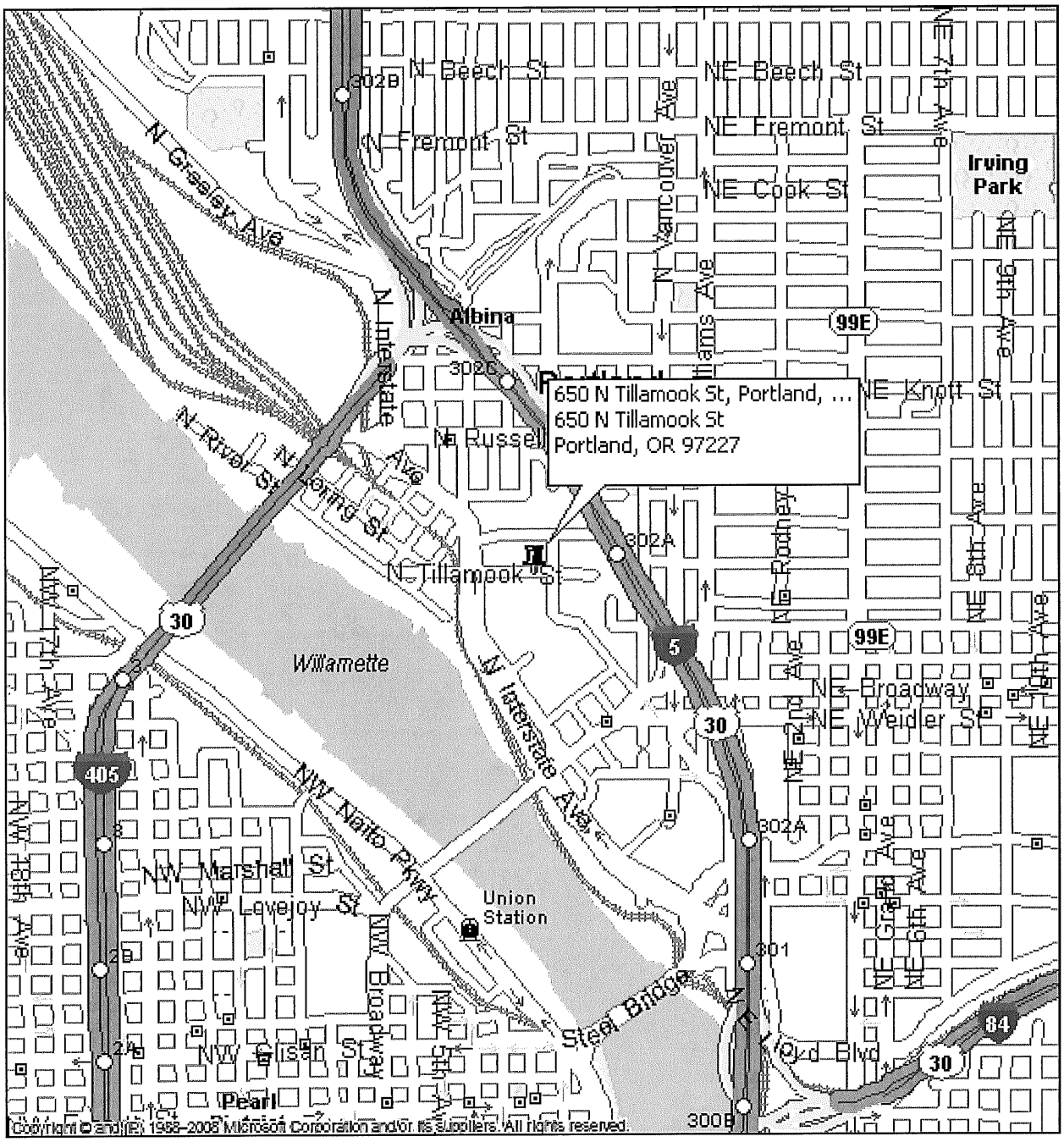
Wayne Bennett

WAYNE BENNETT
OREGON HEATING OIL TANK SUPERVISOR #26656
EXPIRATION: 5/1/14

10/14/13
DATE

ALPHA ENVIRONMENTAL SERVICES, INC.
DEQ LICENSED SERVICE PROVIDER #17703
EXPIRATION: 7/14/13

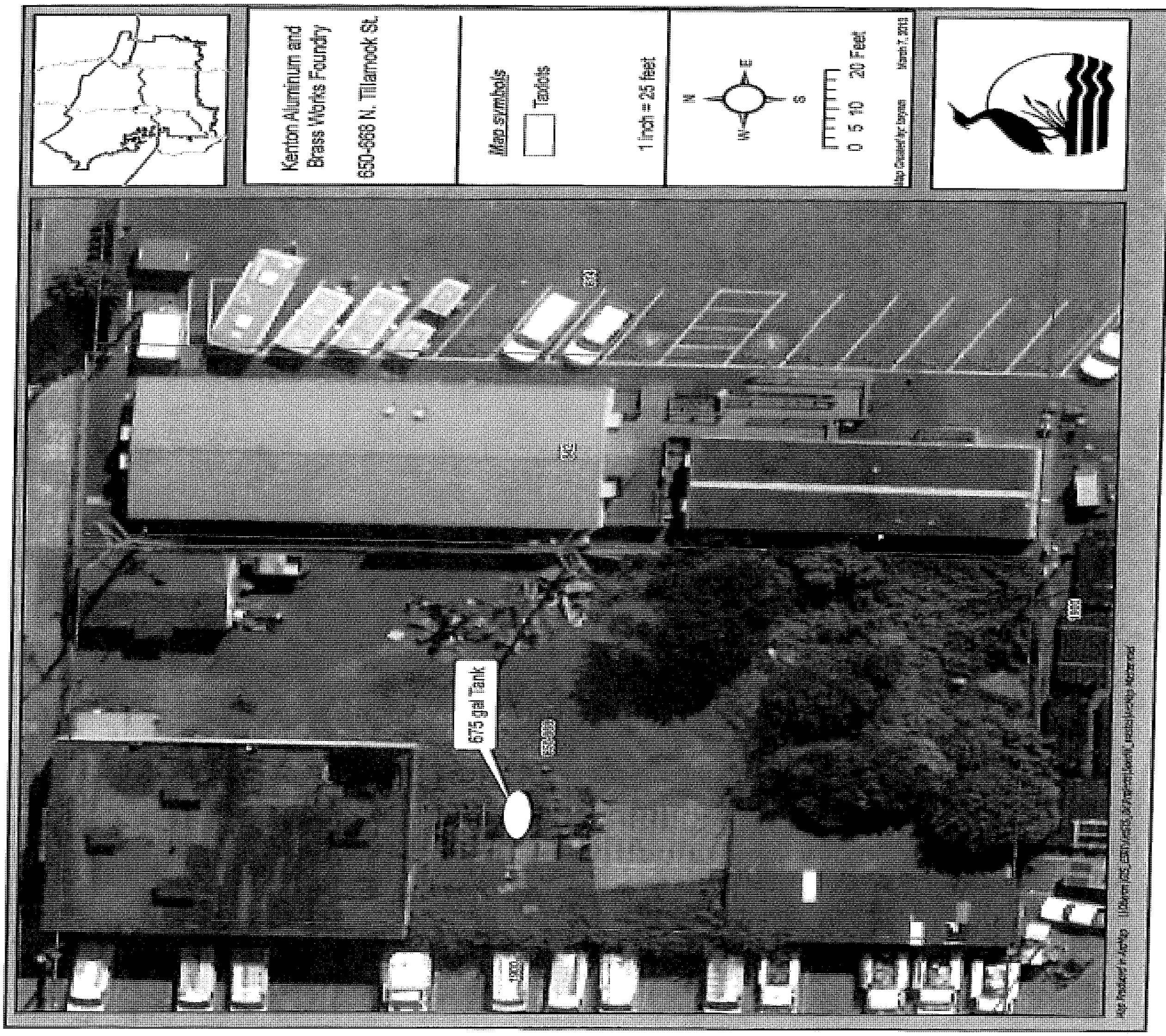
FIGURES



Alpha environmental services, inc.

FIGURE 1: SITE VICINITY MAP

N



Alpha environmental services, inc.

FIGURE 2: SITE PLAN

N

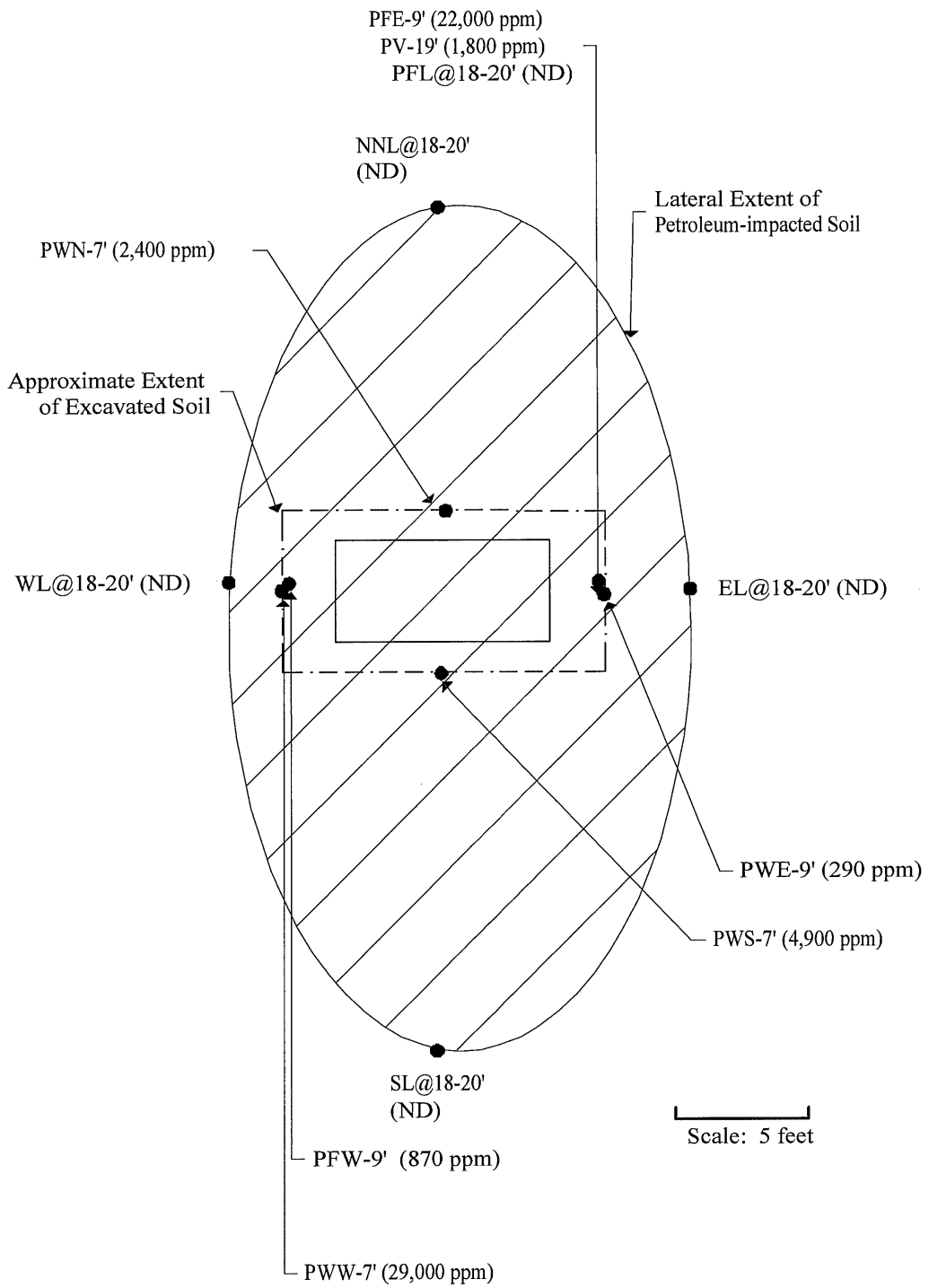


FIGURE 3: SAMPLING PLAN

N

APPENDIX A

RECEIPTS

Far West Fibers
10750 SW Denney Road
Beaverton, OR 97008
(503) 643-9944
(503) 200-5425 FAX

Material Purchase Ticket

Ticket # **139953**

Date: 3/7/2013 8:49:15AM
Scale: BVRTN Truck Scale
Weighmaster Lucia, Sarah

Customer ID - 8227
Ruben Perez

Page 1 of 1
Tracking ID white f250 ALPI-

Driver's License Number:
Vehicle Tag:

Item	Gross	Tare	Net	Price	Total
Ferrous Metal	12,080.0 s 1	11,720.0 s 1	**360.0** LB	**$210.0000** ST	**$37.80**

Ticket Total - **$37.80**

Please Sign Here:
Por Favor Firme Aqui: _____

Thank you!

I, the undersigned, hereby decaire that the property that is subject to this transaction is not, to the best of my knowledge, stolen property. I understand that this statement is made under penalty of perjury and may be used as evidence in court.

Print
Name:_____

APPENDIX B

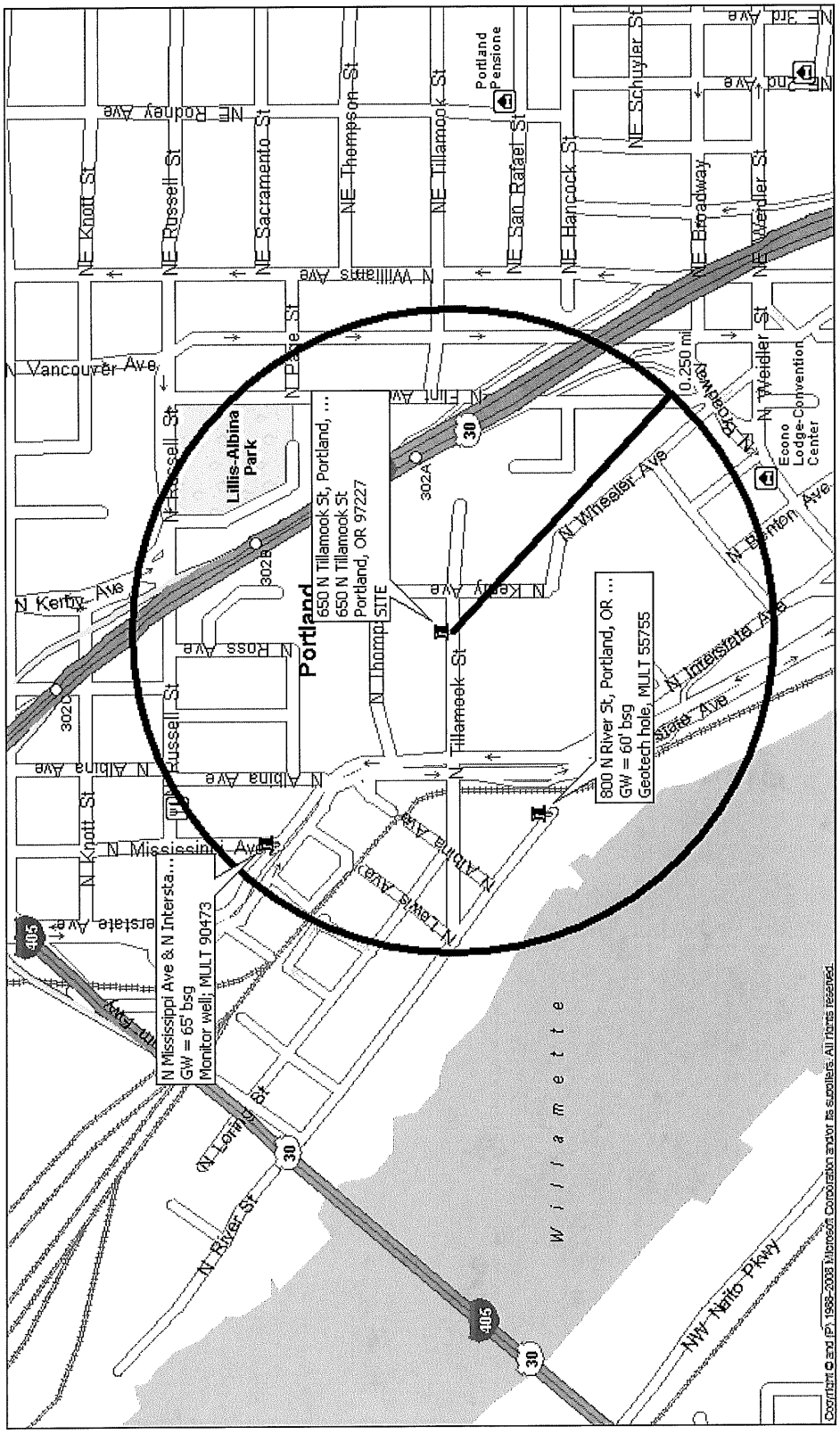
SITE PHOTOGRAPHS

View of the tank being removed and placed in trailer.

View of the soil removal activities.

APPENDIX C

REPRESENTATIVE WATER WELL LOGS


650 N Tillamook St, Portland, ...
650 N Tillamook St
Portland, OR 97227
800 N River St, Portland, OR ...
GW = 60' bsg
Geotech hole, MULT 55755
N Mississippi Ave & N Intersta...
GW = 65' bsg
Monitor well; MULT 90473
Portland
Lillis-Albina Park
Portland Pensione
Econo Lodge-Convention Center
0.250 mi
Willamette
NE Knott St
NE Russell St
NE Sacramento St
NE Thompson St
NE Tillamook St
NE San Rafael St
NE Hancock St
NE Schuyler St
NE Broadway
NE Weidler St
NE Rodney Ave
N Williams Ave
N Vancouver Ave
N Page St
N Flint Ave
N Kerby Ave
N Ross Ave
N Albina Ave
N Mississippi Ave
N Knott St
N Lewis Ave
N Lorin St
N River St
N Wheeler Ave
N Benton Ave
N Interstate Ave
NW Naito Pkwy
302A
302B
302C
30
405

STATE OF OREGON

GEOTECHNICAL HOLE REPORT

MULT 55755

Received date 5/27/1998

(as required by OAR 690-240-035)

(1) OWNER/PROJECT

Hole No.
Co.Job No. BH-3

Name CARGILL, INC.
Street 15615 MCGINTY ROAD WEST
City WAYZATA State MN Zip 55391

(2) TYPE OF WORK

☒ New ☐ Alter (Recondition) ☐ Alter (Repair)
☐ Deepening ☒ Abandonment

(3) CONSTRUCTION

☐ Rotary Air ☐ Hand Auger ☐ Hollow Stem Auger
☒ Rotary Mud ☐ Cable Tool ☐ Push Probe Other

(4) TYPE OF HOLE

☒ Uncased Temporary ☐ Cased Permanent
☐ Uncased Permanent ☐ Slope Stabilit Other

(5) USE OF HOLE

GEOTECHNICAL WELL

(6) BORE HOLE CONSTRUCTION

Special Standards ☐ Depth of completed well 90 ft.

HOLE

Diameter	From	To
5.00	0.00	90

SEAL

From	To	Material	Amount	Seal Grout Weight	Units
0.00	90.00	BE	65.00		G

Backfill placed from ft. TO ft. Material
Filter pack placed from ft. TO ft. Size in.

(7) CASING/SCREEN

Screen ☐

(8) WELL TEST

Permeability Yield GPM
Conductivity PH
Temperature of water °F/C Depth artesian flow found ft.
Was water analysis done? ☐
By Whom?
Depth of strata to be analyzed. From ft. to ft.
Remarks

Name of supervising Geologist/Engineer

(9) LOCATION OF HOLE By legal description

County Multnomah Latitude Longitude
Township 1.00 N Range 1.00 E
Section 27 NE 1/4 NW 1/4
Tax lot 39 Lot Block Subdivision
Legal desc:

Street Address of Well (or nearest address)
800 NORTH RIVER ST

MAP with location indentified must be attached

(10) STATIC WATER LEVEL

60.0 Ft. below land surface. Date 4/24/1998
Artesian Pressure lb/sq. in. Date

(11) SUBSURFACE LOG

Ground Elevation ft.

Material	From	To	SWL
SAND & SILT	0	55	
TROUTDALE FORM	55	90	60

Date started 4/23/1998 Completed 4/23/1998

(12) ABANDONMENT LOG

Date started Completed

Professional Certification

(to be signed by a licensed water supply or monitoring well constructor, or registered geologist or civil engineer).

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon geotechnical hole construction standards. This report is true to the best of my knowledge and belief.

License or Registration Number 10410

Signed By JEFF GINTER Date

Affiliation GEO TECH EXPLORATIONS

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Alpha environmental services, inc.

MULT 90473

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-0395)

09-24-2007

AMENDED 9-26-07

WELL LABEL # L 89315

START CARD # 194227

(1) LAND OWNER

Owner Well I.D. MW-1

First Name _____ Last Name _____

Company CITY OF PORTLAND

Address 1221 SW 4TH AVE

City PORTLAND State OR Zip 97204

(2) TYPE OF WORK

☒ New ☐ Deepening ☐ Conversion ☐ Alteration (repair/recondition) ☐ Abandonment

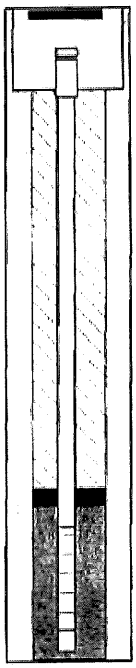
(3) DRILL METHOD

☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Hollow Stem Auger ☐ Cable Mud ☐ Reverse Rotary ☒ Other PUSH PROBE

(4) CONSTRUCTION

Piezometer Well ☐

Depth of Completed Well 72 ft. Special Standard ☐



MONUMENT/VAULT Below Ground

From 0 To 1

BORE HOLE

Diameter ~~2.25~~ 3.5 From 0 To 72

CASING

Dia ~~2.25~~ .75 From 0 To 62

Gauge SCH 40 Wld Thrd

Material ○ Steel ◉ Plastic ☐ ☒

LINER

Dia. _____ From _____ To _____

Gauge _____ Wld Thrd

Material ○ Steel ○ Plastic ☐ ☐

SEAL

From 1 To 60

Material Bentonite

Amount 2.00 S Grout weight _____

SCREEN

Casing/Liner _____ Material PVC

Diameter ~~2.25~~ .75 From 62 To 72

Slot Size .010

FILTER

From 60 To 72 Material SAND Size of pack 10/20

(5) WELL TESTS

○ Pump ○ Bailer ○ Air ○ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Temperature 53 °F Lab analysis ☐ Yes By _____

Supervising Geologist/Engineer _____

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

(6) LOCATION OF WELL (legal description)

County Multnomah Twp 1.00 N N/S Range 1.00 E E/W WM

Sec 27 SW 1/4 of the NE 1/4 Tax Lot R. O. W.

Tax Map Number _____ Lot _____

Lat ° 0 ' " or _____ DMS or DD

Long ° 0 ' " or _____ DMS or DD

○ Street address of well ◉ Nearest address

MISSISSIPPI AVE, 30 FEET FROM N INTERSTATE AVE

(7) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Predeepening				
Completed Well	09-11-2007			65

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES Depth water was first found _____

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(8) WELL LOG

Ground Elevation _____

Material	From	To
GRAVEL	0	10
FINE BROWN SAND	10	60
SILTY SAND	60	72

RECEIVED
SEP 27 2007
WATER RESOURCES DEPT
SALEM, OREGON

Date Started 09-11-2007 Completed 09-11-2007

(unbonded) Monitor Well Constructor Certification

I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon monitoring well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number 10560 Date 09-24-2007

Electronically Submitted

Signed DON 'GREG' FARMER (E-filed)

(bonded) Monitor Well Constructor Certification

I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon monitoring well construction standards. This report is true to the best of my knowledge and belief.

License Number 10408 Date 09-24-2007

Electronically Submitted

Signed PETER S LARSEN (E-filed)

Contact Info (optional)

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version: 0.31

APPENDIX D

RISK-BASED DECISION MAKING CALCULATIONS

Risk-Based Concentrations for TPH : **Site-Specific Data**

Fuel Fraction	RBCss					RBCso			RBCsi			
	Residential	Urban Residential	Occupational	Construction Worker	Excavation Worker	Residential	Urban Residential	Occupational	Residential	Urban Residential	Occupational	Residential
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aliphatic: C5-C6	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Aliphatic: >C6-C8	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Aliphatic: >C8-C10	2.7E-02	2.8E-02	2.1E-02	1.8E-02	3.2E-03	1.1E-02	1.1E-02	2.8E-03	9.3E-03	9.3E-03	7.8E-04	1.7E-04
Aliphatic: >C10-C12	7.9E-02	7.3E-02	6.1E-02	6.0E-02	1.1E-02	3.8E-03	3.8E-03	9.6E-04	3.1E-03	3.1E-03	2.6E-04	3.8E-05
Aliphatic: >C12-C16	3.4E-01	3.5E-01	3.9E-01	3.9E-01	7.1E-02	1.5E-03	1.5E-03	3.7E-04	1.2E-03	1.2E-03	1.0E-04	1.3E-06
Aliphatic: >C16-C21	1.7E-02	1.7E-02	1.9E-02	1.9E-02	3.5E-03	5.0E-06	5.0E-06	1.2E-06	4.1E-06	4.1E-06	3.4E-07	1.5E-10
Aliphatic: >C21-C34	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Aromatic: >C8-C10	1.3E-02	1.3E-02	8.5E-03	6.2E-03	1.1E-03	7.0E-03	7.0E-03	1.7E-03	5.7E-03	5.7E-03	4.8E-04	1.4E-02
Aromatic: >C10-C12	2.8E-02	2.5E-02	1.8E-02	1.7E-02	2.9E-03	2.1E-03	2.1E-03	5.3E-04	1.7E-03	1.7E-03	1.5E-04	1.5E-02
Aromatic: >C12-C16	1.9E-01	1.8E-01	1.7E-01	1.7E-01	3.0E-02	1.8E-03	1.8E-03	4.4E-04	1.4E-03	1.4E-03	1.2E-04	3.2E-02
Aromatic: >C16-C21	3.1E-01	3.1E-01	3.2E-01	3.2E-01	5.9E-02	1.1E-04	1.1E-04	2.9E-05	9.4E-05	9.4E-05	7.8E-06	7.8E-03
Aromatic: >C21-C34	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
n-Hexane	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Benzene	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Toluene	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ethylbenzene	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Total Xylenes	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
1,2,4-trimethylbenzene	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
1,3,5-trimethylbenzene	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Naphthalene	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
TPH RBC* →	**5,500**	**11,000**	**79,000**	**25,000**	**>MAX**	**>MAX**	**>MAX**	**>MAX**	**>MAX**	**>MAX**	**>MAX**	**>MAX**
Generic Gasoline	720	1,500	22,000	13,000	>MAX	4,500	4,500	80,000	140	140	>MAX	26
Generic Diesel / Heating Oil	3,900	8,300	70,000	23,000	>MAX	>MAX	>MAX	>MAX	>MAX	>MAX	>MAX	2,800
Generic Mineral Insulating Oil	9,800	20,000	>MAX	40,000	>MAX	>MAX	>MAX	>MAX	>MAX	>MAX	>MAX	>MAX

* The TPH RBCs are based on a Hazard Index = 1 for the sum of all aliphatic fractions, aromatic fractions, and constituents present in the product.

The data in the gray area of the main table above represent the following:

1. For direct pathways the data are the RBCs for the specified fuel fraction or constituent.
2. For indirect pathways the data are the hazard quotients for the specified fuel fraction or constituent.

For notes and references, please refer to *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (DEQ, 2003).

APPENDIX E

CLEANUP CHECKLIST

State of Oregon Department of Environmental Quality

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

Underground Storage Tank Program

HEATING OIL TANK SERVICES SERVICE PROVIDER REPORT CERTIFICATION

CLEANUP CHECKLIST

July 3,
Form No. HOT-CuCklst.2.0

This checklist is divided into five sections. **Section A must be completed for all cleanup projects.** Complete Sections B, C, D, or E as appropriate for the type of cleanup option selected. The checklist must be filled out as completely as possible and any exceptions noted for the certification to be valid.

GENERAL INFORMATION

Tank Owner Name: City of Portland -- Bureau of Environmental Services c/o Taryn Meyer

Tank Site Address: 650-668 N Tillamook St, Portland, OR 97227

DEQ Cleanup File Number: 26-13-0349

Date Release Reported: 3/29/13

Licensed HOT Service Provider Company Name: ALPHA ENVIRONMENTAL SERVICES, INC.

17703 — License Number

07/14/13 — Expiration Date

✓ **Check each item as complete and correct.** By checking any of the boxes in this checklist, you are indicating that the statement applies to this project. If there are any exceptions to the statement, please note them in the comment area provided at the end of the checklist. If the statement does not apply, please do not check the box.

NOTE: TPH = Total Petroleum Hydrocarbons as diesel by method NWTPH-Dx

Note: The submittal of this checklist does not replace a final cleanup report

This checklist MUST be signed and dated on page 4

SECTION A - ALL CLEANUP PROJECTS

☒ A1. The release of petroleum was reported to DEQ (OAR 340-163-0020(4)).

☒ A2. No free product is present or was removed during initial abatement actions.

☐ A3. Water is present at the site and DEQ was notified. Please note the name of the DEQ Staff person notified and the date of notification _____.

☒ A4. A site sketch, drawn approximately to scale, is included in the report (OAR 340-122-0345) which clearly shows:

- ☒ The location of all buildings and other key features, both man-made and natural;
- ☒ The names of adjacent streets and properties;
- ☒ The location of all excavations including those that were for the removal of tanks and associated piping as well as those that were strictly for the removal of contaminated soils;
- ☒ The location of all identified underground storage tanks, including those that were decommissioned as well as those that remain on the site in the vicinity of the cleanup;
- ☒ All soil and water sample locations including sample depths and analytical results; and
- ☒ Location of remaining contaminated soil (for risk-based decision making and generic remedy only).

☒ A5. All soil and/or water samples have been properly collected, coded, stored, shipped, and analyzed as required, and chain-of-custody forms have been filled out (OAR 340-122-0218, 340-122-0340 and 340-122-0345).

CHECK EITHER A6a or A6b, NOT BOTH

☒ A6a. Petroleum-contaminated soil has been removed from the property and properly handled, disposed of, or treated.

Amount of soil taken off-site for treatment/disposal: unknown.

Disposal/treatment location: Hillsboro Landfill, Hillsboro, OR.

☐ A6b. No petroleum-contaminated soil removal occurred.

☒ A7. A report has been prepared which includes a detailed description of everything that was observed and performed at the site and contains all of the information required by (check one):

- ☐ OAR 340-122-0360 and OAR 340-177-0055
- ☐ DEQ's "Heating Oil Tank Generic Remedy Guidance Document" (January 24, 2000)
- ☒ DEQ's "Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites" (September, 2003)

For Soil Matrix cleanup project, complete Section B.

♦

For Generic Remedy cleanup project, complete Section C.

♦

For Risk-Based cleanup project (simple, soil-only), complete Section D.

♦

Complete Section E for:

All sites where groundwater is encountered and soil matrix standards for closure are not met.

All sites where heating oil tank constituent concentrations exceed the risk based concentrations in Appendix A of the DEQ's "Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites" (September, 2003).

SECTION B - SOIL MATRIX CLEANUP

☐ B8. No contaminated soil exceeding the soil matrix level established for this site remains onsite. If a pocket of contamination exceeding the matrix level remains, use the appropriate checklist in Section C, D, or E instead.

CHECK EITHER B9a or B9b, NOT BOTH

☐ B9a. TPH concentrations were all below 100 mg/kg.

☐ B9b. TPH concentrations greater than 100 mg/kg remain in the soil and a Matrix Score Sheet has been completed. Supporting documentation for the matrix evaluation is included in the report. This project is a (check one):

☐ Level 2 site (500 ppm TPH)
☐ Level 3 site (1,000 ppm TPH)

☐ B10. Groundwater was encountered, but no benzene, toluene, ethylbenzene, and total xylenes (BTEX) or polynuclear aromatic hydrocarbons (PAHs) were detected in water above risk-based concentrations. No BTEX was detected in soil samples collected from the soil/water interface pursuant to OAR-340-122-340.

SECTION C - GENERIC REMEDY

☐ C8. Contamination is limited to soil only, and the remaining contaminated soil is a minimum of ____ feet above the seasonal high groundwater level.

☐ C9. The magnitude and extent of contamination has been clearly delineated both horizontally and vertically to at least 500 mg/kg TPH.

☐ C10. The volume of contaminated soil remaining in the subsurface above 500 mg/kg TPH is less than 65 cubic yards. Volume calculations are included in the cleanup report.

☐ C11. Any contaminated soil left in place is deeper than 3 feet below ground surface.

☐ C12. The maximum heating oil TPH concentration remaining in the soil is less than 10,000 mg/kg. The maximum TPH concentration detected remaining in the soil is _____ (mg/kg).

☐ C13. Contaminated soil left in place is greater than 2,500 mg/kg TPH. A representative soil sample was collected from the most contaminated soil remaining at the site and analyzed for benzene. No benzene was detected in the soil in excess of 0.1 ppm.

SECTION D - SOIL ONLY RISK-BASED EVALUATIONS

☒ D8. Contamination is limited to soil only. The magnitude and extent of heating oil contamination (as TPH), has been clearly delineated vertically and horizontally (OAR 340-122-0240). *Note: It is often a site-by-site decision on the adequacy of this determination. Contact the Department if there are questions on this issue.*

☒ D9. A sample representative of the most contaminated soil remaining at the site was obtained and analyzed. No BTEX or PAHs were detected in the soil in excess of any risk-based concentration in DEQ's "Risk-Based Decision Making for the Remediation of Petroleum Contaminated Sites" (September 2003) guidance document.

SECTION E - GROUNDWATER AND COMPLEX RISK-BASED EVALUATIONS

Note: These certifications are complex and may require Department involvement. Please contact the Department for assistance as appropriate.

☐ E8. The magnitude and extent of heating oil contamination as TPH in soil, and BTEX & PAHs in groundwater, have been clearly delineated vertically and horizontally (OAR 340-122-0240). *Note: It is often a site-by-site decision on the adequacy of this determination. Contact the Department if there are questions on this issue.*

☐ E9. A mass balance calculation for vapor intrusion into the structure of benzene was performed using the air screening model posted on the Department's web page at www.deq.state.or.us/wmc/tank/ust-lust.htm.

☐ E10. A detailed risk based evaluation has been conducted and the site has been found to be in compliance with OAR 340-122-0205 through 340-122-260. A detailed report documenting the finding has been prepared.

General Comments:

SIGNATURE

Licensed HOT Supervisor Name: Wayne Bennett

26656 — License Number

5/1/2014 — Expiration Date

Check the correct box for each section completed in this checklist:

☒ Section A *AND* ☐ Section B *OR* ☐ Section C *OR* ☐ Section D *OR* ☒ Section E

"By my signature below, I state that the information contained in this checklist is true and complete to the best of my knowledge."

Supervisor Signature: Wayne Bennett Date: 10/14/13

ADDITIONAL SIGNATURE

Licensed HOT Supervisor Name: Zachary Goodman

26796 — License Number

2/23/2014 — Expiration Date

"By my signature below, I state that the information contained in this checklist is true and complete to the best of my knowledge."

Supervisor Signature: Zachary J Goodman Date: 10/14/13

APPENDIX F

BORING LOGS

STATE OF OREGON
GEOTECHNICAL HOLE REPORT
(as required by OAR 690-240-035)

(1) OWNER/PROJECT: Hole No. PV-19"
Project 13-8748

Name City of Portland -- Bureau of Environmental Services c/o

Taryn Meyer

Address 650-668 N Tillamook St

City Portland State OR Zip 97227

(2) TYPE OF WORK

☒ New ☐ Deepening ☐ Alteration (repair/recondition)
☒ Abandonment

(3) CONSTRUCTION

☐ Rotary Air ☒ Hand Auger ☐ Hollow Stem Auger
☐ Rotary Mud ☐ Cable Tool ☐ Push Probe ☐ Other ☐

(4) TYPE OF HOLE

☒Uncased Temporary ☐ Cased Permanent
☐ Uncased Permanent ☐ Slope Stability ☐ Other

(5) USE OF HOLE: Environmental sampling (soil)

(6) BORE HOLE CONSTRUCTION:
Special Standards ☐ Yes ☒ No Depth of Completed Hole _19 ft

HOLE

Diameter	From	To
1"	0	19'

SEAL

Material	From	To	Sacks or pounds

Backfill placed from ft. TO ft. Material
Filter pack placed from ft. TO ft. Size in.

(7) CASING/SCREEN: NO

(8) WELL TEST: NO

(9) LOCATION OF HOLE by legal description:
County Multnomah Lat Long.
Township 1N Range 1E
Section 27 NE ¼ SW ¼
Tax lot 8900 Lot Block Subdivision
Street Address of Well (or nearest address)
650-668 N Tillamook St
Map with location identified must be attached

(10) STATIC WATER LEVEL:
N/A ft. below land surface Date
Artesian pressure lb per sq in Date

(11) SUBSURFACE LOG
Ground Elevation feet above mean sea level

Material Description	From	To	SWL
Silts/sand	0	19'	

Date Started 3/5/13 Date Completed 3/5/13

(12) ABANDONMENT LOG

Material Description	From	To	Sacks or Pounds
Bentonite	0	19'	18 lbs

Date Started 3/5/13 Date Completed 3/5/13

Professional Certification
(to be signed by a licensed water supply or monitoring well constructor, or registered geologist or professional engineer)

I accept responsibility for the construction, alteration, or abandonment work performed on during the construction dates reported above. All work performed during this time is in compliance with Oregon's geotechnical hole construction standards. This report is true to the best of my knowledge and belief.
License or Registration Number G2203

Signed Date
Jim Cooper

Affiliation Alpha Environmental Services, Inc.

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

APPENDIX G

LABORATORY REPORTS

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5666

LABORATORY ANALYSIS REPORT

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C078	Project Mgr:	John O'Donovan
Received:	3/7/13 11:29	WQDB #:	Janus825
Submitted By:	CSA/Consultant		

Sample	Laboratory ID	Matrix	Type	Sample Collection Date Start	End	Qualifier
PFL@18-20'	W13C078-01	Soil	Composite	03/06/13 15:42	03/06/13 15:42	
NNL@18-20'	W13C078-02	Soil	Composite	03/06/13 16:52	03/06/13 16:52	
WL@18-20'	W13C078-03	Soil	Composite	03/06/13 17:19	03/06/13 17:19	
EL@18-20'	W13C078-04	Soil	Composite	03/06/13 17:41	03/06/13 17:41	
SL@18-20'	W13C078-05	Soil	Composite	03/06/13 18:07	03/06/13 18:07	

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
General Chemistry									
Total Solids									
PFL@18-20' : W13C078-01									
Total solids	72.6	% WW	0.01		B13C204	03/12/13	03/13/13	SM 2540G	
NNL@18-20' : W13C078-02									
Total solids	67.1	% WW	0.01		B13C204	03/12/13	03/13/13	SM 2540G	
WL@18-20' : W13C078-03									
Total solids	66.4	% WW	0.01		B13C204	03/12/13	03/13/13	SM 2540G	
EL@18-20' : W13C078-04									
Total solids	70.6	% WW	0.01		B13C204	03/12/13	03/13/13	SM 2540G	
SL@18-20' : W13C078-05									
Total solids	73.7	% WW	0.01		B13C204	03/12/13	03/13/13	SM 2540G	

Reported: 03/21/13 13:12

Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5666

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C078	Project Mgr:	John O'Donovan

Analyte	Result	Units		MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Fuels										
Diesel/Oil Hydrocarbons by GC-FID										
PFL@18-20' : W13C078-01										
Diesel	ND	mg/kg dry		25	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		50	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*					
2-Fluorobiphenyl	*24.2*		*24.4*	*99%*	*50-150*	*B13C185*	*03/11/13*	*03/11/13*	*NWTPH-Dx*	
NNL@18-20' : W13C078-02										
Diesel	ND	mg/kg dry		25	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		50	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*					
2-Fluorobiphenyl	*27.2*		*28.0*	*97%*	*50-150*	*B13C185*	*03/11/13*	*03/11/13*	*NWTPH-Dx*	
WL@18-20' : W13C078-03										
Diesel	ND	mg/kg dry		25	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		50	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*					
2-Fluorobiphenyl	*26.4*		*26.7*	*99%*	*50-150*	*B13C185*	*03/11/13*	*03/11/13*	*NWTPH-Dx*	
EL@18-20' : W13C078-04										
Diesel	ND	mg/kg dry		25	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		50	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*					
2-Fluorobiphenyl	*24.7*		*25.3*	*97%*	*50-150*	*B13C185*	*03/11/13*	*03/11/13*	*NWTPH-Dx*	
SL@18-20' : W13C078-05										
Diesel	ND	mg/kg dry		25	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		50	1	B13C185	03/11/13	03/11/13	NWTPH-Dx	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*					
2-Fluorobiphenyl	*24.2*		*23.9*	*101%*	*50-150*	*B13C185*	*03/11/13*	*03/11/13*	*NWTPH-Dx*	

Reported: 03/21/13 13:12

Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5666

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C078	Project Mgr:	John O'Donovan

Quality Control Report

General Chemistry - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Solids - Batch B13C204									
Duplicate (B13C204-DUP1)			Source: W13C078-04						
Total solids	70.2	% WW	0.01		70.6		0.6 (5)	03/12/13 :03/13/13	

Fuels - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Diesel/Oil Hydrocarbons by GC-FID - Batch B13C185									
Blank (B13C185-BLK1)									
Diesel	ND	mg/kg wet	25					03/11/13 :03/11/13	
Lube oil	ND	mg/kg wet	50					03/11/13 :03/11/13	
Surrogate									
2-Fluorobiphenyl	19.7		mg/kg wet	20.0		98		03/11/13 :03/11/13	
LCS (B13C185-BS1)									
Diesel	81.4	mg/kg wet	25	100		81 (50-150)		03/11/13 :03/11/13	
Lube oil	94.7	mg/kg wet	50	100		95 (50-150)		03/11/13 :03/11/13	
Surrogate									
2-Fluorobiphenyl	21.5		mg/kg wet	20.0		107 (50-150)		03/11/13 :03/11/13	
Duplicate (B13C185-DUP1)			Source: W13C074-03						
Diesel	ND	mg/kg dry	25		ND		(50)	03/11/13 :03/11/13	
Lube oil	243	mg/kg dry	50		117		70 (50)	03/11/13 :03/11/13	M1
Surrogate									
2-Fluorobiphenyl	22.7		mg/kg dry	21.8		104		03/11/13 :03/11/13	

Qualifiers

M1 Matrix duplicate precision measurement indicates non-homogeneous sample matrix. Sample result should be considered an estimate.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference

Reported: 03/21/13 13:12

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
Sample Custodian: (503) 823-5696
General Lab: (503) 823-5681

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 3/7/13

Lab Work Order #: W13C078

Collected By: J. COOPER

Client Name: Coordinated Site Analysis

Project Name: KENTON BRASS FOUNDRY

Project Number (if applicable):

Contact Name:

Requested Analyses

Follow-up Tests:
- ☐ Run TCLP metals if limit exceeded
- ☐ Run SPLP if limit exceeded (indicate which analyses in Remarks field)
- ☐ Run NWTPH-Dx and NWTPH-Gx if detects on NWTPH-HCID
- ☐ Run PAHs if detects on NWTPH-Dx
- ☐ Run VOCs if detects on NWTPH-Gx
- ☐ Run TOC if detects on NWTPH-HCID

Turn-Around-Time Request:
- ☐ Standard (10 business days)
- ☐ Rush (5 business days)
- ☐ Other:

Lab Number	Location ID	Sample Date	Sample Time (PT)	Grab or Comp	Sample Matrix	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	PCB Aroclors (low-level)	PAHs	Priority Pollutant 13 Metals	RCRA 8 Metals	Total Metals (As, Cd, Cr, Cu, Pb, Hg, Zn)	Total Metals (Cd, Cr, Pb)	VOCs	TOC	HOLD	# of Containers	Remarks
01	PFL @18-20'	3/6/13	3:42	C	S		X												HOLD FOR DX
	NL @18-20'		4:16			DISCARD													HOLD PFG-2' PFW-5'
02	NNL @18-20'		4:52	C			X												
03	WL @18-20'		5:19	C			X												
04	EL @18-20'		5:41	C			X												
05	SL @18-20'		6:07	C			X												
	WL @16-18'		5:16			DISCARD													HOLD

Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Jim Cooper	Signature:	Signature:	Signature:
Date: 3/7/13	Date: 3/7/13	Date:	Date:
Printed Name: Jim Cooper	Printed Name: MacKenzie Tirk	Printed Name:	Printed Name:
Time: 11:29	Time: 1129	Time:	Time:

CSA Element COC.

Page 4 of 4

Page ____ of ____

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

LABORATORY ANALYSIS REPORT

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C040	Project Mgr:	John O'Donovan
Received:	3/5/13 15:05	WQDB #:	Janus825
Submitted By:	CSA/Consultant		

Sample	Laboratory ID	Matrix	Type	Sample Collection Date Start	End	Qualifier
PFE-9'	W13C040-01	Soil	Grab	03/05/13 11:20	03/05/13 11:20	
PFW-9'	W13C040-02	Soil	Grab	03/05/13 11:20	03/05/13 11:20	
PWW-7'	W13C040-03	Soil	Grab	03/05/13 11:20	03/05/13 11:20	
PWE-7'	W13C040-04	Soil	Grab	03/05/13 11:20	03/05/13 11:20	
PWN-7'	W13C040-05	Soil	Grab	03/05/13 11:20	03/05/13 11:20	
PWS-7'	W13C040-06	Soil	Grab	03/05/13 11:20	03/05/13 11:20	
PV-19'	W13C040-07	Soil	Grab	03/05/13 11:20	03/05/13 11:20	

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
General Chemistry									
Total Solids									
PFE-9' : W13C040-01									
Total solids	70.9	% WW	0.01		B13C111	03/06/13	03/07/13	SM 2540G	
PFW-9' : W13C040-02									
Total solids	70.3	% WW	0.01		B13C111	03/06/13	03/07/13	SM 2540G	
PWW-7' : W13C040-03									
Total solids	72.1	% WW	0.01		B13C111	03/06/13	03/07/13	SM 2540G	
PWE-7' : W13C040-04									
Total solids	70.1	% WW	0.01		B13C111	03/06/13	03/07/13	SM 2540G	
PWN-7' : W13C040-05									
Total solids	73.7	% WW	0.01		B13C111	03/06/13	03/07/13	SM 2540G	
PWS-7' : W13C040-06									
Total solids	73.8	% WW	0.01		B13C111	03/06/13	03/07/13	SM 2540G	
PV-19' : W13C040-07									
Total solids	73.8	% WW	0.01		B13C111	03/06/13	03/07/13	SM 2540G	

Reported: 03/27/13 14:52

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C040	Project Mgr:	John O'Donovan

Fuels

Diesel/Oil Hydrocarbons by GC-FID

Analyte	Result	Units		MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
PFE-9' : W13C040-01										
Diesel	22000	mg/kg dry		750	30	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		1500	30	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*					
2-Fluorobiphenyl	*246*		*24.9*	*988%*	*50-150*	*B13C130*	*03/07/13*	*03/07/13*	*NWTPH-Dx*	*SU7*
PFW-9' : W13C040-02										
Diesel	870	mg/kg dry		250	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		500	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*					
2-Fluorobiphenyl	*34.7*		*25.5*	*136%*	*50-150*	*B13C130*	*03/07/13*	*03/07/13*	*NWTPH-Dx*	
PWW-7' : W13C040-03										
Diesel	29000	mg/kg dry		1200	50	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		2500	50	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*					
2-Fluorobiphenyl	*355*		*24.4*	*1450%*	*50-150*	*B13C130*	*03/07/13*	*03/07/13*	*NWTPH-Dx*	*SU7*
PWE-7' : W13C040-04										
Diesel	290	mg/kg dry		25	1	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		50	1	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*					
2-Fluorobiphenyl	*31.0*		*26.2*	*118%*	*50-150*	*B13C130*	*03/07/13*	*03/07/13*	*NWTPH-Dx*	
PWN-7' : W13C040-05										
Diesel	2400	mg/kg dry		250	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		500	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*					
2-Fluorobiphenyl	*49.7*		*23.5*	*211%*	*50-150*	*B13C130*	*03/07/13*	*03/07/13*	*NWTPH-Dx*	*SU7*
PWS-7' : W13C040-06										
Diesel	4900	mg/kg dry		250	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		500	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*					
2-Fluorobiphenyl	*82.9*		*23.7*	*349%*	*50-150*	*B13C130*	*03/07/13*	*03/07/13*	*NWTPH-Dx*	*SU7*
PV-19' : W13C040-07										
Diesel	1800	mg/kg dry		250	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Lube oil	ND	mg/kg dry		500	10	B13C130	03/07/13	03/07/13	NWTPH-Dx	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*					
2-Fluorobiphenyl	*34.7*		*25.5*	*136%*	*50-150*	*B13C130*	*03/07/13*	*03/07/13*	*NWTPH-Dx*	

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5666

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C040	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
PFE-9' : W13C040-01									
Acenaphthene	5400	ug/kg dry	200	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	6000	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Benzo(a)anthracene	37	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	110	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	500	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Fluorene	8700	ug/kg dry	200	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	16000	ug/kg dry	400	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	30000	ug/kg dry	600	300	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	1200	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Surrogate	*Result*	*Expected*	*%Rec*	*Limits(%)*					
2-Methylnaphthalene-d10	*170*	*124*	*139%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	*SU7*
Fluoranthene-d10	*210*	*124*	*170%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	*SU7*
PFW-9' : W13C040-02									
Acenaphthene	250	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	400	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Fluorene	440	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	1000	ug/kg dry	40	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	1400	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	62	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Surrogate	*Result*	*Expected*	*%Rec*	*Limits(%)*					
2-Methylnaphthalene-d10	*94*	*127*	*74%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	
Fluoranthene-d10	*110*	*127*	*83%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	
PWW-7' : W13C040-03									

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Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5666

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C040	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
PWW-7' : W13C040-03									
Acenaphthene	8200	ug/kg dry	200	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	10000	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Benzo(a)anthracene	21	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	51	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	600	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Fluorene	14000	ug/kg dry	200	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	10000	ug/kg dry	400	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	46000	ug/kg dry	600	300	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	1200	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Surrogate	*Result*	*Expected*	*%Rec*	*Limits(%)*					
2-Methylnaphthalene-d10	*140*	*122*	*116%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	
Fluoranthene-d10	*260*	*122*	*213%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	*SU7*
PWE-7' : W13C040-04									
Acenaphthene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	100	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluorene	87	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	270	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	14	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Surrogate	*Result*	*Expected*	*%Rec*	*Limits(%)*					
2-Methylnaphthalene-d10	*100*	*131*	*78%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	
Fluoranthene-d10	*120*	*131*	*89%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	
PWN-7' : W13C040-05									

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Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C040	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
PWN-7' : W13C040-05									
Acenaphthene	650	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	1000	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	50	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Fluorene	1200	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	540	ug/kg dry	40	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	4600	ug/kg dry	200	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	160	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Surrogate	*Result*	*Expected*	*%Rec*	*Limits(%)*					
2-Methylnaphthalene-d10	*120*	*118*	*104%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	
Fluoranthene-d10	*110*	*118*	*97%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	
PWS-7' : W13C040-06									
Acenaphthene	230	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	1500	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	28	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	100	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Fluorene	680	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	180	ug/kg dry	40	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	3900	ug/kg dry	200	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	380	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Surrogate	*Result*	*Expected*	*%Rec*	*Limits(%)*					
2-Methylnaphthalene-d10	*220*	*119*	*188%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	*SU7*
Fluoranthene-d10	*120*	*119*	*101%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*	
PV-19' : W13C040-07									

Reported: 03/27/13 14:52

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5666

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C040	Project Mgr:	John O'Donovan

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Semivolatile Organics - SIM									
Polynuclear Aromatic Hydrocarbons by GCMS-SIM									
PV-19' : W13C040-07									
Acenaphthene	410	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	500	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Chrysene	17	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	60	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	D4
Fluorene	790	ug/kg dry	20	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Naphthalene	1500	ug/kg dry	40	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Phenanthrene	2800	ug/kg dry	200	100	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Pyrene	140	ug/kg dry	10	10	B13C129	03/07/13	03/13/13	EPA 8270-SIM	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*				
2-Methylnaphthalene-d10	*110*		*127*	*83%*	*31.9-133*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*
Fluoranthene-d10	*120*		*127*	*92%*	*64.7-154*	*B13C129*	*03/07/13*	*03/13/13*	*EPA 8270-SIM*

Reported: 03/27/13 14:52

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Jennifer Shackelford, Laboratory Coordinator QA/QC

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C040	Project Mgr:	John O'Donovan

Quality Control Report

General Chemistry - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Solids - Batch B13C111									
Duplicate (B13C111-DUP1)			Source: W13C040-01						
Total solids	70.9	% W/W	0.01		70.9		0.03 (5)	03/06/13 :03/07/13	
Duplicate (B13C111-DUP2)			Source: W13C048-02						
Total solids	75.9	% W/W	0.01		76.1		0.4 (5)	03/06/13 :03/07/13	

Fuels - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Diesel/Oil Hydrocarbons by GC-FID - Batch B13C130									
Blank (B13C130-BLK1)									
Diesel	ND	mg/kg wet	25					03/07/13 :03/07/13	
Lube oil	ND	mg/kg wet	50					03/07/13 :03/07/13	
Surrogate 2-Fluorobiphenyl	20.9	mg/kg wet	20.0			104		03/07/13 :03/07/13	
LCS (B13C130-BS1)									
Diesel	85.4	mg/kg wet	25	100		85 (50-150)		03/07/13 :03/07/13	
Lube oil	102	mg/kg wet	50	100		102 (50-150)		03/07/13 :03/07/13	
Surrogate 2-Fluorobiphenyl	20.8	mg/kg wet	20.0			104 (50-150)		03/07/13 :03/07/13	
Duplicate (B13C130-DUP1)			Source: W13C040-02						
Diesel	694	mg/kg dry	250		870		23 (50)	03/07/13 :03/07/13	
Lube oil	ND	mg/kg dry	500		ND		(50)	03/07/13 :03/07/13	
Surrogate 2-Fluorobiphenyl	35.6	mg/kg dry	27.2			131		03/07/13 :03/07/13	

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5666

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C040	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C129									
Blank (B13C129-BLK1)									
Acenaphthene	ND	ug/kg wet	20					03/07/13 :03/13/13	
Acenaphthylene	ND	ug/kg wet	20					03/07/13 :03/13/13	
Anthracene	ND	ug/kg wet	20					03/07/13 :03/13/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Chrysene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Fluoranthene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Fluorene	ND	ug/kg wet	20					03/07/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Naphthalene	ND	ug/kg wet	40					03/07/13 :03/13/13	
Phenanthrene	ND	ug/kg wet	20					03/07/13 :03/13/13	
Pyrene	ND	ug/kg wet	10					03/07/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	72		ug/kg wet	100		72		03/07/13 :03/13/13	
Fluoranthene-d10	82		ug/kg wet	100		82		03/07/13 :03/13/13	
LCS (B13C129-BS1)									
Acenaphthene	37.6	ug/kg wet	20	40.0		94 (50-150)		03/07/13 :03/13/13	
Acenaphthylene	39.6	ug/kg wet	20	40.0		99 (50-150)		03/07/13 :03/13/13	
Anthracene	36.4	ug/kg wet	20	40.0		91 (50-150)		03/07/13 :03/13/13	
Benzo(a)anthracene	36.0	ug/kg wet	10	40.0		90 (50-150)		03/07/13 :03/13/13	
Benzo(a)pyrene	35.6	ug/kg wet	10	40.0		89 (50-150)		03/07/13 :03/13/13	
Benzo(b)fluoranthene	33.6	ug/kg wet	10	40.0		84 (50-150)		03/07/13 :03/13/13	
Benzo(g,h,i)perylene	37.6	ug/kg wet	10	40.0		94 (50-150)		03/07/13 :03/13/13	
Benzo(k)fluoranthene	34.4	ug/kg wet	10	40.0		86 (50-150)		03/07/13 :03/13/13	
Chrysene	35.6	ug/kg wet	10	40.0		89 (50-150)		03/07/13 :03/13/13	
Dibenzo(a,h)anthracene	35.6	ug/kg wet	10	40.0		89 (50-150)		03/07/13 :03/13/13	
Fluoranthene	33.2	ug/kg wet	10	40.0		83 (50-150)		03/07/13 :03/13/13	
Fluorene	35.6	ug/kg wet	20	40.0		89 (50-150)		03/07/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	36.4	ug/kg wet	10	40.0		91 (50-150)		03/07/13 :03/13/13	
Naphthalene	33.6	ug/kg wet	20	40.0		84 (50-150)		03/07/13 :03/13/13	
Phenanthrene	36.8	ug/kg wet	20	40.0		92 (50-150)		03/07/13 :03/13/13	
Pyrene	39.2	ug/kg wet	10	40.0		98 (50-150)		03/07/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	76		ug/kg wet	100		76 (31.9-133)		03/07/13 :03/13/13	
Fluoranthene-d10	85		ug/kg wet	100		85 (64.7-154)		03/07/13 :03/13/13	
Duplicate (B13C129-DUP1)		Source: W13C040-02							

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C040	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C129									
Duplicate (B13C129-DUP1)			Source: W13C040-02						
Acenaphthene	223	ug/kg dry	20		246		9 (50)	03/07/13 :03/13/13	
Acenaphthylene	82.1	ug/kg dry	20		ND		(50)	03/07/13 :03/13/13	
Anthracene	243	ug/kg dry	20		ND		(50)	03/07/13 :03/13/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		(50)	03/07/13 :03/13/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/07/13 :03/13/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/07/13 :03/13/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/07/13 :03/13/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/07/13 :03/13/13	
Chrysene	ND	ug/kg dry	10		ND		(50)	03/07/13 :03/13/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/07/13 :03/13/13	
Fluoranthene	12.0	ug/kg dry	10		ND		(50)	03/07/13 :03/13/13	
Fluorene	374	ug/kg dry	20		443		17 (50)	03/07/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/07/13 :03/13/13	
Naphthalene	833	ug/kg dry	40		1010		19 (50)	03/07/13 :03/13/13	
Phenanthrene	1200	ug/kg dry	20		1390		16 (50)	03/07/13 :03/13/13	
Pyrene	46.8	ug/kg dry	10		52.0		11 (50)	03/07/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	*120*		ug/kg dry	*136*		85		03/07/13 :03/13/13	
Fluoranthene-d10	*110*		ug/kg dry	*136*		81		03/07/13 :03/13/13	
Matrix Spike (B13C129-MS1)			Source: W13C040-02						
Acenaphthene	401	ug/kg dry	20	140	246	111 (50-150)		03/07/13 :03/13/13	
Acenaphthylene	127	ug/kg dry	20	140	ND	91 (50-150)		03/07/13 :03/13/13	
Anthracene	393	ug/kg dry	20	140	ND	281 (50-150)		03/07/13 :03/13/13	M0
Benzo(a)anthracene	120	ug/kg dry	10	140	ND	86 (50-150)		03/07/13 :03/13/13	
Benzo(a)pyrene	116	ug/kg dry	10	140	ND	83 (50-150)		03/07/13 :03/13/13	
Benzo(b)fluoranthene	111	ug/kg dry	10	140	ND	79 (50-150)		03/07/13 :03/13/13	
Benzo(g,h,i)perylene	121	ug/kg dry	10	140	ND	87 (50-150)		03/07/13 :03/13/13	
Benzo(k)fluoranthene	112	ug/kg dry	10	140	ND	80 (50-150)		03/07/13 :03/13/13	
Chrysene	118	ug/kg dry	10	140	ND	85 (50-150)		03/07/13 :03/13/13	
Dibenzo(a,h)anthracene	120	ug/kg dry	10	140	ND	86 (50-150)		03/07/13 :03/13/13	
Fluoranthene	121	ug/kg dry	10	140	ND	87 (50-150)		03/07/13 :03/13/13	
Fluorene	560	ug/kg dry	20	140	443	83 (50-150)		03/07/13 :03/13/13	
Indeno(1,2,3-cd)pyrene	120	ug/kg dry	10	140	ND	86 (50-150)		03/07/13 :03/13/13	
Naphthalene	1150	ug/kg dry	40	140	1010	99 (50-150)		03/07/13 :03/13/13	
Phenanthrene	1510	ug/kg dry	20	140	1390	86 (50-150)		03/07/13 :03/13/13	
Pyrene	181	ug/kg dry	10	140	52.0	92 (50-150)		03/07/13 :03/13/13	
Surrogate									
2-Methylnaphthalene-d10	*130*		ug/kg dry	*140*		93 (31.9-133)		03/07/13 :03/13/13	
Fluoranthene-d10	*120*		ug/kg dry	*140*		84 (64.7-164)		03/07/13 :03/13/13	

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Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5556

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C040	Project Mgr:	John O'Donovan

Qualifiers

D4	Reporting limit is raised for this analyte due to non-target matrix interference.
M0	Matrix spike recovery was high due to matrix interference.
SU7	High surrogate recovery is due to co-eluting matrix interferent.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference

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Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
Sample Custodian: (503) 823-5696
General Lab: (503) 823-5681

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 3/5/13
Work Order #: W13C040
Collected By: ______

Client Name: City of Portland CSA - Coordinated Site Analysis
Project Name: 13-8748 - Kenton Brass Foundry

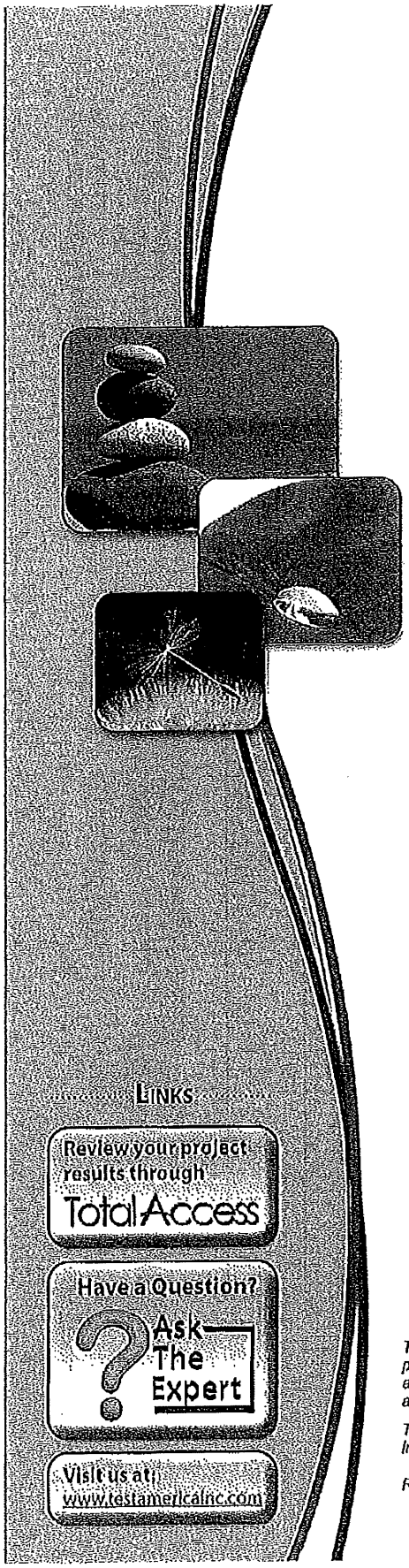
Requested Analyses

Comments

Lab Number	Sample ID	Sample Date	Sample Time	Grab or Comp	Sample Matrix	Dx	PAH	per Tanya M.	BTEX added 030713 pn	change to VOC-8260 per Tanya 030713	# of containers
01	PFE-9'	03/05/13	11:20a	G	soil	✓	X		X		3
02	PFW-9'	↓	↓	G	soil	✓	X		X		↓
03	PWW-7'	↓	↓	G	soil	✓	X				↓
04	PWE-7'	↓	↓	G	soil	✓	X				↓
05	PWN-7'	↓	↓	G	soil	✓	X				↓
06	PWS-7'	↓	↓	G	soil	✓	X				↓
07	PV-19'	↓	↓	G	soil	✓	X				↓

Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: [signature] Date: 03/05/13	Signature: [signature] Date: 3/5/13	Signature: Date:	Signature: Date:
Printed Name: Erick Gomez Time: 15:05	Printed Name: [illegible] Time: 1505	Printed Name: Time:	Printed Name: Time:

per D. Lumley 030713 pn



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Portland
9405 SW Nimbus Ave.
Beaverton, OR 97008
Tel: (503)906-9200

TestAmerica Job ID: 250-10423-1
TestAmerica Sample Delivery Group: W13C040
Client Project/Site: General

For:
City of Portland
Water Pollution Laboratory
6543 N. Burlington Ave
Portland, Oregon 97203

Attn: Jennifer Shackelford

Erica Fot

Authorized for release by:
3/14/2013 1:43:25 PM
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Designee for

Jay Willms
Project Manager I
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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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Sample Summary

Client: City of Portland
Project/Site: General

TestAmerica Job ID: 250-10423-1
SDG: W13C040

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
250-10423-1	W13C040-01	Solid	03/05/13 11:20	03/07/13 13:10
250-10423-2	W13C040-02	Solid	03/05/13 11:20	03/07/13 13:10

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, 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: City of Portland
Project/Site: General

TestAmerica Job ID: 250-10423-1
SDG: W13C040

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: W13C040-01
Date Collected: 03/05/13 11:20
Date Received: 03/07/13 13:10

Lab Sample ID: 250-10423-1
Matrix: Solid
Percent Solids: 71.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		23000		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Benzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Bromobenzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Bromochloromethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Bromodichloromethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Bromoform	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Bromomethane	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
2-Butanone (MEK)	ND		9000		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
n-Butylbenzene	5400		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
sec-Butylbenzene	2700		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
tert-Butylbenzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Carbon disulfide	ND		9000		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Carbon tetrachloride	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Chlorobenzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Chloroethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Chloroform	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Chloromethane	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
2-Chlorotoluene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
4-Chlorotoluene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2-Dibromo-3-Chloropropane	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Dibromochloromethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2-Dibromoethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Dibromomethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2-Dichloroethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,3-Dichlorobenzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,4-Dichlorobenzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Dichlorodifluoromethane	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,1-Dichloroethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,1-Dichloroethene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
cis-1,2-Dichloroethene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
trans-1,2-Dichloroethene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2-Dichloropropane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,3-Dichloropropane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
2,2-Dichloropropane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,1-Dichloropropene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
cis-1,3-Dichloropropene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
trans-1,3-Dichloropropene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Ethylbenzene	1100		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Hexachlorobutadiene	ND		3600		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
2-Hexanone	ND		9000		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Isopropylbenzene	ND		1800		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
p-Isopropyltoluene	2900		1800		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
4-Methyl-2-pentanone (MIBK)	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Methyl tert-butyl ether	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Methylene Chloride	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Naphthalene	17000		1800		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
N-Propylbenzene	3100		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Styrene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,1,1,2-Tetrachloroethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: W13C040-01
Date Collected: 03/06/13 11:20
Date Received: 03/07/13 13:10

Lab Sample ID: 250-10423-1
Matrix: Solid
Percent Solids: 71.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Tetrachloroethene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Toluene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2,3-Trichlorobenzene	ND		4500		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2,4-Trichlorobenzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,1,1-Trichloroethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,1,2-Trichloroethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Trichloroethene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Trichlorofluoromethane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2,3-Trichloropropane	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2,4-Trimethylbenzene	19000		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,3,5-Trimethylbenzene	7600		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
Vinyl chloride	ND		1800		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
m,p-Xylene	2900		1800		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
o-Xylene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5
1,2-Dichlorobenzene	ND		900		ug/Kg	☼	03/11/13 11:15	03/12/13 17:08	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*	*03/11/13 11:15*	*03/12/13 17:08*	*5*
4-Bromofluorobenzene (Surr)	*103*		*75 - 125*	*03/11/13 11:15*	*03/12/13 17:08*	*5*
Dibromofluoromethane (Surr)	*99*		*75 - 125*	*03/11/13 11:15*	*03/12/13 17:08*	*5*
Toluene-d8 (Surr)	*95*		*75 - 125*	*03/11/13 11:15*	*03/12/13 17:08*	*5*

Client Sample ID: W13C040-02
Date Collected: 03/06/13 11:20
Date Received: 03/07/13 13:10

Lab Sample ID: 250-10423-2
Matrix: Solid
Percent Solids: 72.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		4300		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Benzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Bromobenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Bromochloromethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Bromodichloromethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Bromoform	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Bromomethane	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
2-Butanone (MEK)	ND		1700		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
n-Butylbenzene	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
sec-Butylbenzene	200		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
tert-Butylbenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Carbon disulfide	ND		1700		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Carbon tetrachloride	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Chlorobenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Chloroethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Chloroform	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Chloromethane	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
2-Chlorotoluene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
4-Chlorotoluene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2-Dibromo-3-Chloropropane	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Dibromochloromethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2-Dibromoethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Dibromomethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1

Client Sample Results

Client: City of Portland
Project/Site: General

TestAmerica Job ID: 250-10423-1
SDG: W13C040

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: W13C040-02
Date Collected: 03/05/13 11:20
Date Received: 03/07/13 13:10

Lab Sample ID: 250-10423-2
Matrix: Solid
Percent Solids: 72.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,3-Dichlorobenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,4-Dichlorobenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Dichlorodifluoromethane	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,1-Dichloroethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,1-Dichloroethene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
cis-1,2-Dichloroethene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
trans-1,2-Dichloroethene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2-Dichloropropane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,3-Dichloropropane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
2,2-Dichloropropane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,1-Dichloropropene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
cis-1,3-Dichloropropene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
trans-1,3-Dichloropropene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Ethylbenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Hexachlorobutadiene	ND		680		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
2-Hexanone	ND		1700		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Isopropylbenzene	ND		340		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
p-Isopropyltoluene	ND		340		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
4-Methyl-2-pentanone (MIBK)	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Methyl tert-butyl ether	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Methylene Chloride	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Naphthalene	2300		340		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
N-Propylbenzene	190		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Styrene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,1,1,2-Tetrachloroethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,1,2,2-Tetrachloroethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Tetrachloroethene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Toluene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2,3-Trichlorobenzene	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2,4-Trichlorobenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,1,1-Trichloroethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,1,2-Trichloroethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Trichloroethene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Trichlorofluoromethane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2,3-Trichloropropane	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2,4-Trimethylbenzene	2000		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,3,5-Trimethylbenzene	780		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
Vinyl chloride	ND		860		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
m,p-Xylene	ND		340		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
o-Xylene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1
1,2-Dichlorobenzene	ND		170		ug/Kg	☼	03/11/13 11:15	03/12/13 16:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Sur)	*103*		*75 - 125*	*03/11/13 11:15*	*03/12/13 16:43*	*1*
4-Bromofluorobenzene (Sur)	*102*		*75 - 125*	*03/11/13 11:15*	*03/12/13 16:43*	*1*
Dibromofluoromethane (Sur)	*101*		*75 - 125*	*03/11/13 11:15*	*03/12/13 16:43*	*1*
Toluene-d8 (Sur)	*97*		*75 - 125*	*03/11/13 11:15*	*03/12/13 16:43*	*1*

Client Sample Results

Client: City of Portland
Project/Site: General

TestAmerica Job ID: 250-10423-1
SDG: W13C040

General Chemistry

Client Sample ID: W13C040-01
Date Collected: 03/05/13 11:20
Date Received: 03/07/13 13:10

Lab Sample ID: 250-10423-1
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	29		0.010		%			03/11/13 12:48	1
Percent Solids	71		0.010		%			03/11/13 12:48	1

Client Sample ID: W13C040-02
Date Collected: 03/05/13 11:20
Date Received: 03/07/13 13:10

Lab Sample ID: 250-10423-2
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	28		0.010		%			03/11/13 12:48	1
Percent Solids	72		0.010		%			03/11/13 12:48	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 250-14893/1-A
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 14893

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		2500		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Benzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Bromobenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Bromochloromethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Bromodichloromethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Bromoform	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Bromomethane	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
2-Butanone (MEK)	ND		980		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
n-Butylbenzene	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
sec-Butylbenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
tert-Butylbenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Carbon disulfide	ND		980		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Carbon tetrachloride	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Chlorobenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Chloroethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Chloroform	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Chloromethane	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
2-Chlorotoluene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
4-Chlorotoluene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2-Dibromo-3-Chloropropane	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Dibromochloromethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2-Dibromoethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Dibromomethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2-Dichloroethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,3-Dichlorobenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,4-Dichlorobenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Dichlorodifluoromethane	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,1-Dichloroethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,1-Dichloroethene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
cis-1,2-Dichloroethene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
trans-1,2-Dichloroethene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2-Dichloropropane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,3-Dichloropropane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
2,2-Dichloropropane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,1-Dichloropropene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
cis-1,3-Dichloropropene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
trans-1,3-Dichloropropene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Ethylbenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Hexachlorobutadiene	ND		390		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
2-Hexanone	ND		980		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Isopropylbenzene	ND		200		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
p-Isopropyltoluene	ND		200		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
4-Methyl-2-pentanone (MIBK)	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Methyl tert-butyl ether	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Methylene Chloride	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Naphthalene	ND		200		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
N-Propylbenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Styrene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 250-14893/1-A
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 14893

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,1,2,2-Tetrachloroethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Tetrachloroethene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Toluene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2,3-Trichlorobenzene	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2,4-Trichlorobenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,1,1-Trichloroethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,1,2-Trichloroethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Trichloroethene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Trichlorofluoromethane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2,3-Trichloropropane	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2,4-Trimethylbenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,3,5-Trimethylbenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
Vinyl chloride	ND		490		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
m,p-Xylene	ND		200		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
o-Xylene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1
1,2-Dichlorobenzene	ND		98		ug/Kg		03/11/13 11:15	03/12/13 12:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*	*03/11/13 11:15*	*03/12/13 12:55*	*1*
4-Bromofluorobenzene (Surr)	*105*		*75 - 125*	*03/11/13 11:15*	*03/12/13 12:55*	*1*
Dibromofluoromethane (Surr)	*108*		*76 - 125*	*03/11/13 11:15*	*03/12/13 12:55*	*1*
Toluene-d8 (Surr)	*103*		*76 - 125*	*03/11/13 11:15*	*03/12/13 12:55*	*1*

Lab Sample ID: LCS 250-14893/2-A
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14893

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	9740	13400		ug/Kg		138	65 - 150
Benzene	1950	1770		ug/Kg		91	80 - 120
Bromobenzene	1950	2040		ug/Kg		105	80 - 120
Bromochloromethane	1950	2200		ug/Kg		113	80 - 120
Bromodichloromethane	1950	1980		ug/Kg		101	80 - 140
Bromoform	1950	2220		ug/Kg		114	75 - 160
Bromomethane	1950	2400		ug/Kg		123	65 - 130
2-Butanone (MEK)	9740	10600		ug/Kg		108	70 - 125
n-Butylbenzene	1950	1870		ug/Kg		96	80 - 150
sec-Butylbenzene	1950	2050		ug/Kg		105	80 - 135
tert-Butylbenzene	1950	1990		ug/Kg		102	80 - 130
Carbon disulfide	3890	3840		ug/Kg		99	65 - 140
Carbon tetrachloride	1950	1630		ug/Kg		84	70 - 130
Chlorobenzene	1950	1980		ug/Kg		102	80 - 125
Chloroethane	1950	2250		ug/Kg		115	75 - 125
Chloroform	1950	1900		ug/Kg		98	80 - 120
Chloromethane	1950	2150		ug/Kg		110	40 - 150
2-Chlorotoluene	1950	2010		ug/Kg		103	80 - 120
4-Chlorotoluene	1950	1980		ug/Kg		101	80 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 250-14893/2-A
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14893

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromo-3-Chloropropane	1950	2520		ug/Kg		129	60 - 130
Dibromochloromethane	1950	1900		ug/Kg		98	75 - 125
1,2-Dibromoethane	1950	1990		ug/Kg		102	80 - 125
Dibromomethane	1950	2050		ug/Kg		105	80 - 120
1,2-Dichloroethane	1950	1830		ug/Kg		94	80 - 120
1,3-Dichlorobenzene	1950	2090		ug/Kg		107	80 - 125
1,4-Dichlorobenzene	1950	2020		ug/Kg		104	75 - 120
Dichlorodifluoromethane	1950	2230		ug/Kg		116	75 - 120
1,1-Dichloroethane	1950	1970		ug/Kg		101	80 - 120
1,1-Dichloroethene	1950	2010		ug/Kg		103	75 - 125
cis-1,2-Dichloroethene	1950	2000		ug/Kg		103	75 - 125
trans-1,2-Dichloroethene	1950	1910		ug/Kg		98	75 - 125
1,2-Dichloropropane	1950	1880		ug/Kg		96	80 - 125
1,3-Dichloropropane	1950	1990		ug/Kg		102	75 - 130
2,2-Dichloropropane	1950	2410		ug/Kg		124	70 - 130
1,1-Dichloropropene	1950	1800		ug/Kg		92	80 - 125
cis-1,3-Dichloropropene	1950	1970		ug/Kg		101	80 - 125
trans-1,3-Dichloropropene	1950	2100		ug/Kg		108	65 - 145
Ethylbenzene	1950	1960		ug/Kg		101	80 - 125
Hexachlorobutadiene	1950	2010		ug/Kg		103	80 - 150
2-Hexanone	9740	11300		ug/Kg		116	55 - 120
Isopropylbenzene	1950	2000		ug/Kg		102	80 - 130
p-Isopropyltoluene	1950	2070		ug/Kg		107	80 - 120
4-Methyl-2-pentanone (MIBK)	9740	10400		ug/Kg		107	60 - 120
Methyl tert-butyl ether	1950	1840		ug/Kg		94	75 - 125
Methylene Chloride	1950	2090		ug/Kg		107	75 - 125
Naphthalene	1950	2080		ug/Kg		107	80 - 130
N-Propylbenzene	1950	2010		ug/Kg		103	80 - 120
Styrene	1950	2100		ug/Kg		108	80 - 125
1,1,1,2-Tetrachloroethane	1950	2030		ug/Kg		104	80 - 130
1,1,2,2-Tetrachloroethane	1950	2120		ug/Kg		109	70 - 135
Tetrachloroethene	1950	1940		ug/Kg		99	80 - 125
Toluene	1950	1880		ug/Kg		96	80 - 120
1,2,3-Trichlorobenzene	1950	2010		ug/Kg		103	80 - 145
1,2,4-Trichlorobenzene	1950	2010		ug/Kg		103	85 - 150
1,1,1-Trichloroethane	1950	1720		ug/Kg		88	80 - 125
1,1,2-Trichloroethane	1950	1970		ug/Kg		101	80 - 125
Trichloroethene	1950	1850		ug/Kg		95	80 - 125
Trichlorofluoromethane	1950	2200		ug/Kg		113	55 - 150
1,2,3-Trichloropropane	1950	2160		ug/Kg		111	65 - 125
1,2,4-Trimethylbenzene	1950	2070		ug/Kg		106	80 - 135
1,3,5-Trimethylbenzene	1950	2070		ug/Kg		106	80 - 135
Vinyl chloride	1950	2140		ug/Kg		110	10 - 140
m,p-Xylene	3890	4030		ug/Kg		104	80 - 120
o-Xylene	1950	1980		ug/Kg		101	80 - 125
1,2-Dichlorobenzene	1950	1940		ug/Kg		99	80 - 120

QC Sample Results

Client: City of Portland
Project/Site: General

TestAmerica Job ID: 250-10423-1
SDG: W13C040

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 250-14893/2-A
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14893

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		75 - 125
4-Bromofluorobenzene (Surr)	107		75 - 125
Dibromofluoromethane (Surr)	108		75 - 125
Toluene-d8 (Surr)	103		75 - 125

Lab Sample ID: 250-10447-A-1-B MS
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 14893

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	ND		10900	14000		ug/Kg	☼	128	60 - 145
Benzene	ND		2190	2080		ug/Kg	☼	95	80 - 125
Bromobenzene	ND		2190	2340		ug/Kg	☼	107	70 - 130
Bromochloromethane	ND		2190	2320		ug/Kg	☼	106	80 - 130
Bromodichloromethane	ND		2190	2250		ug/Kg	☼	103	80 - 135
Bromoform	ND		2190	2640		ug/Kg	☼	120	70 - 130
Bromomethane	ND		2190	2370		ug/Kg	☼	108	70 - 130
2-Butanone (MEK)	ND		10900	12400		ug/Kg	☼	113	70 - 145
n-Butylbenzene	ND		2190	2240		ug/Kg	☼	102	70 - 140
sec-Butylbenzene	ND		2190	2270		ug/Kg	☼	104	70 - 135
tert-Butylbenzene	ND		2190	2260		ug/Kg	☼	103	80 - 135
Carbon disulfide	ND		4380	3270		ug/Kg	☼	75	70 - 130
Carbon tetrachloride	ND		2190	1880		ug/Kg	☼	86	70 - 125
Chlorobenzene	ND		2190	2100		ug/Kg	☼	96	70 - 130
Chloroethane	ND		2190	2260		ug/Kg	☼	103	70 - 130
Chloroform	ND		2190	2100		ug/Kg	☼	96	80 - 125
Chloromethane	ND		2190	2030		ug/Kg	☼	93	40 - 150
2-Chlorotoluene	ND		2190	2200		ug/Kg	☼	100	80 - 125
4-Chlorotoluene	ND		2190	2170		ug/Kg	☼	99	70 - 130
1,2-Dibromo-3-Chloropropane	ND		2190	3030		ug/Kg	☼	138	60 - 145
Dibromochloromethane	ND		2190	2030		ug/Kg	☼	93	80 - 130
1,2-Dibromoethane	ND		2190	2290		ug/Kg	☼	104	80 - 130
Dibromomethane	ND		2190	2300		ug/Kg	☼	105	75 - 125
1,2-Dichloroethane	ND		2190	2170		ug/Kg	☼	99	75 - 120
1,3-Dichlorobenzene	ND		2190	2270		ug/Kg	☼	104	80 - 130
1,4-Dichlorobenzene	ND		2190	2260		ug/Kg	☼	103	80 - 120
Dichlorodifluoromethane	ND		2190	2160		ug/Kg	☼	99	65 - 135
1,1-Dichloroethane	ND		2190	2130		ug/Kg	☼	97	80 - 125
1,1-Dichloroethene	ND		2190	2170		ug/Kg	☼	99	70 - 130
cis-1,2-Dichloroethene	ND		2190	2200		ug/Kg	☼	100	75 - 120
trans-1,2-Dichloroethene	ND		2190	2150		ug/Kg	☼	98	70 - 130
1,2-Dichloropropane	ND		2190	2220		ug/Kg	☼	101	80 - 130
1,3-Dichloropropane	ND		2190	2240		ug/Kg	☼	102	75 - 130
2,2-Dichloropropane	ND		2190	2780		ug/Kg	☼	127	70 - 130
1,1-Dichloropropene	ND		2190	2110		ug/Kg	☼	96	80 - 125
cis-1,3-Dichloropropene	ND		2190	2260		ug/Kg	☼	103	80 - 130
trans-1,3-Dichloropropene	ND		2190	2450		ug/Kg	☼	112	70 - 145
Ethylbenzene	ND		2190	2300		ug/Kg	☼	105	80 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-10447-A-1-B MS
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 14893

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hexachlorobutadiene	ND		2190	2350		ug/Kg	☼	107	45 - 150
2-Hexanone	ND		10900	12200		ug/Kg	☼	112	65 - 150
Isopropylbenzene	ND		2190	2280		ug/Kg	☼	104	80 - 130
p-Isopropyltoluene	ND		2190	2310		ug/Kg	☼	106	70 - 140
4-Methyl-2-pentanone (MIBK)	ND		10900	11300		ug/Kg	☼	103	60 - 150
Methyl tert-butyl ether	ND		2190	2150		ug/Kg	☼	98	70 - 130
Methylene Chloride	ND		2190	2100		ug/Kg	☼	96	70 - 120
Naphthalene	ND		2190	2560		ug/Kg	☼	117	70 - 130
N-Propylbenzene	ND		2190	2270		ug/Kg	☼	104	70 - 130
Styrene	ND		2190	2330		ug/Kg	☼	106	85 - 120
1,1,1,2-Tetrachloroethane	ND		2190	2220		ug/Kg	☼	101	80 - 130
1,1,2,2-Tetrachloroethane	ND		2190	2540		ug/Kg	☼	116	70 - 130
Tetrachloroethene	ND		2190	2130		ug/Kg	☼	97	75 - 140
Toluene	ND		2190	2060		ug/Kg	☼	94	70 - 130
1,2,3-Trichlorobenzene	ND		2190	2400		ug/Kg	☼	109	70 - 130
1,2,4-Trichlorobenzene	ND		2190	2340		ug/Kg	☼	107	70 - 150
1,1,1-Trichloroethane	ND		2190	2030		ug/Kg	☼	93	80 - 125
1,1,2-Trichloroethane	ND		2190	2230		ug/Kg	☼	102	80 - 130
Trichloroethene	ND		2190	2150		ug/Kg	☼	98	80 - 125
Trichlorofluoromethane	ND		2190	2190		ug/Kg	☼	100	70 - 130
1,2,3-Trichloropropane	ND		2190	2470		ug/Kg	☼	113	70 - 130
1,2,4-Trimethylbenzene	ND		2190	2260		ug/Kg	☼	103	70 - 130
1,3,5-Trimethylbenzene	ND		2190	2270		ug/Kg	☼	104	75 - 140
Vinyl chloride	ND		2190	1780		ug/Kg	☼	81	10 - 140
m,p-Xylene	ND		4380	4480		ug/Kg	☼	102	75 - 135
o-Xylene	ND		2190	2260		ug/Kg	☼	103	70 - 130
1,2-Dichlorobenzene	ND		2190	2280		ug/Kg	☼	105	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*
4-Bromofluorobenzene (Surr)	*102*		*75 - 125*
Dibromofluoromethane (Surr)	*100*		*75 - 125*
Toluene-d8 (Surr)	*97*		*75 - 125*

Lab Sample ID: 250-10447-A-1-C MSD
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 14893

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	ND		10900	14100		ug/Kg	☼	129	60 - 145	1	25
Benzene	ND		2190	2000		ug/Kg	☼	92	80 - 125	4	25
Bromobenzene	ND		2190	2270		ug/Kg	☼	104	70 - 130	3	25
Bromochloromethane	ND		2190	2280		ug/Kg	☼	105	80 - 130	1	25
Bromodichloromethane	ND		2190	2140		ug/Kg	☼	98	80 - 135	6	25
Bromoform	ND		2190	2500		ug/Kg	☼	114	70 - 130	5	25
Bromomethane	ND		2190	2420		ug/Kg	☼	111	70 - 130	2	25
2-Butanone (MEK)	ND		10900	12200		ug/Kg	☼	111	70 - 145	2	25
n-Butylbenzene	ND		2190	2160		ug/Kg	☼	99	70 - 140	4	25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-10447-A-1-C MSD
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 14893

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene	ND		2190	2260		ug/Kg	☼	103	70 - 135	1	25
tert-Butylbenzene	ND		2190	2210		ug/Kg	☼	101	80 - 135	2	25
Carbon disulfide	ND		4370	3380		ug/Kg	☼	77	70 - 130	3	25
Carbon tetrachloride	ND		2190	1770		ug/Kg	☼	81	70 - 125	6	25
Chlorobenzene	ND		2190	2050		ug/Kg	☼	94	70 - 130	3	25
Chloroethane	ND		2190	2260		ug/Kg	☼	103	70 - 130	0	25
Chloroform	ND		2190	2060		ug/Kg	☼	94	80 - 125	2	25
Chloromethane	ND		2190	2040		ug/Kg	☼	93	40 - 150	0	25
2-Chlorotoluene	ND		2190	2140		ug/Kg	☼	98	80 - 125	2	25
4-Chlorotoluene	ND		2190	2130		ug/Kg	☼	97	70 - 130	2	25
1,2-Dibromo-3-Chloropropane	ND		2190	2970		ug/Kg	☼	136	60 - 145	2	25
Dibromochloromethane	ND		2190	1940		ug/Kg	☼	89	80 - 130	5	25
1,2-Dibromoethane	ND		2190	2220		ug/Kg	☼	102	80 - 130	3	25
Dibromomethane	ND		2190	2160		ug/Kg	☼	99	75 - 125	6	25
1,2-Dichloroethane	ND		2190	2090		ug/Kg	☼	96	75 - 120	4	25
1,3-Dichlorobenzene	ND		2190	2220		ug/Kg	☼	101	80 - 130	2	25
1,4-Dichlorobenzene	ND		2190	2240		ug/Kg	☼	102	80 - 120	1	25
Dichlorodifluoromethane	ND		2190	2240		ug/Kg	☼	103	65 - 135	4	25
1,1-Dichloroethane	ND		2190	2130		ug/Kg	☼	97	80 - 125	0	25
1,1-Dichloroethene	ND		2190	2120		ug/Kg	☼	97	70 - 130	2	25
cis-1,2-Dichloroethene	ND		2190	2130		ug/Kg	☼	98	75 - 120	3	25
trans-1,2-Dichloroethene	ND		2190	2170		ug/Kg	☼	99	70 - 130	1	25
1,2-Dichloropropane	ND		2190	2160		ug/Kg	☼	99	80 - 130	3	25
1,3-Dichloropropane	ND		2190	2200		ug/Kg	☼	101	75 - 130	2	25
2,2-Dichloropropane	ND		2190	2730		ug/Kg	☼	125	70 - 130	2	25
1,1-Dichloropropene	ND		2190	2040		ug/Kg	☼	93	80 - 125	3	25
cis-1,3-Dichloropropene	ND		2190	2160		ug/Kg	☼	99	80 - 130	5	25
trans-1,3-Dichloropropene	ND		2190	2320		ug/Kg	☼	106	70 - 145	6	25
Ethylbenzene	ND		2190	2180		ug/Kg	☼	100	80 - 125	5	25
Hexachlorobutadiene	ND		2190	2330		ug/Kg	☼	107	45 - 150	1	25
2-Hexanone	ND		10900	12200		ug/Kg	☼	112	65 - 150	0	25
Isopropylbenzene	ND		2190	2210		ug/Kg	☼	101	80 - 130	3	25
p-Isopropyltoluene	ND		2190	2270		ug/Kg	☼	104	70 - 140	2	25
4-Methyl-2-pentanone (MIBK)	ND		10900	11500		ug/Kg	☼	105	60 - 150	1	25
Methyl tert-butyl ether	ND		2190	2150		ug/Kg	☼	98	70 - 130	0	25
Methylene Chloride	ND		2190	2130		ug/Kg	☼	97	70 - 120	1	25
Naphthalene	ND		2190	2550		ug/Kg	☼	117	70 - 130	0	25
N-Propylbenzene	ND		2190	2230		ug/Kg	☼	102	70 - 130	2	25
Styrene	ND		2190	2280		ug/Kg	☼	104	85 - 120	2	25
1,1,1,2-Tetrachloroethane	ND		2190	2120		ug/Kg	☼	97	80 - 130	5	25
1,1,2,2-Tetrachloroethane	ND		2190	2510		ug/Kg	☼	115	70 - 130	1	25
Tetrachloroethene	ND		2190	2050		ug/Kg	☼	94	75 - 140	4	25
Toluene	ND		2190	2020		ug/Kg	☼	92	70 - 130	2	25
1,2,3-Trichlorobenzene	ND		2190	2340		ug/Kg	☼	107	70 - 130	2	25
1,2,4-Trichlorobenzene	ND		2190	2360		ug/Kg	☼	108	70 - 150	1	25
1,1,1-Trichloroethane	ND		2190	1950		ug/Kg	☼	89	80 - 125	4	25
1,1,2-Trichloroethane	ND		2190	2130		ug/Kg	☼	98	80 - 130	4	25
Trichloroethene	ND		2190	2100		ug/Kg	☼	96	80 - 125	2	25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-10447-A-1-C MSD
Matrix: Solid
Analysis Batch: 14951

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 14893

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Trichlorofluoromethane	ND		2190	2210		ug/Kg	☼	101	70 - 130	1	25
1,2,3-Trichloropropane	ND		2190	2460		ug/Kg	☼	113	70 - 130	0	25
1,2,4-Trimethylbenzene	ND		2190	2240		ug/Kg	☼	102	70 - 130	1	25
1,3,5-Trimethylbenzene	ND		2190	2230		ug/Kg	☼	102	75 - 140	2	25
Vinyl chloride	ND		2190	1770		ug/Kg	☼	81	10 - 140	1	25
m,p-Xylene	ND		4370	4410		ug/Kg	☼	101	75 - 135	2	25
o-Xylene	ND		2190	2180		ug/Kg	☼	100	70 - 130	4	25
1,2-Dichlorobenzene	ND		2190	2200		ug/Kg	☼	101	80 - 120	4	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*
4-Bromofluorobenzene (Surr)	*103*		*75 - 125*
Dibromofluoromethane (Surr)	*103*		*75 - 125*
Toluene-d8 (Surr)	*99*		*75 - 125*

Method: D2216-80 - Percent Dry Weight (Solids) per ASTM D2216-80

Lab Sample ID: 250-10423-1 DU
Matrix: Solid
Analysis Batch: 14896

Client Sample ID: W13C040-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	29		28		%		2	20
Percent Solids	71		72		%		0.9	20

Certification Summary

Client: City of Portland
Project/Site: General

TestAmerica Job ID: 250-10423-1
SDG: W13C040

Laboratory: TestAmerica Portland

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	State Program	10	OR00040	06-30-13
Alaska (UST)	State Program	10	UST-012	12-26-13
California	State Program	9	2597	09-30-13
Oregon	NELAP	10	OR100021	01-09-14
USDA	Federal		P330-11-00092	02-17-14
Washington	State Program	10	C586	06-23-13

Method Summary

Client: City of Portland
Project/Site: General

TestAmerica Job ID: 250-10423-1
SDG: W13C040

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PRT
D2216-80	Percent Dry Weight (Solids) per ASTM D2216-80	ASTM	TAL PRT

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PRT = TestAmerica Portland, 9405 SW Nimbus Ave., Beaverton, OR 97008, TEL (503)906-9200

SUBCONTRACT ORDER

City of Portland Water Pollution Control Lab

W13C040

10423.

SENDING LABORATORY:

City of Portland Water Pollution Control Lab
6543 N. Burlington Ave
Portland, OR 97203
Phone: 503-823-5600
Fax: 503-823-5656
Invoice To: Charles Lytle using P.O.# 30001516

RECEIVING LABORATORY:

TestAmerica
9405 SW Nimbus Ave
Beaverton, OR 97008
Phone :(503) 906-9200
Fax: (503) 906-9210

WPCL Project Name
Kenton Brass Foundry

TURNAROUND REQUEST
[X] Standard
[ ] Rush _ day(s)

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: W13C040-01	Solid	Sampled:03/05/13 11:20		
Out-VOA BTEX	03/19/13 17:00	03/19/13 11:20		
Containers Supplied: G jar amber 4 oz (C)				
Sample ID: W13C040-02	Solid	Sampled:03/05/13 11:20		
Out-VOA BTEX	03/19/13 17:00	03/19/13 11:20		
Containers Supplied: G jar amber 4 oz (C)				

Released By [signature] Date 3/7/13 1045 Received By [signature] Date 3/7/13 10:45

Released By [signature] Date 3/7/13 1:00 Received By [signature] Date 3/7/13 @ 1310

3.8 18/0-L

Page 1 of 1

Login Sample Receipt Checklist

Client: City of Portland

Job Number: 250-10423-1
SDG Number: W13C040

Login Number: 10423
List Number: 1
Creator: Svabik-Saror, Philip

List Source: TestAmerica Portland

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
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	Received project as a subcontract.
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.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5666

LABORATORY ANALYSIS REPORT

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan
Received:	3/1/13 17:32	WQDB #:	Janus825
Submitted By:	CSA/Consultant		

Sample	Laboratory ID	Matrix	Type	Sample Collection Date Start	End	Qualifier
03012013-CS	W13C011-01	Soil	Composite	03/01/13 11:15	03/01/13 11:15	
SW-E-3	W13C011-02	Soil	Composite	03/01/13 11:30	03/01/13 11:30	
SW-W-3	W13C011-03	Soil	Composite	03/01/13 16:40	03/01/13 16:40	
03012013-CS-2	W13C011-04	Soil	Composite	03/01/13 16:00	03/01/13 16:00	
Tank Bottom	W13C011-05	Soil	Grab	03/01/13 15:33	03/01/13 15:33	

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
General Chemistry									
Total Solids									
03012013-CS : W13C011-01									
Total solids	71.8	% W/W	0.01		B13C027	03/02/13	03/03/13	SM 2540G	
SW-E-3 : W13C011-02									
Total solids	74.0	% W/W	0.01		B13C027	03/02/13	03/03/13	SM 2540G	
SW-W-3 : W13C011-03									
Total solids	76.2	% W/W	0.01		B13C027	03/02/13	03/03/13	SM 2540G	
03012013-CS-2 : W13C011-04									
Total solids	73.9	% W/W	0.01		B13C027	03/02/13	03/03/13	SM 2540G	
Tank Bottom : W13C011-05									
Total solids	75.8	% W/W	0.01		B13C027	03/02/13	03/03/13	SM 2540G	

Reported: 03/22/13 06:30

Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

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City of Portland
Water Pollution Control Laboratory
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Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Total Metals

Total Metals by ICPMS

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
03012013-CS : W13C011-01									
Arsenic	7.48	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Barium	180	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Chromium	28.0	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Lead	12.6	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Mercury	0.0250	mg/kg dry	0.0100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C086	03/05/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
SW-E-3 : W13C011-02									
Arsenic	8.61	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Barium	217	mg/kg dry	0.100	20	B13C086	03/06/13	03/05/13	EPA 6020	
Cadmium	0.108	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Chromium	33.4	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Lead	16.5	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Mercury	0.0293	mg/kg dry	0.0100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C086	03/05/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
SW-W-3 : W13C011-03									
Arsenic	8.01	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Barium	189	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Cadmium	0.172	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Chromium	27.0	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Lead	13.3	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Mercury	0.0213	mg/kg dry	0.0100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C086	03/05/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
03012013-CS-2 : W13C011-04									
Arsenic	6.41	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Barium	182	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Cadmium	ND	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Chromium	27.3	mg/kg dry	0.500	20	B13C086	03/05/13	03/05/13	EPA 6020	
Lead	11.4	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Mercury	0.0214	mg/kg dry	0.0100	20	B13C086	03/05/13	03/05/13	EPA 6020	
Selenium	ND	mg/kg dry	1.00	20	B13C086	03/05/13	03/05/13	EPA 6020	
Silver	ND	mg/kg dry	0.100	20	B13C086	03/05/13	03/05/13	EPA 6020	

Reported: 03/22/13 06:30

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5666

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Analyte	Result	Units		MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Fuels										
Diesel/Oil Hydrocarbons by GC-FID										
Tank Bottom : W13C011-05										
Diesel	7900	mg/kg dry		250	10	B13C036	03/04/13	03/04/13	NWTPH-Dx	
Lube oil	1300	mg/kg dry		500	10	B13C036	03/04/13	03/04/13	NWTPH-Dx	F2
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*					
2-Fluorobiphenyl	*66.0*		*25.9*	*255%*	*50-150*	*B13C036*	*03/04/13*	*03/04/13*	*NWTPH-Dx*	*SU7*

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Water Pollution Control Laboratory
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Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
03012013-CS : W13C011-01									
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Surrogate	*Result*	*Expected*	*%Rec*	*Limits(%)*					
2-Methylnaphthalene-d10	*73*	*129*	*57%*	*31.9-133*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*	
Fluoranthene-d10	*110*	*129*	*84%*	*64.7-154*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*	
SW-E-3 : W13C011-02									
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Surrogate	*Result*	*Expected*	*%Rec*	*Limits(%)*					
2-Methylnaphthalene-d10	*72*	*123*	*58%*	*31.9-133*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*	
Fluoranthene-d10	*100*	*123*	*83%*	*64.7-154*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*	
SW-W-3 : W13C011-03									

Reported: 03/22/13 06:30

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5666

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

SW-W-3 : W13C011-03

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	

Surrogate	*Result*	*Expected*	*%Rec*	*Limits(%)*				
2-Methylnaphthalene-d10	*62*	*116*	*53%*	*31.9-133*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*
Fluoranthene-d10	*100*	*116*	*90%*	*64.7-154*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*

03012013-CS-2 : W13C011-04

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Acenaphthylene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Anthracene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)pyrene	14	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(b)fluoranthene	14	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	11	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Chrysene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluorene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	40	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Phenanthrene	ND	ug/kg dry	20	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	

Surrogate	*Result*	*Expected*	*%Rec*	*Limits(%)*				
2-Methylnaphthalene-d10	*54*	*127*	*43%*	*31.9-133*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*
Fluoranthene-d10	*120*	*127*	*91%*	*64.7-154*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*

Tank Bottom : W13C011-05

Reported: 03/22/13 06:30

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM

Polynuclear Aromatic Hydrocarbons by GCMS-SIM

Tank Bottom : W13C011-05

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Acenaphthene	ND	ug/kg dry	1500	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	D4, M15
Acenaphthylene	ND	ug/kg dry	1500	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	D4, M15
Anthracene	ND	ug/kg dry	1500	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	D4, M15
Benzo(a)anthracene	37	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(a)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(b)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(g,h,i)perylene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Benzo(k)fluoranthene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Chrysene	140	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Fluoranthene	ND	ug/kg dry	250	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	D4, M15
Fluorene	2800	ug/kg dry	200	100	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	
Naphthalene	ND	ug/kg dry	1000	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	D4, M15
Phenanthrene	6300	ug/kg dry	200	100	B13C037	03/04/13	03/05/13	EPA 8270-SIM	
Pyrene	780	ug/kg dry	10	10	B13C037	03/04/13	03/04/13	EPA 8270-SIM	

Surrogate	*Result*	*Expected*	*%Rec*	*Limits(%)*					
2-Methylnaphthalene-d10	*130*	*130*	*104%*	*31.9-133*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*	
Fluoranthene-d10	*120*	*130*	*94%*	*64.7-164*	*B13C037*	*03/04/13*	*03/04/13*	*EPA 8270-SIM*	

Reported: 03/22/13 06:30

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Jennifer Shackelford, Laboratory Coordinator QA/QC

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5856

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs)

PCB Aroclors by GC-ECD

Analyte	Result	Units	MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
03012013-CS : W13C011-01									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1260	31.0	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*				
Tetrachloro-m-xylene	*12.2*		*13.5*	*91%*	*60.3-141*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
Decachlorobiphenyl	*14.0*		*13.5*	*104%*	*48.6-164*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
SW-E-3 : W13C011-02									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1260	33.6	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*				
Tetrachloro-m-xylene	*13.8*		*13.5*	*102%*	*60.3-141*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
Decachlorobiphenyl	*14.6*		*13.5*	*109%*	*48.6-164*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
SW-W-3 : W13C011-03									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1248	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1260	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*				
Tetrachloro-m-xylene	*12.9*		*12.9*	*99%*	*60.3-141*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
Decachlorobiphenyl	*15.0*		*12.9*	*116%*	*48.6-164*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*
03012013-CS-2 : W13C011-04									
Aroclor 1016/1242	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1221	ND	ug/kg dry	20.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1232	ND	ug/kg dry	10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	

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Jennifer Shackelford

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Analyte	Result	Units		MRL	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
Polychlorinated Biphenyls (PCBs)										
PCB Aroclors by GC-ECD										
03012013-CS-2 : W13C011-04										
Aroclor 1248	ND	ug/kg dry		10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1254	ND	ug/kg dry		10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1260	ND	ug/kg dry		10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1262	ND	ug/kg dry		10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Aroclor 1268	ND	ug/kg dry		10.0	1	B13C116	03/06/13	03/13/13	EPA 8082	
Surrogate	*Result*		*Expected*	*%Rec*	*Limits(%)*					
Tetrachloro-m-xylene	*12.6*		*13.4*	*94%*	*60.3-141*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*	
Decachlorobiphenyl	*12.3*		*13.4*	*92%*	*48.6-104*	*B13C116*	*03/06/13*	*03/13/13*	*EPA 8082*	

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City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5558

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Quality Control Report

General Chemistry - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Solids - Batch B13C027									
Duplicate (B13C027-DUP1)			Source: W13C011-01						
Total solids	71.3	% W/W	0.01		71.8		0.7 (5)	03/02/13 :03/03/13	

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C086									
Blank (B13C086-BLK1)									
Arsenic	ND	mg/kg wet	0.500					03/05/13 :03/05/13	
Barium	ND	mg/kg wet	0.100					03/05/13 :03/05/13	
Cadmium	ND	mg/kg wet	0.100					03/05/13 :03/05/13	
Chromium	ND	mg/kg wet	0.500					03/05/13 :03/05/13	
Lead	ND	mg/kg wet	0.100					03/05/13 :03/05/13	
Mercury	ND	mg/kg wet	0.0100					03/05/13 :03/05/13	
Selenium	ND	mg/kg wet	1.00					03/05/13 :03/05/13	
Silver	ND	mg/kg wet	0.100					03/05/13 :03/05/13	
Standard Reference Material (B13C086-SRM1)									
Arsenic	94.3	mg/kg wet	0.500	94.6		100 (75-125)		03/05/13 :03/05/13	
Barium	206	mg/kg wet	0.100	188		110 (75-125)		03/05/13 :03/05/13	
Cadmium	61.1	mg/kg wet	0.100	60.5		101 (75-125)		03/05/13 :03/05/13	
Chromium	85.3	mg/kg wet	0.500	82.2		104 (75-125)		03/05/13 :03/05/13	
Lead	90.5	mg/kg wet	0.100	91.8		99 (75-125)		03/05/13 :03/05/13	
Mercury	3.446	mg/kg wet	0.0100	3.69		93 (75-125)		03/05/13 :03/05/13	
Selenium	87.7	mg/kg wet	1.00	91.6		96 (75-125)		03/05/13 :03/05/13	
Silver	34.8	mg/kg wet	0.100	34.4		101 (75-125)		03/05/13 :03/05/13	
Duplicate (B13C086-DUP1)			Source: W13C011-01						
Arsenic	7.64	mg/kg dry	0.500		7.48		2 (20)	03/05/13 :03/05/13	
Barium	211	mg/kg dry	0.100		180		16 (20)	03/05/13 :03/05/13	
Cadmium	ND	mg/kg dry	0.100		ND		(20)	03/05/13 :03/05/13	
Chromium	31.8	mg/kg dry	0.500		28.0		13 (20)	03/05/13 :03/05/13	
Lead	13.0	mg/kg dry	0.100		12.6		4 (20)	03/05/13 :03/05/13	
Mercury	0.02491	mg/kg dry	0.0100		0.02495		0.2 (20)	03/05/13 :03/05/13	
Selenium	ND	mg/kg dry	1.00		ND		(20)	03/05/13 :03/05/13	
Silver	ND	mg/kg dry	0.100		ND		(20)	03/05/13 :03/05/13	
Matrix Spike (B13C086-MS1)			Source: W13C011-01						
Arsenic	22.7	mg/kg dry	0.500	16.2	7.48	94 (75-125)		03/05/13 :03/05/13	
Barium	438	mg/kg dry	0.100	243	180	106 (75-125)		03/05/13 :03/05/13	

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Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5956

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Total Metals - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B13C086									
Matrix Spike (B13C086-MS1)			Source: W13C011-01						
Cadmium	15.9	mg/kg dry	0.100	16.2	ND	98 (75-125)		03/05/13 :03/05/13	
Chromium	77.1	mg/kg dry	0.500	48.6	28.0	101 (75-125)		03/05/13 :03/05/13	
Lead	91.1	mg/kg dry	0.100	80.9	12.6	97 (75-125)		03/05/13 :03/05/13	
Mercury	0.8272	mg/kg dry	0.0100	0.809	0.02495	99 (75-125)		03/05/13 :03/05/13	
Selenium	77.1	mg/kg dry	1.00	80.9	ND	95 (75-125)		03/05/13 :03/05/13	
Silver	15.8	mg/kg dry	0.100	16.2	ND	97 (75-125)		03/05/13 :03/05/13	

Fuels - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Diesel/Oil Hydrocarbons by GC-FID - Batch B13C036									
Blank (B13C036-BLK1)									
Diesel	ND	mg/kg wet	25					03/04/13 :03/04/13	
Lube oil	ND	mg/kg wet	50					03/04/13 :03/04/13	
Surrogate									
2-Fluorobiphenyl	19.1	mg/kg wet		20.0		95		03/04/13 :03/04/13	
LCS (B13C036-BS1)									
Diesel	82.7	mg/kg wet	25	100		83 (50-150)		03/04/13 :03/04/13	
Lube oil	98.0	mg/kg wet	50	100		98 (50-150)		03/04/13 :03/04/13	
Surrogate									
2-Fluorobiphenyl	20.2	mg/kg wet		20.0		101 (50-150)		03/04/13 :03/04/13	
Duplicate (B13C036-DUP1)			Source: W13C011-05						
Diesel	7360	mg/kg dry	250		7860		7 (50)	03/04/13 :03/04/13	
Lube oil	1270	mg/kg dry	500		1330		5 (50)	03/04/13 :03/04/13	F2
Surrogate									
2-Fluorobiphenyl	47.7	mg/kg dry		23.9		200		03/04/13 :03/04/13	SU7

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Water Pollution Control Laboratory
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Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Blank (B13C037-BLK1)									
Acenaphthene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Anthracene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Chrysene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluorene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Naphthalene	ND	ug/kg wet	40					03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	70		ug/kg wet	100		70		03/04/13 :03/04/13	
Fluoranthene-d10	92		ug/kg wet	100		92		03/04/13 :03/04/13	
Blank (B13C037-BLK2)									
Acenaphthene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Anthracene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Chrysene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Fluorene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Naphthalene	ND	ug/kg wet	40					03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg wet	20					03/04/13 :03/04/13	
Pyrene	ND	ug/kg wet	10					03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	64		ug/kg wet	100		64		03/04/13 :03/04/13	
Fluoranthene-d10	89		ug/kg wet	100		89		03/04/13 :03/04/13	
LCS (B13C037-BS1)									

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Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
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Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
LCS (B13C037-BS1)									
Acenaphthene	35.6	ug/kg wet	20	40.0		89 (50-150)		03/04/13 :03/04/13	
Acenaphthylene	37.6	ug/kg wet	20	40.0		94 (50-150)		03/04/13 :03/04/13	
Anthracene	37.2	ug/kg wet	20	40.0		93 (50-150)		03/04/13 :03/04/13	
Benzo(a)anthracene	37.6	ug/kg wet	10	40.0		94 (50-150)		03/04/13 :03/04/13	
Benzo(a)pyrene	37.6	ug/kg wet	10	40.0		94 (50-150)		03/04/13 :03/04/13	
Benzo(b)fluoranthene	36.0	ug/kg wet	10	40.0		90 (50-150)		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	38.8	ug/kg wet	10	40.0		97 (50-150)		03/04/13 :03/04/13	
Benzo(k)fluoranthene	35.6	ug/kg wet	10	40.0		89 (50-150)		03/04/13 :03/04/13	
Chrysene	36.4	ug/kg wet	10	40.0		91 (50-150)		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	36.0	ug/kg wet	10	40.0		90 (50-150)		03/04/13 :03/04/13	
Fluoranthene	36.4	ug/kg wet	10	40.0		91 (50-150)		03/04/13 :03/04/13	
Fluorene	36.4	ug/kg wet	20	40.0		91 (50-150)		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	37.6	ug/kg wet	10	40.0		94 (50-150)		03/04/13 :03/04/13	
Naphthalene	32.0	ug/kg wet	20	40.0		80 (50-150)		03/04/13 :03/04/13	
Phenanthrene	36.4	ug/kg wet	20	40.0		91 (50-150)		03/04/13 :03/04/13	
Pyrene	36.8	ug/kg wet	10	40.0		92 (50-150)		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	66	ug/kg wet		100		66 (31.9-133)		03/04/13 :03/04/13	
Fluoranthene-d10	89	ug/kg wet		100		89 (64.7-154)		03/04/13 :03/04/13	
LCS (B13C037-BS2)									
Acenaphthene	37.6	ug/kg wet	20	40.0		94 (50-150)		03/04/13 :03/04/13	
Acenaphthylene	38.4	ug/kg wet	20	40.0		96 (50-150)		03/04/13 :03/04/13	
Anthracene	38.4	ug/kg wet	20	40.0		96 (50-150)		03/04/13 :03/04/13	
Benzo(a)anthracene	38.4	ug/kg wet	10	40.0		96 (50-150)		03/04/13 :03/04/13	
Benzo(a)pyrene	38.4	ug/kg wet	10	40.0		96 (50-150)		03/04/13 :03/04/13	
Benzo(b)fluoranthene	36.8	ug/kg wet	10	40.0		92 (50-150)		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	39.6	ug/kg wet	10	40.0		99 (50-150)		03/04/13 :03/04/13	
Benzo(k)fluoranthene	36.4	ug/kg wet	10	40.0		91 (50-150)		03/04/13 :03/04/13	
Chrysene	38.4	ug/kg wet	10	40.0		96 (50-150)		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	36.8	ug/kg wet	10	40.0		92 (50-150)		03/04/13 :03/04/13	
Fluoranthene	38.0	ug/kg wet	10	40.0		95 (50-150)		03/04/13 :03/04/13	
Fluorene	38.0	ug/kg wet	20	40.0		95 (50-150)		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	38.4	ug/kg wet	10	40.0		96 (50-150)		03/04/13 :03/04/13	
Naphthalene	33.6	ug/kg wet	20	40.0		84 (50-150)		03/04/13 :03/04/13	
Phenanthrene	38.4	ug/kg wet	20	40.0		96 (50-150)		03/04/13 :03/04/13	
Pyrene	38.4	ug/kg wet	10	40.0		96 (50-150)		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	65	ug/kg wet		100		65 (31.9-133)		03/04/13 :03/04/13	
Fluoranthene-d10	92	ug/kg wet		100		92 (64.7-154)		03/04/13 :03/04/13	
Duplicate (B13C037-DUP1)		Source: W13B210-01							

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Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Duplicate (B13C037-DUP1)			Source: W13B210-01						
Acenaphthene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Acenaphthylene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Anthracene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Chrysene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Fluorene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Naphthalene	ND	ug/kg dry	40		ND		(50)	03/04/13 :03/05/13	
Phenanthrene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/05/13	
Pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	73	ug/kg dry		107		68		03/04/13 :03/05/13	
Fluoranthene-d10	89	ug/kg dry		107		84		03/04/13 :03/05/13	
Duplicate (B13C037-DUP2)			Source: W13C011-03						
Acenaphthene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Acenaphthylene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Anthracene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Benzo(a)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Chrysene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluorene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Naphthalene	ND	ug/kg dry	40		ND		(50)	03/04/13 :03/04/13	
Phenanthrene	ND	ug/kg dry	20		ND		(50)	03/04/13 :03/04/13	
Pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	62	ug/kg dry		115		54		03/04/13 :03/04/13	
Fluoranthene-d10	100	ug/kg dry		115		90		03/04/13 :03/04/13	
Duplicate (B13C037-DUP3)			Source: W13C011-05						

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City of Portland
Water Pollution Control Laboratory
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Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Duplicate (B13C037-DUP3)			Source: W13C011-05						
Acenaphthene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Acenaphthylene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Anthracene	ND	ug/kg dry	1500		ND		(50)	03/04/13 :03/04/13	D4, M15
Benzo(a)anthracene	35.8	ug/kg dry	10		37.3		4 (50)	03/04/13 :03/04/13	
Benzo(a)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(b)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(g,h,i)perylene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Benzo(k)fluoranthene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Chrysene	144	ug/kg dry	10		142		1 (50)	03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Fluoranthene	ND	ug/kg dry	250		ND		(50)	03/04/13 :03/04/13	D4, M15
Fluorene	2560	ug/kg dry	200		2850		11 (50)	03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	ND	ug/kg dry	10		ND		(50)	03/04/13 :03/04/13	
Naphthalene	ND	ug/kg dry	1000		ND		(50)	03/04/13 :03/04/13	D4, M15
Phenanthrene	5700	ug/kg dry	200		6330		11 (50)	03/04/13 :03/05/13	
Pyrene	743	ug/kg dry	10		778		6 (50)	03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*110*	ug/kg dry	*119*			96		03/04/13 :03/04/13	
Fluoranthene-d10	*120*	ug/kg dry	*119*			102		03/04/13 :03/04/13	
Matrix Spike (B13C037-MS1)			Source: W13B210-01						
Acenaphthene	105	ug/kg dry	20	116	ND	91 (50-150)		03/04/13 :03/05/13	
Acenaphthylene	108	ug/kg dry	20	116	ND	94 (50-150)		03/04/13 :03/05/13	
Anthracene	106	ug/kg dry	20	116	ND	92 (50-150)		03/04/13 :03/05/13	
Benzo(a)anthracene	109	ug/kg dry	10	116	ND	94 (50-150)		03/04/13 :03/05/13	
Benzo(a)pyrene	109	ug/kg dry	10	116	ND	95 (50-150)		03/04/13 :03/05/13	
Benzo(b)fluoranthene	103	ug/kg dry	10	116	ND	90 (50-150)		03/04/13 :03/05/13	
Benzo(g,h,i)perylene	113	ug/kg dry	10	116	ND	98 (50-150)		03/04/13 :03/05/13	
Benzo(k)fluoranthene	102	ug/kg dry	10	116	ND	88 (50-150)		03/04/13 :03/05/13	
Chrysene	106	ug/kg dry	10	116	ND	92 (50-150)		03/04/13 :03/05/13	
Dibenzo(a,h)anthracene	107	ug/kg dry	10	116	ND	93 (50-150)		03/04/13 :03/05/13	
Fluoranthene	108	ug/kg dry	10	116	ND	94 (50-150)		03/04/13 :03/05/13	
Fluorene	106	ug/kg dry	20	116	ND	92 (50-150)		03/04/13 :03/05/13	
Indeno(1,2,3-cd)pyrene	111	ug/kg dry	10	116	ND	96 (50-150)		03/04/13 :03/05/13	
Naphthalene	101	ug/kg dry	40	116	ND	88 (50-150)		03/04/13 :03/05/13	
Phenanthrene	104	ug/kg dry	20	116	ND	90 (50-150)		03/04/13 :03/05/13	
Pyrene	108	ug/kg dry	10	116	ND	94 (50-150)		03/04/13 :03/05/13	
Surrogate									
2-Methylnaphthalene-d10	*74*	ug/kg dry	*116*			64 (31.9-133)		03/04/13 :03/05/13	
Fluoranthene-d10	*91*	ug/kg dry	*116*			79 (64.7-164)		03/04/13 :03/05/13	
Matrix Spike (B13C037-MS2)			Source: W13C011-03						

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Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Semivolatile Organics - SIM - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared; Analyzed	Qualifier
Polynuclear Aromatic Hydrocarbons by GCMS-SIM - Batch B13C037									
Matrix Spike (B13C037-MS2)			Source: W13C011-03						
Acenaphthene	110	ug/kg dry	20	121	ND	91 (50-150)		03/04/13 :03/04/13	
Acenaphthylene	117	ug/kg dry	20	121	ND	97 (50-150)		03/04/13 :03/04/13	
Anthracene	115	ug/kg dry	20	121	ND	95 (50-150)		03/04/13 :03/04/13	
Benzo(a)anthracene	121	ug/kg dry	10	121	ND	100 (50-150)		03/04/13 :03/04/13	
Benzo(a)pyrene	125	ug/kg dry	10	121	ND	104 (50-150)		03/04/13 :03/04/13	
Benzo(b)fluoranthene	116	ug/kg dry	10	121	ND	98 (50-150)		03/04/13 :03/04/13	
Benzo(g,h,i)perylene	132	ug/kg dry	10	121	ND	109 (50-150)		03/04/13 :03/04/13	
Benzo(k)fluoranthene	114	ug/kg dry	10	121	ND	94 (50-150)		03/04/13 :03/04/13	
Chrysene	121	ug/kg dry	10	121	ND	100 (50-150)		03/04/13 :03/04/13	
Dibenzo(a,h)anthracene	118	ug/kg dry	10	121	ND	98 (50-150)		03/04/13 :03/04/13	
Fluoranthene	123	ug/kg dry	10	121	ND	102 (50-150)		03/04/13 :03/04/13	
Fluorene	112	ug/kg dry	20	121	ND	93 (50-150)		03/04/13 :03/04/13	
Indeno(1,2,3-cd)pyrene	127	ug/kg dry	10	121	ND	105 (50-150)		03/04/13 :03/04/13	
Naphthalene	103	ug/kg dry	40	121	ND	69 (50-150)		03/04/13 :03/04/13	
Phenanthrene	114	ug/kg dry	20	121	ND	94 (50-150)		03/04/13 :03/04/13	
Pyrene	126	ug/kg dry	10	121	ND	105 (50-150)		03/04/13 :03/04/13	
Surrogate									
2-Methylnaphthalene-d10	*69*		ug/kg dry	*121*		58 (31.9-133)		03/04/13 :03/04/13	
Fluoranthene-d10	*110*		ug/kg dry	*121*		90 (64.7-151)		03/04/13 :03/04/13	

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Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Polychlorinated Biphenyls (PCBs) - QC

Analyte	Result	Units	MRL	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
PCB Aroclors by GC-ECD - Batch B13C116									
Blank (B13C116-BLK1)									
Aroclor 1016/1242	ND	ug/kg wet	10.0					03/06/13:03/13/13	
Aroclor 1221	ND	ug/kg wet	20.0					03/06/13:03/13/13	
Aroclor 1232	ND	ug/kg wet	10.0					03/06/13:03/13/13	
Aroclor 1248	ND	ug/kg wet	10.0					03/06/13:03/13/13	
Aroclor 1254	ND	ug/kg wet	10.0					03/06/13:03/13/13	
Aroclor 1260	ND	ug/kg wet	10.0					03/06/13:03/13/13	
Aroclor 1262	ND	ug/kg wet	10.0					03/06/13:03/13/13	
Aroclor 1268	ND	ug/kg wet	10.0					03/06/13:03/13/13	
Surrogate									
Tetrachloro-m-xylene	*10.7*		ug/kg wet	*10.0*		107		03/06/13:03/13/13	
Decachlorobiphenyl	*13.2*		ug/kg wet	*10.0*		132		03/06/13:03/13/13	
LCS (B13C116-BS1)									
Aroclor 1016/1242	113.0	ug/kg wet	10.0	100		113 *(78.7-127)*		03/06/13:03/13/13	
Aroclor 1260	101.9	ug/kg wet	10.0	100		102 *(80.9-139)*		03/06/13:03/13/13	
Surrogate									
Tetrachloro-m-xylene	*10.5*		ug/kg wet	*10.0*		105 *(60.3-141)*		03/06/13:03/13/13	
Decachlorobiphenyl	*12.0*		ug/kg wet	*10.0*		120 *(48.6-164)*		03/06/13:03/13/13	
Matrix Spike (B13C116-MS1)			Source: W13B215-01						
Aroclor 1016/1242	133.7	ug/kg dry	10.0	125	ND	107 *(50.8-144)*		03/06/13:03/13/13	
Aroclor 1260	202.6	ug/kg dry	10.0	125	118.1	67 *(33-158)*		03/06/13:03/13/13	
Surrogate									
Tetrachloro-m-xylene	*12.3*		ug/kg dry	*12.5*		98 *(60.3-141)*		03/06/13:03/13/13	
Decachlorobiphenyl	*14.4*		ug/kg dry	*12.5*		115 *(48.6-164)*		03/06/13:03/13/13	
Matrix Spike Dup (B13C116-MSD1)			Source: W13B215-01						
Aroclor 1016/1242	137.7	ug/kg dry	10.0	126	ND	109 *(50.8-144)*	3 *(20)*	03/06/13:03/13/13	
Aroclor 1260	214.3	ug/kg dry	10.0	126	118.1	78 *(33-158)*	6 *(20)*	03/06/13:03/13/13	
Surrogate									
Tetrachloro-m-xylene	*12.8*		ug/kg dry	*12.6*		102 *(60.3-141)*		03/06/13:03/13/13	
Decachlorobiphenyl	*14.4*		ug/kg dry	*12.6*		114 *(48.6-164)*		03/06/13:03/13/13	

Reported: 03/22/13 06:30

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5666

Project:	Kenton Brass Foundry	Client:	Coordinated Site Analysis
Work Order:	W13C011	Project Mgr:	John O'Donovan

Qualifiers

D4	Reporting limit is raised for this analyte due to non-target matrix interference.
F2	Result for heavy oil is primarily due to overlap from diesel-range hydrocarbons.
M16	The result is an estimate due to chromatographic interference that affected quantitation.
SU7	High surrogate recovery is due to co-eluting matrix interferent.

Definitions

DET	Analyte Detected	ND	Analyte Not Detected at or above the reporting limit
MRL	Method Reporting Limit	MDL	Method Detection Limit
NR	Not Reportable	dry	Sample results reported on a dry weight basis
% Rec.	Percent Recovery	RPD	Relative Percent Difference

Reported: 03/22/13 06:30

Jennifer Shackelford

Jennifer Shackelford, Laboratory Coordinator QA/QC

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Water Pollution Control Laboratory
6543 N. Burlington Ave.
Portland, Oregon 97203-4552
Sample Custodian: (503) 823-5696
General Lab: (503) 823-5681

City of Portland Chain-of-Custody

Bureau of Environmental Services

Date: 3-1-2013
Work Order #: W13C011
Collected By: Graeme Taylor

Client Name: Coordinated Site Analysis
Project Name: Kenton Brass Foundry

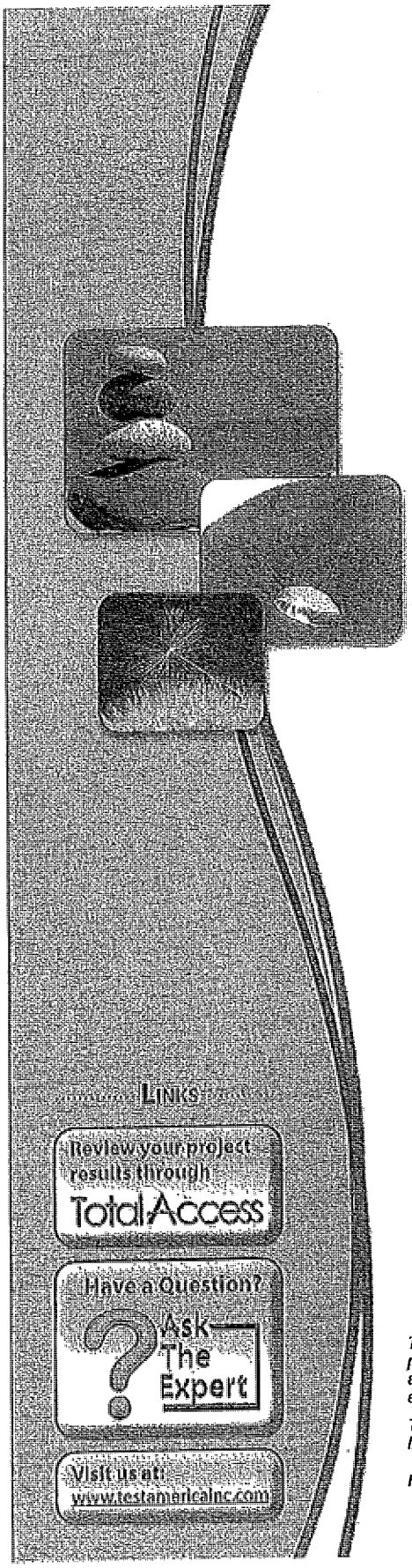
Requested Analyses

Comments: "Tank Bottom" sample smells strongly like gasoline. RAC

Lab Number	Sample ID	Sample Date	Sample Time	Grab or Comp	Sample Matrix	PCB Aroclors	PAHs 8270 S/M	RCRA 8 Metals	TPH-Gx	TPH-Dx	VOCs	Hold	# of jars
01	03012013_CS	3/1/13	1115	C	S	X	X	X					5
02	SW-E-3		1130	C		X	X	X					5
03	SW-W-3		1540	C		X	X	X					4
04	03012013_CS_Z		1600	C		X	X	X					3
05	Tank Bottom		1535	G			X		X	X	X		* Please rush this sample * 5 - need results
06	Black		1530	G								X	5 by COB Tuesday 3/5/13

Relinquished By:	Date:	Received By:	Date:	Relinquished By:	Date:	Received By:	Date:
Signature: Graeme Taylor	3-1-13	Signature: Jason Dale	3/1/13	Signature:		Signature:	
Printed Name: Graeme Taylor	Time: 17:32	Printed Name: JASON DALE	Time: 1732	Printed Name:	Time:	Printed Name:	Time:

CoC_Generic_new.xls



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Portland
9405 SW Nimbus Ave.
Beaverton, OR 97008
Tel: (503)906-9200

TestAmerica Job ID: 250-10324-1
Client Project/Site: Kenton Brass Foundry/W13C011

For:
City of Portland
Water Pollution Laboratory
6543 N. Burlington Ave
Portland, Oregon 97203

Attn: Jennifer Shackelford

Erica Fot

Authorized for release by:
3/5/2013 3:38:06 PM
Erica Fot
Project Mgmt. Assistant
erica.fot@testamericainc.com

Designee for

Jay Willms
Project Manager I
jay.willms@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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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Sample Summary

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
250-10324-1	W13C011-05	Solid	03/01/13 15:33	03/04/13 10:00

Case Narrative

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Job ID: 250-10324-1

Laboratory: TestAmerica Portland

Narrative

Job Narrative
250-10324-1

Comments
No additional comments.

Receipt
The sample was received on 3/4/2013 10:00 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.3° C.

GC/MS VOA
Method 8260B: The following sample was diluted due to the abundance of non-target analytes: W13C011-05 (250-10324-1). Elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

GC VOA
Method AK101, NWTPH-Gx: The Gasoline Range Hydrocarbons (GRH) concentration reported for the following sample(s) is due to the presence of diesel: (250-10324-1 DU), W13C011-05 (250-10324-1).

No other analytical or quality issues were noted.

VOA Prep
No analytical or quality issues were noted.

Definitions/Glossary

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

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, 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: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: W13C011-05
Date Collected: 03/01/13 15:33
Date Received: 03/04/13 10:00

Lab Sample ID: 250-10324-1
Matrix: Solid
Percent Solids: 77.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		7800		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Benzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Bromobenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Bromochloromethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Bromodichloromethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Bromoform	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Bromomethane	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
2-Butanone (MEK)	ND		3100		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
n-Butylbenzene	3400		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
sec-Butylbenzene	1400		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
tert-Butylbenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Carbon disulfide	ND		3100		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Carbon tetrachloride	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Chlorobenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Chloroethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Chloroform	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Chloromethane	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
2-Chlorotoluene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
4-Chlorotoluene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2-Dibromo-3-Chloropropane	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Dibromochloromethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2-Dibromoethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Dibromomethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2-Dichloroethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,3-Dichlorobenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,4-Dichlorobenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Dichlorodifluoromethane	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,1-Dichloroethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,1-Dichloroethene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
cis-1,2-Dichloroethene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
trans-1,2-Dichloroethene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2-Dichloropropane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,3-Dichloropropane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
2,2-Dichloropropane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,1-Dichloropropene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
cis-1,3-Dichloropropene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
trans-1,3-Dichloropropene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Ethylbenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Hexachlorobutadiene	ND		1200		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
2-Hexanone	ND		3100		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Isopropylbenzene	ND		620		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
p-Isopropyltoluene	1700		620		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
4-Methyl-2-pentanone (MIBK)	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Methyl tert-butyl ether	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Methylene Chloride	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Naphthalene	ND		620		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
N-Propylbenzene	440		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Styrene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,1,1,2-Tetrachloroethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: W13C011-05
Date Collected: 03/01/13 15:33
Date Received: 03/04/13 10:00

Lab Sample ID: 250-10324-1
Matrix: Solid
Percent Solids: 77.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Tetrachloroethene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Toluene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2,3-Trichlorobenzene	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2,4-Trichlorobenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,1,1-Trichloroethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,1,2-Trichloroethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Trichloroethene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Trichlorofluoromethane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2,3-Trichloropropane	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2,4-Trimethylbenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,3,5-Trimethylbenzene	540		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
Vinyl chloride	ND		1600		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
m,p-Xylene	ND		620		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
o-Xylene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2
1,2-Dichlorobenzene	ND		310		ug/Kg	☼	03/04/13 11:24	03/04/13 14:20	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Sur)	101		75 - 125	03/04/13 11:24	03/04/13 14:20	2
4-Bromofluorobenzene (Sur)	100		75 - 125	03/04/13 11:24	03/04/13 14:20	2
Dibromofluoromethane (Sur)	100		75 - 125	03/04/13 11:24	03/04/13 14:20	2
Toluene-d8 (Sur)	100		75 - 125	03/04/13 11:24	03/04/13 14:20	2

Client Sample Results

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Client Sample ID: W13C011-05
Date Collected: 03/01/13 15:33
Date Received: 03/04/13 10:00

Lab Sample ID: 250-10324-1
Matrix: Solid
Percent Solids: 77.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	850		63		mg/Kg	☼	03/04/13 11:58	03/04/13 14:37	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*67*		*50 - 150*	*03/04/13 11:58*	*03/04/13 14:37*	*10*

Client Sample Results

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

General Chemistry

Client Sample ID: W13C011-05
Date Collected: 03/01/13 15:33
Date Received: 03/04/13 10:00

Lab Sample ID: 250-10324-1
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23		0.010		%			03/04/13 23:26	1
Percent Solids	77		0.010		%			03/04/13 23:26	1

QC Sample Results

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 250-14706/1-A
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 14706

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		2400		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Benzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Bromobenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Bromochloromethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Bromodichloromethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Bromoform	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Bromomethane	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
2-Butanone (MEK)	ND		950		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
n-Butylbenzene	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
sec-Butylbenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
tert-Butylbenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Carbon disulfide	ND		950		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Carbon tetrachloride	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Chlorobenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Chloroethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Chloroform	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Chloromethane	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
2-Chlorotoluene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
4-Chlorotoluene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2-Dibromo-3-Chloropropane	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Dibromochloromethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2-Dibromoethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Dibromomethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2-Dichloroethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,3-Dichlorobenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,4-Dichlorobenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Dichlorodifluoromethane	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,1-Dichloroethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,1-Dichloroethene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
cis-1,2-Dichloroethene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
trans-1,2-Dichloroethene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2-Dichloropropane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,3-Dichloropropane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
2,2-Dichloropropane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,1-Dichloropropene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
cis-1,3-Dichloropropene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
trans-1,3-Dichloropropene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Ethylbenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Hexachlorobutadiene	ND		380		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
2-Hexanone	ND		950		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Isopropylbenzene	ND		190		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
p-Isopropyltoluene	ND		190		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
4-Methyl-2-pentanone (MIBK)	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Methyl tert-butyl ether	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Methylene Chloride	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Naphthalene	ND		190		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
N-Propylbenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Styrene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 250-14706/1-A
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 14706

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,1,2,2-Tetrachloroethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Tetrachloroethene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Toluene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2,3-Trichlorobenzene	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2,4-Trichlorobenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,1,1-Trichloroethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,1,2-Trichloroethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Trichloroethene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Trichlorofluoromethane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2,3-Trichloropropane	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2,4-Trimethylbenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,3,5-Trimethylbenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
Vinyl chloride	ND		470		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
m,p-Xylene	ND		190		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
o-Xylene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1
1,2-Dichlorobenzene	ND		95		ug/Kg		03/04/13 11:24	03/04/13 12:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		75 - 125	03/04/13 11:24	03/04/13 12:47	1
4-Bromofluorobenzene (Surr)	102		75 - 125	03/04/13 11:24	03/04/13 12:47	1
Dibromofluoromethane (Surr)	99		75 - 125	03/04/13 11:24	03/04/13 12:47	1
Toluene-d8 (Surr)	101		75 - 125	03/04/13 11:24	03/04/13 12:47	1

Lab Sample ID: LCS 250-14706/2-A
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14706

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	9520	10900		ug/Kg		115	65 - 150
Benzene	1900	1920		ug/Kg		101	80 - 120
Bromobenzene	1900	2180		ug/Kg		114	80 - 120
Bromochloromethane	1900	2280		ug/Kg		120	80 - 120
Bromodichloromethane	1900	1900		ug/Kg		100	80 - 140
Bromoform	1900	2280		ug/Kg		120	75 - 150
Bromomethane	1900	2380		ug/Kg		125	65 - 130
2-Butanone (MEK)	9520	9100		ug/Kg		96	70 - 125
n-Butylbenzene	1900	1890		ug/Kg		99	80 - 150
sec-Butylbenzene	1900	2150		ug/Kg		113	80 - 135
tert-Butylbenzene	1900	2120		ug/Kg		112	80 - 130
Carbon disulfide	3810	4140		ug/Kg		109	65 - 140
Carbon tetrachloride	1900	2110		ug/Kg		111	70 - 130
Chlorobenzene	1900	1970		ug/Kg		103	80 - 125
Chloroethane	1900	2150		ug/Kg		113	75 - 125
Chloroform	1900	1960		ug/Kg		103	80 - 120
Chloromethane	1900	1730		ug/Kg		91	40 - 160
2-Chlorotoluene	1900	2070		ug/Kg		109	80 - 120
4-Chlorotoluene	1900	2080		ug/Kg		109	80 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 260-14706/2-A
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14706

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromo-3-Chloropropane	1900	1830		ug/Kg		96	60 - 130
Dibromochloromethane	1900	2060		ug/Kg		108	75 - 125
1,2-Dibromoethane	1900	2040		ug/Kg		107	80 - 125
Dibromomethane	1900	1960		ug/Kg		103	80 - 120
1,2-Dichloroethane	1900	1900		ug/Kg		100	80 - 120
1,3-Dichlorobenzene	1900	2160		ug/Kg		113	80 - 125
1,4-Dichlorobenzene	1900	2190		ug/Kg		115	75 - 120
Dichlorodifluoromethane	1900	2150		ug/Kg		113	75 - 120
1,1-Dichloroethane	1900	1860		ug/Kg		98	80 - 120
1,1-Dichloroethene	1900	2120		ug/Kg		111	75 - 125
cis-1,2-Dichloroethene	1900	1910		ug/Kg		100	75 - 125
trans-1,2-Dichloroethene	1900	1920		ug/Kg		101	75 - 125
1,2-Dichloropropane	1900	1910		ug/Kg		101	80 - 125
1,3-Dichloropropane	1900	1900		ug/Kg		100	75 - 130
2,2-Dichloropropane	1900	2160		ug/Kg		114	70 - 130
1,1-Dichloropropene	1900	1990		ug/Kg		104	80 - 125
cis-1,3-Dichloropropene	1900	2030		ug/Kg		106	80 - 125
trans-1,3-Dichloropropene	1900	2050		ug/Kg		108	65 - 145
Ethylbenzene	1900	2060		ug/Kg		108	80 - 125
Hexachlorobutadiene	1900	2210		ug/Kg		116	80 - 150
2-Hexanone	9520	8440		ug/Kg		89	55 - 120
Isopropylbenzene	1900	2090		ug/Kg		110	80 - 130
p-Isopropyltoluene	1900	2200		ug/Kg		116	80 - 120
4-Methyl-2-pentanone (MIBK)	9520	9030		ug/Kg		95	50 - 120
Methyl tert-butyl ether	1900	1990		ug/Kg		105	75 - 125
Methylene Chloride	1900	2210		ug/Kg		116	75 - 125
Naphthalene	1900	2150		ug/Kg		113	80 - 130
N-Propylbenzene	1900	2090		ug/Kg		110	80 - 120
Styrene	1900	2170		ug/Kg		114	80 - 125
1,1,1,2-Tetrachloroethane	1900	2120		ug/Kg		111	80 - 130
1,1,2,2-Tetrachloroethane	1900	1950		ug/Kg		102	70 - 135
Tetrachloroethene	1900	2120		ug/Kg		111	80 - 125
Toluene	1900	1940		ug/Kg		102	80 - 120
1,2,3-Trichlorobenzene	1900	2190		ug/Kg		115	80 - 146
1,2,4-Trichlorobenzene	1900	2120		ug/Kg		111	85 - 150
1,1,1-Trichloroethane	1900	2050		ug/Kg		108	80 - 125
1,1,2-Trichloroethane	1900	1880		ug/Kg		99	80 - 125
Trichloroethene	1900	1980		ug/Kg		104	80 - 125
Trichlorofluoromethane	1900	2180		ug/Kg		115	55 - 150
1,2,3-Trichloropropane	1900	1970		ug/Kg		103	85 - 125
1,2,4-Trimethylbenzene	1900	2150		ug/Kg		113	80 - 135
1,3,5-Trimethylbenzene	1900	2190		ug/Kg		115	80 - 135
Vinyl chloride	1900	1240		ug/Kg		65	10 - 140
m,p-Xylene	3810	4200		ug/Kg		110	80 - 120
o-Xylene	1900	2140		ug/Kg		112	80 - 125
1,2-Dichlorobenzene	1900	1890		ug/Kg		99	80 - 120

QC Sample Results

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 250-14706/2-A
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14706

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Sur)	99		75 - 125
4-Bromofluorobenzene (Sur)	107		75 - 125
Dibromofluoromethane (Sur)	101		75 - 125
Toluene-d8 (Sur)	103		75 - 125

Lab Sample ID: 250-10324-1 MS
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: W13C011-05
Prep Type: Total/NA
Prep Batch: 14706

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	ND		31000	34500		ug/Kg	☼	111	60 - 145
Benzene	ND		6200	6070		ug/Kg	☼	98	80 - 125
Bromobenzene	ND		6200	6980		ug/Kg	☼	113	70 - 130
Bromochloromethane	ND		6200	7420		ug/Kg	☼	120	80 - 130
Bromodichloromethane	ND		6200	6370		ug/Kg	☼	103	80 - 135
Bromoform	ND		6200	7950		ug/Kg	☼	128	70 - 130
Bromomethane	ND		6200	7510		ug/Kg	☼	121	70 - 130
2-Butanone (MEK)	ND		31000	32000		ug/Kg	☼	103	70 - 145
n-Butylbenzene	3400		6200	8840		ug/Kg	☼	88	70 - 140
sec-Butylbenzene	1400		6200	8080		ug/Kg	☼	107	70 - 135
tert-Butylbenzene	ND		6200	6950		ug/Kg	☼	112	80 - 135
Carbon disulfide	ND		12400	13200		ug/Kg	☼	106	70 - 130
Carbon tetrachloride	ND		6200	6490		ug/Kg	☼	105	70 - 125
Chlorobenzene	ND		6200	6370		ug/Kg	☼	103	70 - 130
Chloroethane	ND		6200	6500		ug/Kg	☼	105	70 - 130
Chloroform	ND		6200	6220		ug/Kg	☼	100	80 - 125
Chloromethane	ND		6200	5430		ug/Kg	☼	88	40 - 150
2-Chlorotoluene	ND		6200	6610		ug/Kg	☼	106	80 - 125
4-Chlorotoluene	ND		6200	6600		ug/Kg	☼	106	70 - 130
1,2-Dibromo-3-Chloropropane	ND		6200	7490		ug/Kg	☼	121	60 - 145
Dibromochloromethane	ND		6200	7260		ug/Kg	☼	117	80 - 130
1,2-Dibromoethane	ND		6200	7080		ug/Kg	☼	114	80 - 130
Dibromomethane	ND		6200	6500		ug/Kg	☼	105	75 - 125
1,2-Dichloroethane	ND		6200	6300		ug/Kg	☼	101	75 - 120
1,3-Dichlorobenzene	ND		6200	7130		ug/Kg	☼	115	80 - 130
1,4-Dichlorobenzene	ND		6200	6920		ug/Kg	☼	111	80 - 120
Dichlorodifluoromethane	ND		6200	6630		ug/Kg	☼	107	65 - 135
1,1-Dichloroethane	ND		6200	5970		ug/Kg	☼	96	80 - 125
1,1-Dichloroethene	ND		6200	6570		ug/Kg	☼	106	70 - 130
cis-1,2-Dichloroethene	ND		6200	6040		ug/Kg	☼	97	75 - 120
trans-1,2-Dichloroethene	ND		6200	5920		ug/Kg	☼	95	70 - 130
1,2-Dichloropropane	ND		6200	6280		ug/Kg	☼	101	80 - 130
1,3-Dichloropropane	ND		6200	6530		ug/Kg	☼	105	75 - 130
2,2-Dichloropropane	ND		6200	6830		ug/Kg	☼	110	70 - 130
1,1-Dichloropropene	ND		6200	6360		ug/Kg	☼	102	80 - 125
cis-1,3-Dichloropropene	ND		6200	6660		ug/Kg	☼	107	80 - 130
trans-1,3-Dichloropropene	ND		6200	6920		ug/Kg	☼	112	70 - 145
Ethylbenzene	ND		6200	6600		ug/Kg	☼	106	80 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-10324-1 MS
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: W13C011-05
Prep Type: Total/NA
Prep Batch: 14706

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hexachlorobutadiene	ND		6200	8480		ug/Kg	☼	137	45 - 150
2-Hexanone	ND		31000	32600		ug/Kg	☼	105	65 - 150
Isopropylbenzene	ND		6200	6920		ug/Kg	☼	112	80 - 130
p-Isopropyltoluene	1700		6200	8430		ug/Kg	☼	108	70 - 140
4-Methyl-2-pentanone (MIBK)	ND		31000	34300		ug/Kg	☼	111	60 - 150
Methyl tert-butyl ether	ND		6200	6970		ug/Kg	☼	112	70 - 130
Methylene Chloride	ND		6200	6640		ug/Kg	☼	107	70 - 120
Naphthalene	ND		6200	6260		ug/Kg	☼	101	70 - 130
N-Propylbenzene	440		6200	7110		ug/Kg	☼	107	70 - 130
Styrene	ND		6200	7130		ug/Kg	☼	115	85 - 120
1,1,1,2-Tetrachloroethane	ND		6200	6910		ug/Kg	☼	111	80 - 130
1,1,2,2-Tetrachloroethane	ND		6200	7180		ug/Kg	☼	116	70 - 130
Tetrachloroethene	ND		6200	6490		ug/Kg	☼	105	75 - 140
Toluene	ND		6200	6230		ug/Kg	☼	100	70 - 130
1,2,3-Trichlorobenzene	ND		6200	6080		ug/Kg	☼	98	70 - 130
1,2,4-Trichlorobenzene	ND		6200	6010		ug/Kg	☼	97	70 - 150
1,1,1-Trichloroethane	ND		6200	6420		ug/Kg	☼	104	80 - 125
1,1,2-Trichloroethane	ND		6200	6690		ug/Kg	☼	108	80 - 130
Trichloroethene	ND		6200	6460		ug/Kg	☼	104	80 - 125
Trichlorofluoromethane	ND		6200	6850		ug/Kg	☼	110	70 - 130
1,2,3-Trichloropropane	ND		6200	6980		ug/Kg	☼	113	70 - 130
1,2,4-Trimethylbenzene	ND		6200	6930		ug/Kg	☼	112	70 - 130
1,3,5-Trimethylbenzene	540		6200	7280		ug/Kg	☼	109	75 - 140
Vinyl chloride	ND		6200	4170		ug/Kg	☼	67	10 - 140
m,p-Xylene	ND		12400	13500		ug/Kg	☼	109	75 - 135
o-Xylene	ND		6200	6720		ug/Kg	☼	108	70 - 130
1,2-Dichlorobenzene	ND		6200	6170		ug/Kg	☼	100	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 125*
4-Bromofluorobenzene (Surr)	*111*		*75 - 125*
Dibromofluoromethane (Surr)	*103*		*75 - 125*
Toluene-d8 (Surr)	*103*		*75 - 125*

Lab Sample ID: 250-10324-1 MSD
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: W13C011-05
Prep Type: Total/NA
Prep Batch: 14706

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	ND		31800	39600		ug/Kg	☼	125	60 - 145	14	25
Benzene	ND		6360	6140		ug/Kg	☼	96	80 - 125	1	25
Bromobenzene	ND		6360	7060		ug/Kg	☼	111	70 - 130	1	25
Bromochloromethane	ND		6360	7420		ug/Kg	☼	117	80 - 130	0	25
Bromodichloromethane	ND		6360	6280		ug/Kg	☼	99	80 - 135	1	25
Bromoform	ND		6360	8130		ug/Kg	☼	128	70 - 130	2	25
Bromomethane	ND		6360	7720		ug/Kg	☼	121	70 - 130	3	25
2-Butanone (MEK)	ND		31800	34200		ug/Kg	☼	107	70 - 145	7	25
n-Butylbenzene	3400		6360	8800		ug/Kg	☼	85	70 - 140	0	25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-10324-1 MSD
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: W13C011-06
Prep Type: Total/NA
Prep Batch: 14706

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene	1400		6360	8210		ug/Kg	☼	106	70 - 135	2	25
tert-Butylbenzene	ND		6360	6960		ug/Kg	☼	109	80 - 135	0	25
Carbon disulfide	ND		12700	13600		ug/Kg	☼	107	70 - 130	3	25
Carbon tetrachloride	ND		6360	6480		ug/Kg	☼	102	70 - 125	0	25
Chlorobenzene	ND		6360	6360		ug/Kg	☼	100	70 - 130	0	25
Chloroethane	ND		6360	6840		ug/Kg	☼	107	70 - 130	5	25
Chloroform	ND		6360	6000		ug/Kg	☼	94	80 - 125	4	25
Chloromethane	ND		6360	5580		ug/Kg	☼	88	40 - 150	3	25
2-Chlorotoluene	ND		6360	6620		ug/Kg	☼	104	80 - 125	0	25
4-Chlorotoluene	ND		6360	6640		ug/Kg	☼	104	70 - 130	1	25
1,2-Dibromo-3-Chloropropane	ND		6360	7120		ug/Kg	☼	112	60 - 145	5	25
Dibromochloromethane	ND		6360	7210		ug/Kg	☼	113	80 - 130	1	25
1,2-Dibromoethane	ND		6360	7040		ug/Kg	☼	111	80 - 130	0	25
Dibromomethane	ND		6360	6440		ug/Kg	☼	101	75 - 125	1	25
1,2-Dichloroethane	ND		6360	6150		ug/Kg	☼	97	75 - 120	2	25
1,3-Dichlorobenzene	ND		6360	6870		ug/Kg	☼	108	80 - 130	4	25
1,4-Dichlorobenzene	ND		6360	6940		ug/Kg	☼	109	80 - 120	0	25
Dichlorodifluoromethane	ND		6360	6800		ug/Kg	☼	107	65 - 135	3	25
1,1-Dichloroethane	ND		6360	5900		ug/Kg	☼	93	80 - 125	1	25
1,1-Dichloroethene	ND		6360	6540		ug/Kg	☼	103	70 - 130	0	25
cis-1,2-Dichloroethene	ND		6360	6050		ug/Kg	☼	95	75 - 120	0	25
trans-1,2-Dichloroethene	ND		6360	5810		ug/Kg	☼	91	70 - 130	2	25
1,2-Dichloropropane	ND		6360	6220		ug/Kg	☼	98	80 - 130	1	25
1,3-Dichloropropane	ND		6360	6630		ug/Kg	☼	104	75 - 130	1	25
2,2-Dichloropropane	ND		6360	6750		ug/Kg	☼	106	70 - 130	1	25
1,1-Dichloropropene	ND		6360	6500		ug/Kg	☼	102	80 - 125	2	25
cis-1,3-Dichloropropene	ND		6360	6700		ug/Kg	☼	105	80 - 130	1	25
trans-1,3-Dichloropropene	ND		6360	6990		ug/Kg	☼	110	70 - 145	1	25
Ethylbenzene	ND		6360	6580		ug/Kg	☼	104	80 - 125	0	25
Hexachlorobutadiene	ND		6360	8380		ug/Kg	☼	132	45 - 150	1	25
2-Hexanone	ND		31800	33400		ug/Kg	☼	105	65 - 150	2	25
Isopropylbenzene	ND		6360	7040		ug/Kg	☼	111	80 - 130	2	25
p-Isopropyltoluene	1700		6360	8670		ug/Kg	☼	109	70 - 140	3	25
4-Methyl-2-pentanone (MIBK)	ND		31800	36400		ug/Kg	☼	114	60 - 150	8	25
Methyl tert-butyl ether	ND		6360	7100		ug/Kg	☼	112	70 - 130	2	25
Methylene Chloride	ND		6360	6740		ug/Kg	☼	106	70 - 120	1	25
Naphthalene	ND		6360	6420		ug/Kg	☼	101	70 - 130	3	25
N-Propylbenzene	440		6360	7090		ug/Kg	☼	105	70 - 130	0	25
Styrene	ND		6360	7120		ug/Kg	☼	112	85 - 120	0	25
1,1,1,2-Tetrachloroethane	ND		6360	6900		ug/Kg	☼	108	80 - 130	0	25
1,1,2,2-Tetrachloroethane	ND		6360	6970		ug/Kg	☼	110	70 - 130	3	25
Tetrachloroethene	ND		6360	6630		ug/Kg	☼	104	75 - 140	2	25
Toluene	ND		6360	6240		ug/Kg	☼	98	70 - 130	0	25
1,2,3-Trichlorobenzene	ND		6360	5980		ug/Kg	☼	94	70 - 130	2	25
1,2,4-Trichlorobenzene	ND		6360	5860		ug/Kg	☼	92	70 - 150	3	25
1,1,1-Trichloroethane	ND		6360	6390		ug/Kg	☼	101	80 - 125	1	25
1,1,2-Trichloroethane	ND		6360	6630		ug/Kg	☼	104	80 - 130	1	25
Trichloroethene	ND		6360	6530		ug/Kg	☼	103	80 - 125	1	25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 250-10324-1 MSD
Matrix: Solid
Analysis Batch: 14756

Client Sample ID: W13C011-05
Prep Type: Total/NA
Prep Batch: 14706

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Trichlorofluoromethane	ND		6360	6820		ug/Kg	☼	107	70 - 130	0	25
1,2,3-Trichloropropane	ND		6360	6900		ug/Kg	☼	109	70 - 130	1	25
1,2,4-Trimethylbenzene	ND		6360	6760		ug/Kg	☼	106	70 - 130	2	25
1,3,5-Trimethylbenzene	540		6360	7300		ug/Kg	☼	106	75 - 140	0	25
Vinyl chloride	ND		6360	4190		ug/Kg	☼	66	10 - 140	1	25
m,p-Xylene	ND		12700	13400		ug/Kg	☼	105	75 - 135	1	25
o-Xylene	ND		6360	6730		ug/Kg	☼	106	70 - 130	0	25
1,2-Dichlorobenzene	ND		6360	5920		ug/Kg	☼	93	80 - 120	4	25

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		75 - 125
4-Bromofluorobenzene (Surr)	115		75 - 125
Dibromofluoromethane (Surr)	97		75 - 125
Toluene-d8 (Surr)	100		75 - 125

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 250-14708/1-A
Matrix: Solid
Analysis Batch: 14746

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 14708

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		4.0		mg/Kg		03/04/13 11:58	03/04/13 12:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid)	94		50 - 150	03/04/13 11:58	03/04/13 12:48	1

Lab Sample ID: LCS 250-14708/2-A
Matrix: Solid
Analysis Batch: 14746

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14708

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Hydrocarbons	25.0	23.4		mg/Kg		94	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene (fid)	78		50 - 150

Lab Sample ID: 250-10324-1 MS
Matrix: Solid
Analysis Batch: 14746

Client Sample ID: W13C011-05
Prep Type: Total/NA
Prep Batch: 14708

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Hydrocarbons	850		39.4	934	4	mg/Kg	☼	210	65 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
a,a,a-Trifluorotoluene (fid)	80		50 - 150

QC Sample Results

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 250-10324-1 DU
Matrix: Solid
Analysis Batch: 14746

Client Sample ID: W13C011-05
Prep Type: Total/NA
Prep Batch: 14708

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Gasoline Range Hydrocarbons	850			850		mg/Kg	☼			0.08	40

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
a,a,a-Trifluorotoluene (fid)	*64*		*50 - 150*

Method: D2216-80 - Percent Dry Weight (Solids) per ASTM D2216-80

Lab Sample ID: 250-10313-A-4 DU
Matrix: Solid
Analysis Batch: 14735

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	9.1			9.5		%				5	20
Percent Solids	91			90		%				0.5	20

Certification Summary

Client: City of Portland
Project/Site: Kenton Brass FoundryAW13C011

TestAmerica Job ID: 260-10324-1

Laboratory: TestAmerica Portland

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	State Program	10	OR00040	06-30-13
Alaska (UST)	State Program	10	UST-012	12-26-13
California	State Program	9	2597	09-30-13
Oregon	NELAP	10	OR100021	01-09-14
USDA	Federal		P330-11-00092	02-17-14
Washington	State Program	10	C586	06-23-13

Method Summary

Client: City of Portland
Project/Site: Kenton Brass Foundry/W13C011

TestAmerica Job ID: 250-10324-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PRT
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	TAL PRT
D2216-80	Percent Dry Weight (Solids) per ASTM D2216-80	ASTM	TAL PRT

Protocol References:

ASTM = ASTM International

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PRT = TestAmerica Portland, 9405 SW Nimbus Ave., Beaverton, OR 97008, TEL (503)906-9200

10324

SUBCONTRACT ORDER

City of Portland Water Pollution Control Lab

W13C011

SENDING LABORATORY:

City of Portland Water Pollution Control Lab
6543 N. Burlington Ave
Portland, OR 97203
Phone: 503-823-5600
Fax: 503-823-5656
Invoice To: Charles Lytle using P.O.# 30001516

RECEIVING LABORATORY:

TestAmerica
9405 SW Nimbus Ave
Beaverton, OR 97008
Phone :(503) 906-9200
Fax: (503) 906-9210

WPCL Project Name
Kenton Brass Foundry

TURNAROUND REQUEST
[X] ~~Standard~~
[X] Rush 1 day(s)

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: W13C011-05	Solid	Sampled:03/01/13 15:33		THIS IS A RUSH - DUE 3/5/13
Out-VOA 8260	03/05/13 17:00	03/15/13 15:33		Sample smells strongly like gasoline.
Out-NWTPH-Gx	03/05/13 17:00	03/15/13 15:33		

Containers Supplied:
G jar amber 4 oz (D) G jar amber 4 oz (E)

3/4/13 @ 0926 9:30 AM 3/4/13

Released By Date Received By Date

3/4/13 10:00 Tom Krause 03/06/13 1000

Released By Date Received By Date

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1R/G/B 5.30

Login Sample Receipt Checklist

Client: City of Portland

Job Number: 250-10324-1

Login Number: 10324
List Number: 1
Creator: Krause, Thomas

List Source: TestAmerica Portland

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
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	Received project as a subcontract.
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.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	